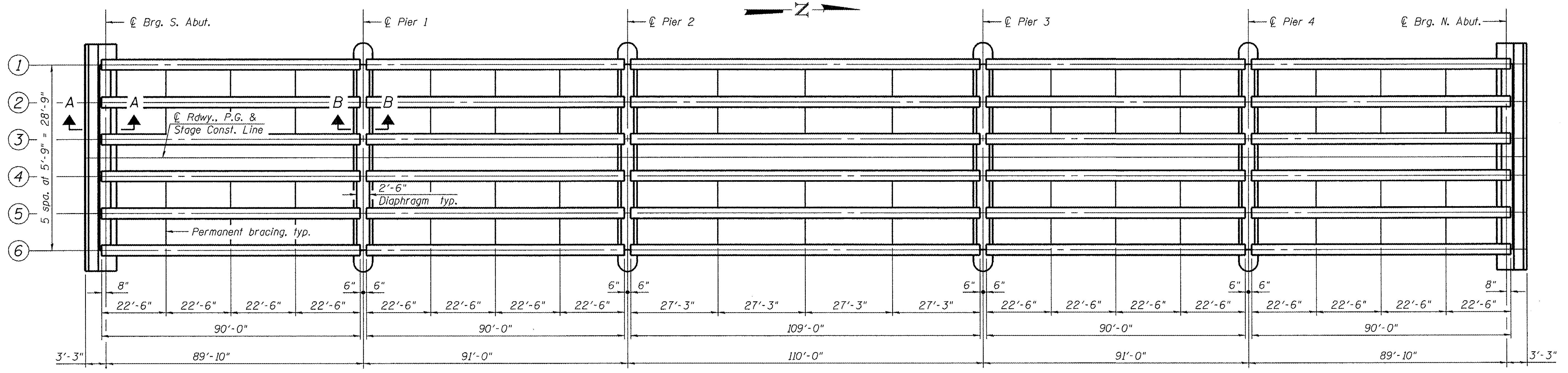


FRAMING PLAN

See sheet 14 of 41 for Section A-A and B-B.

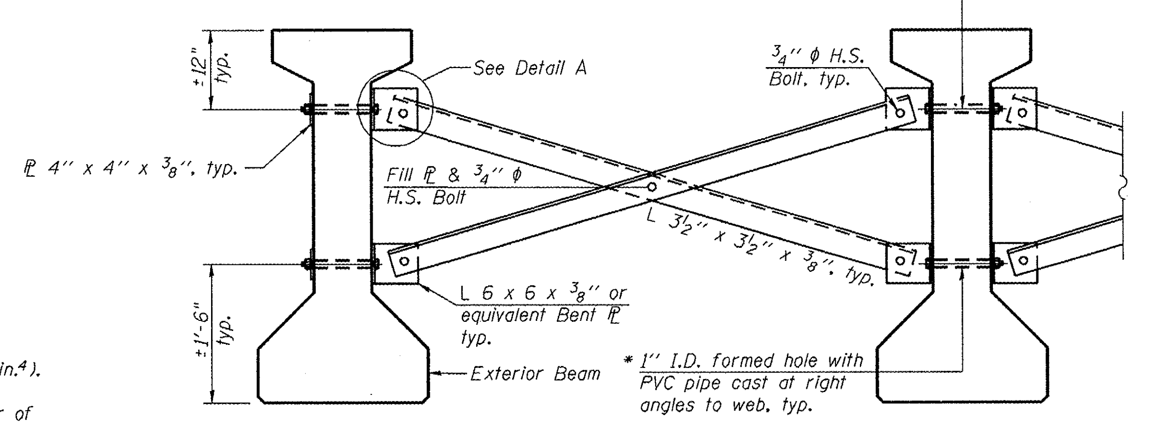
INTERIOR BEAM MOMENT TABLE						
		0.4 Sp. 1 0.6 Sp. 5	Pier 1 Pier 4	0.5 Sp. 2 0.5 Sp. 4	Pier 2 Pier 3	0.5 Sp. 3
I	(in^4)	213,715	213,715	213,715	213,715	213,715
I'	(in^4)	484,854	-	484,854	-	473,941
S_b	(in^3)	8,559	8,559	8,559	8,559	8,559
S_b'	(in^3)	12,571	-	12,571	-	12,466
S_t	(in^3)	7,362	7,362	7,362	7,362	7,362
S_t'	(in^3)	31,423	-	31,423	-	29,658
DC1	(k/')	1.22	1.22	1.22	1.22	1.22
M_{DC1}	('k)	1,230	-	1,236	-	1,819
DC2	(k/')	0.15	0.15	0.15	0.15	0.15
M_{DC2}	('k)	99	114	29	123	96
DW	(k/')	0.29	0.29	0.29	0.29	0.29
M_{DW}	('k)	183	204	53	219	171
M_{LL+IM}	(k/')	1,079	1,003	882	1,031	1,045

INTERIOR BEAM REACTION TABLE							
			Abut.	Pier 1 Span 1 Pier 4 Span 5	Pier 1 Span 2 Pier 4 Span 4	Pier 2 Span 2 Pier 3 Span 4	Pier 2 Span 3 Pier 3 Span 3
	R_{DC1}	(k)	54.4	54.4	54.5	54.5	66.1
*	R_{DC2}	(k)	5.5	7.5	7.4	7.6	7.6
*	R_{DW}	(k)	9.8	13.3	13.3	13.6	13.6
*	R_{LL+IM}	(k)	77.4	72.5	72.5	74.0	74.0
	R_{Total}	(k)	147.1	147.7	147.7	149.7	161.3

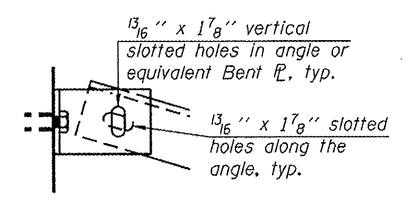
* The total R_{DC2}, R_{DW} and R_{LL+IM} are assumed to be distributed evenly to each bearing line at a pier regardless of the span ratios. The bearing design at a pier is based on the maximum reactions of either span.

I: Non-composite moment of inertia of beam section (in.^{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}).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft).
M_{LL+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

* Fabricator shall locate to miss strands within permissible tolerances.



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 15/16"ϕ 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.
Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete I-Beams.



DETAIL A

PERMANENT BRACING DETAILS FOR 54" PPC I-BEAMS

USER NAME = dheberling	DESIGNED - BRD/FLL	REVISED -	WHKS & co. ENGINEERING	7018 KINGSMILL CT., SPRINGFIELD, IL (217) 483-9457 DESIGN FIRM #184001036	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN S.N. 055-0083	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FILE NAME = 0550083-68482.dgn	CHECKED - SDS/JHP	REVISED -					542	105BR-1	MCDONOUGH	117	59
PLOT DATE = 12/21/2010	DRAWN - DLH	REVISED -							CONTRACT NO. 68482		
PLOT TIME = 10:30:45 AM	CHECKED - CWC/SDS	REVISED -				SHEET NO. 19 OF 41 SHEETS		ILLINOIS FED. AID PROJECT			