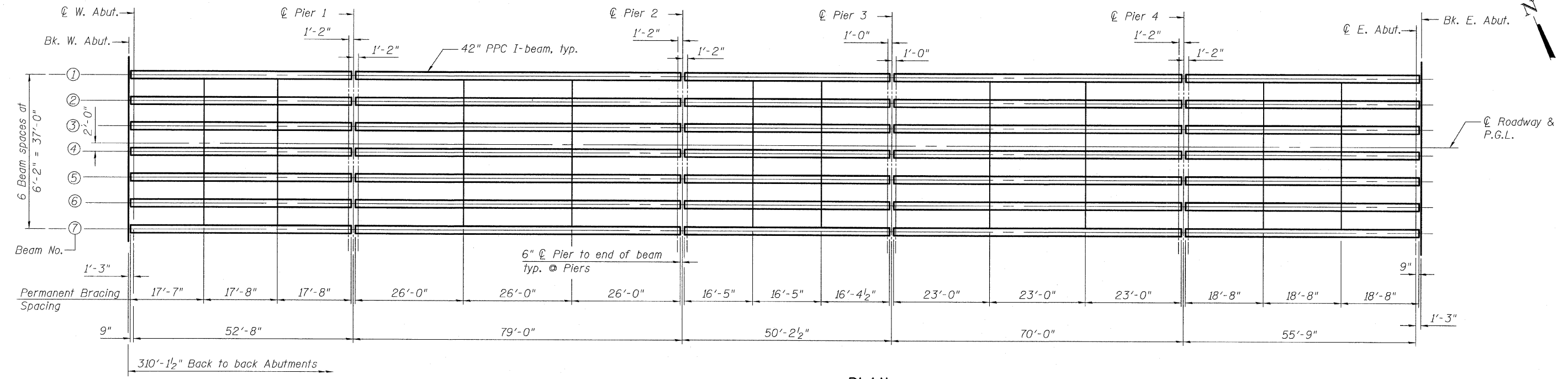
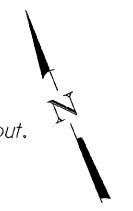
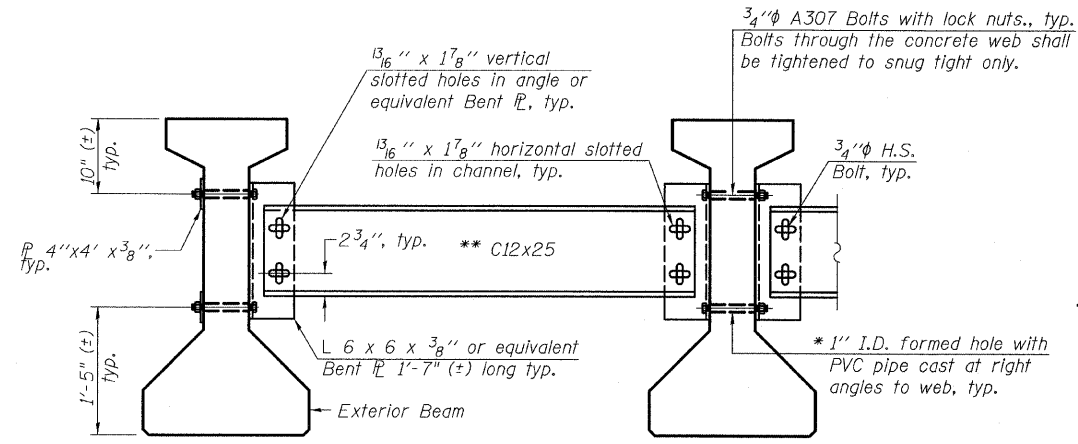


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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 1/16 inch unless otherwise noted.
5/16 inch x 3 inch x 3 inch 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

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 ⁴)	90,956		90,956		90,956		90,956	90,956
I'	(in ⁴)	277,493		277,493		277,493		277,493	277,493
S _b	(in ³)	5,153		5,153		5,153		5,153	5,153
S _b '	(in ³)	8,772		8,772		8,772		8,772	8,772
S _t	(in ³)	3,736		3,736		3,736		3,736	3,736
S _t '	(in ³)	26,772		26,772		26,772		26,772	26,772
Q	(k/')	1.12		1.12		1.12		1.12	1.12
M _P	(k')	371		823		323		644	417
s _P	(k/')	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
M _s	(k)	62	213	151	173	-8	121	114	190
M _t	(k)	287	284	353	272	216	238	309	259
M _i	(k)	111	100	118	101	88	88	108	96

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).
Q: Un-factored non-composite dead load (kips/ft.).
M_P: Un-factored moment due to non-composite dead load conservatively taken at 0.5 of the span (kip-ft.).
s_P: Un-factored long-term composite (superimposed) dead load (kips/ft.).
M_s: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
M_t: Un-factored live load moment on the composite section (kip-ft.).
M_i: Un-factored moment due to impact on the composite section (kip-ft.).

	W. Abut.	Pier 1	Pier 1	Pier 2	Pier 2	Pier 3	Pier 3	Pier 4	Pier 4	E. Abut.
		Span 1	Span 2	Span 2	Span 3	Span 3	Span 4	Span 4	Span 5	
R _s Q	(k)	30.2	44.2	44.2	28.1	28.1	39.2	39.2	31.9	31.9
R _s P	(k)	7.6	16.7	16.7	14.4	14.4	12.2	12.2	16.0	16.0
R _t	(k)	31.8	21.4	21.4	21.2	21.2	20.0	20.0	20.8	20.8
R _i	(k)	8.9	5.5	5.5	5.7	5.7	5.4	5.4	5.6	9.0
R _{Total}	(k)	78.5	73.8	87.8	85.5	69.4	65.7	76.8	81.6	74.3

* The total R_sQ, R_t, 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.

FRAMING PLAN
STRUCTURE NO. 006-0170 EB

SHEET NO. 27	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	80	*	BUREAU	344	121
59 SHEETS	FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO. 66908

TYLIN INTERNATIONAL