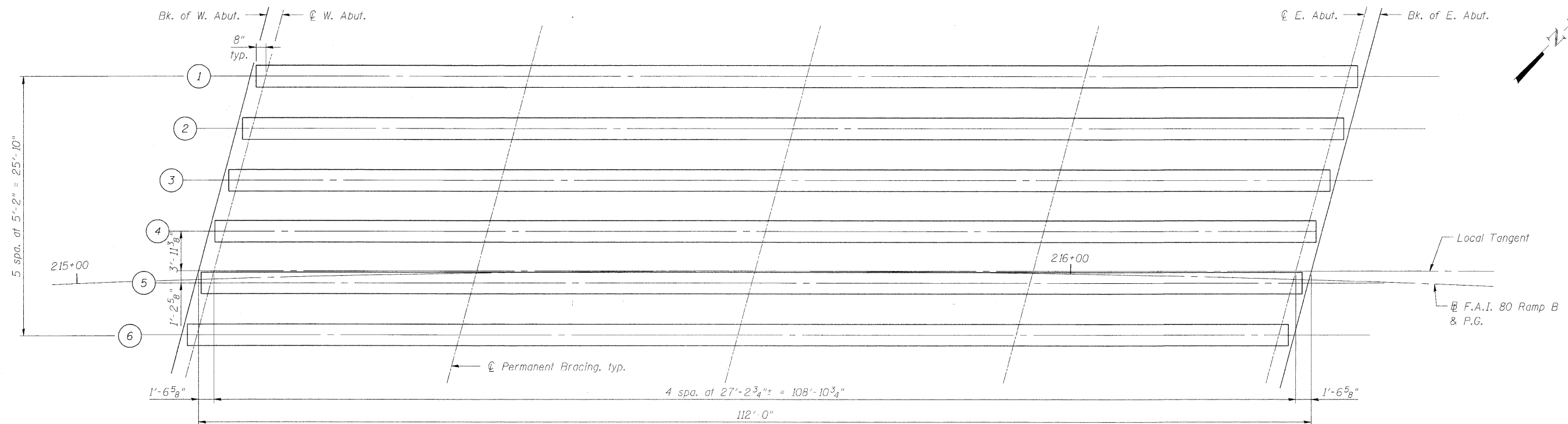
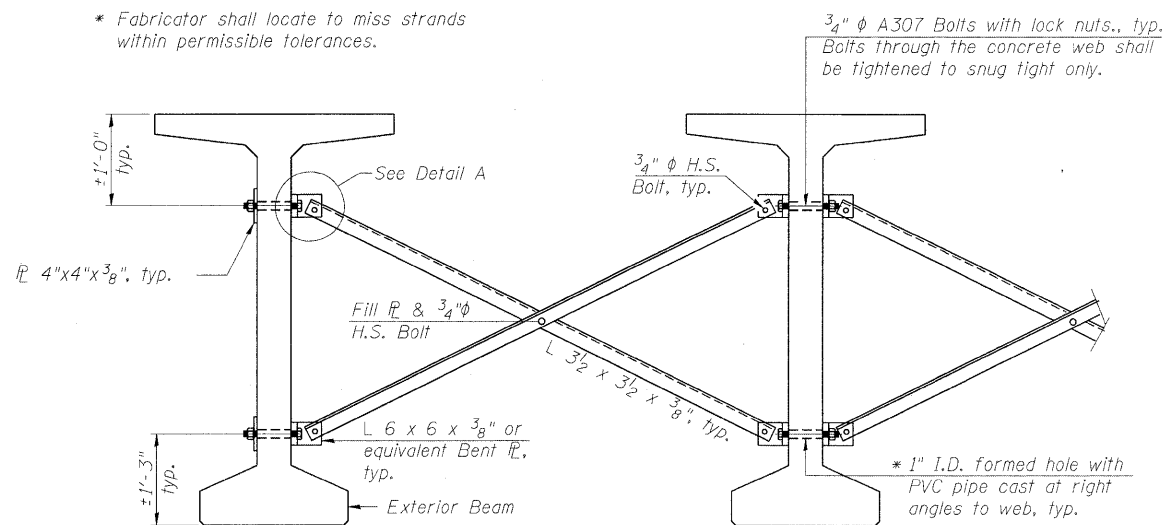


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAMING PLAN

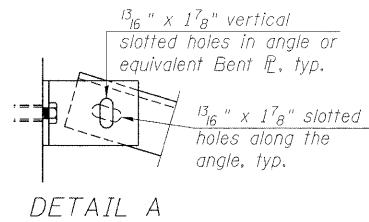
* Fabricator shall locate to miss strands within permissible tolerances.



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 1/16" 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 Bulb T-Beams.

PERMANENT BRACING DETAILS
FOR BULB-T BEAMS



INTERIOR BEAM MOMENT TABLE		
I	(in ⁴)	545,894
I'	(in ⁴)	1,032,099
S _b	(in ³)	14,915
S _b '	(in ³)	19,871
S _t	(in ³)	15,421
S _t '	(in ³)	51,451
DC1	(k/ft)	1.42
M _{DC1}	(k)	2076.1
DC2	(k/ft)	0.15
M _{DC2}	(k)	222.3
DW	(k/ft)	0.22
M _{DW}	(k)	332.7
M _{L + IM}	(k)	1617.0

INTERIOR BEAM REACTION TABLE		
R _{DC1}	(k)	77.6
R _{DC2}	(k)	8.2
R _{DW}	(k)	12.2
R _{L + IM}	(k)	122.4
R _{Total}	(k)	220.4

- I: Non-composite moment of inertia of beam section (in⁴).
- I': Composite moment of inertia of beam section (in⁴).
- S_b: Non-composite section modulus for the bottom fiber of the prestressed beam (in³).
- S_b': Composite section modulus for the bottom fiber of the prestressed beam (in³).
- S_t: Non-composite section modulus for the top fiber of the prestressed beam (in³).
- S_t': Composite section modulus for the top fiber of the prestressed beam (in³).
- 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_{L + IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

FRAMING PLAN & DETAILS
STRUCTURE NO. 032-0117

DESIGNED -	LJB
CHECKED -	CMM
DRAWN -	GJS
CHECKED -	CMM

LOCHNER

H.W. LOCHNER, INC.
CONSULTING ENGINEERS & PLANNERS
20 NORTH WACKER DRIVE SUITE 1200
CHICAGO, IL 60606

SHEET NO. 11 OF 19 SHEETS	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	(32,47-4) HBK-4 & G(N)	GRUNDY	351	324
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT		
CONTRACT NO. 66408					

* FAI 80 & FAS 297 / FAU 392