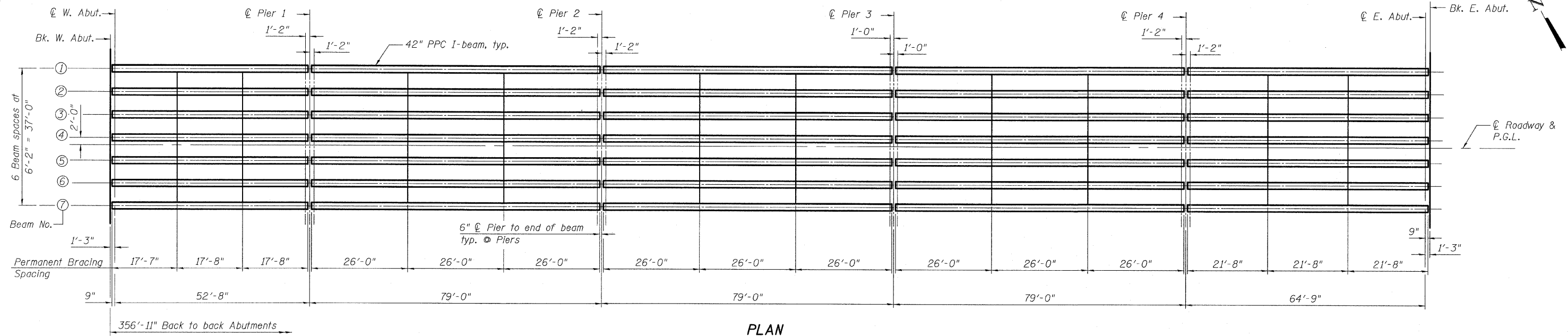
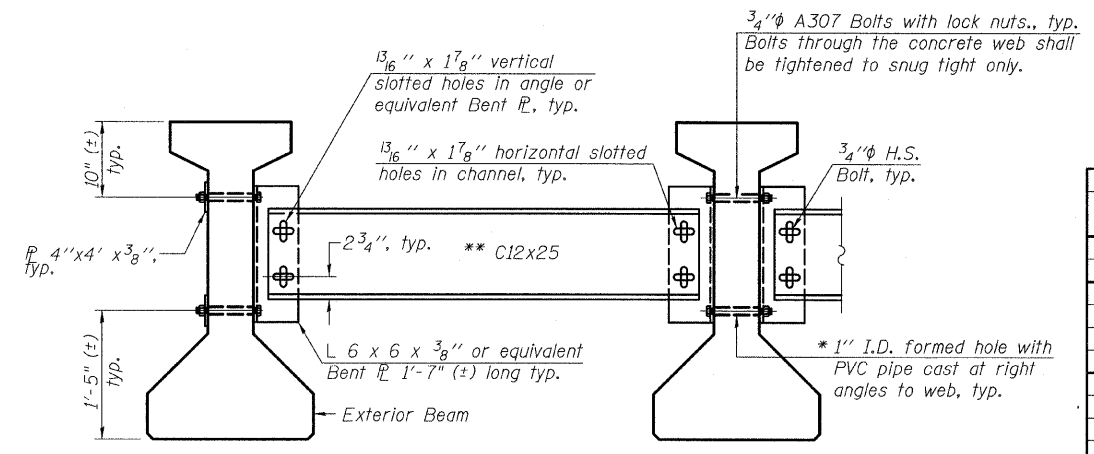


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



PLAN



Notes:  
All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.  
Two hardened washers are required for each set of oversized holes.  
All holes shall be 1/8" unless otherwise noted.  
5/16" x 3" x 3" plate washers are required over all slotted holes.  
All bolts shall be galvanized according to AASHTO M232.  
Bracing shall be installed as beams are erected and tightened as soon as possible during erection.

\* Fabricator shall locate to miss strands within permissible tolerances.  
\*\* Alternate C12x30 channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on lighter section. The alternate, if utilized, shall be provided at no extra cost to the Department.

PERMANENT BRACING DETAILS

Cost of permanent bracing included with Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36"

DESIGNED	- SP
CHECKED	- PDF
DRAWN	- SP
CHECKED	- PDF

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.6 Sp. 5
I	(in <sup>4</sup> ) 90,956		90,956		90,956		90,956		90,956
I'	(in <sup>4</sup> ) 277,493		277,493		277,493		277,493		277,493
S <sub>b</sub>	(in <sup>3</sup> ) 5,153		5,153		5,153		5,153		5,153
S <sub>b</sub> '	(in <sup>3</sup> ) 8,772		8,772		8,772		8,772		8,772
S <sub>t</sub>	(in <sup>3</sup> ) 3,736		3,736		3,736		3,736		3,736
S <sub>t</sub> '	(in <sup>3</sup> ) 26,772		26,772		26,772		26,772		26,772
Q	(k/ft) 1.12		1.12		1.12		1.12		1.12
M <sub>Q</sub>	(k) 371		823		826		826		566
s <sub>Q</sub>	(k/ft) 0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
M <sub>s<sub>Q</sub></sub>	(k) 69	194	129	235	114	224	117	228	130
M <sub>L</sub>	(k) 287	295	369	347	378	347	376	328	377
M <sub>I</sub>	(k) 112	104	123	115	126	116	126	110	132

	W. Abut.	Pier 1 Span 1	Pier 1 Span 2	Pier 2 Span 2	Pier 2 Span 3	Pier 3 Span 3	Pier 3 Span 4	Pier 4 Span 4	Pier 4 Span 5	E. Abut.
R <sub>Q</sub>	(k) 30.2	30.2	44.2	44.2	44.2	44.2	44.2	44.2	37.0	37.0
* R <sub>s<sub>Q</sub></sub>	(k) 7.9	16.0	16.0	17.7	17.7	17.3	17.3	17.6	17.6	10.7
* R <sub>L</sub>	(k) 31.9	21.8	21.8	23.4	23.4	23.4	23.4	22.8	22.8	33.2
* R <sub>I</sub>	(k) 8.9	5.7	5.7	5.8	5.8	5.8	5.8	5.9	5.9	8.6
R <sub>Total</sub>	(k) 78.9	73.7	87.7	91.1	91.1	90.7	90.7	90.5	83.3	89.5

\* The total R<sub>s<sub>Q</sub></sub>, R<sub>L</sub>, and impact reactions are assumed to be distributed evenly to each bearing line at a pier regardless of the span ratios. The bearing design at a pier is based on the maximum reactions of either span.

I: Non-composite moment of inertia of beam section (in<sup>4</sup>).  
I': Composite moment of inertia of beam section (in<sup>4</sup>).  
S<sub>b</sub>: Non-composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).  
S<sub>b</sub>': Composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).  
S<sub>t</sub>: Non-composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).  
S<sub>t</sub>': Composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).  
Q: Un-factored non-composite dead load (kips/ft.).  
M<sub>Q</sub>: Un-factored moment due to non-composite dead load conservatively taken at 0.5 of the span (kip-ft.).  
s<sub>Q</sub>: Un-factored long-term composite (superimposed) dead load (kips/ft.).  
M<sub>s<sub>Q</sub></sub>: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).  
M<sub>L</sub>: Un-factored live load moment on the composite section (kip-ft.).  
M<sub>I</sub>: Un-factored moment due to impact on the composite section (kip-ft.).

FRAMING PLAN  
STRUCTURE NO. 006-0171 WB

SHEET NO. 34	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	80	*	BUREAU	344	128
59 SHEETS	FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO. 66908

TYLIN INTERNATIONAL