N

Bk. West Abut.
℄ Brg. West Abut.
℄ Brg. East Abut.
Bk. East Abut.

① ② ③ ④ ⑤ ⑥

5 Beam Spaces at 6'-7" = 32'-11"

16'-5½" Stage II Construction
16'-5½" Stage I Construction

℄ Roadway & P.G.L.

D (typ. throughout)

30'-4" 30'-4" 30'-4" 30'-4"

8" 120'-0" 8"

121'-4" Beam Length

124'-0" Bk. - Bk. Abuts.

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.).
$M_{ʟ + ıM}$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
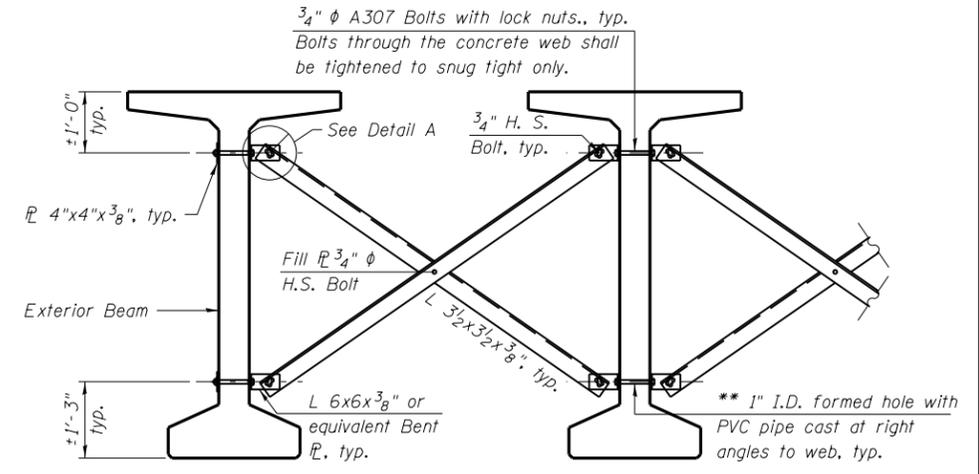
INTERIOR BEAM MOMENT TABLE

		0.5 Span
I	(in⁴)	545,894
I'	(in⁴)	1,003,015
S_b	(in³)	14,915.0
S_b'	(in³)	19,558.5
S_t	(in³)	15,421.0
S_t'	(in³)	48,414.9
DC1	(k/')	1.50
M_{DC1}	('k)	2,700
DC2	(k/')	0.15
M_{DC2}	('k)	270
DW	(k/')	0.30
M_{DW}	('k)	540
$M_{ʟ + ıM}$	('k)	2,160.0

INTERIOR BEAM REACTION TABLE

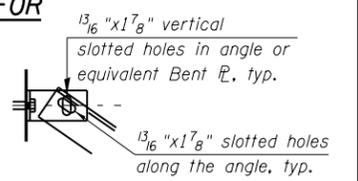|		Abuts.
* R_{DC1}	(k)	136.0
R_{DC2}	(k)	9.0
R_{DW}	(k)	18.0
* $R_{ʟ + ıM}$	(k)	115.6
* R_{Total}	(k)	278.6

* The total R_{DC1}, $R_{ʟ + ıM}$ and R_{Total} include Reaction from Approach Slab.

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 Bulb T-Beams.

** Fabricator shall locate to miss strands within permissible tolerances.

¾" φ A307 Bolts with lock nuts., typ.
Bolts through the concrete web shall be tightened to snug tight only.

See Detail A
¾" H. S. Bolt. typ.
℗ 4"x4"x⅜", typ.
Fill ℗ ¾" φ H.S. Bolt
Exterior Beam
L 3½x3½x⅜", typ.
L 6x6x⅜" or equivalent Bent ℗. typ.
** 1" I.D. formed hole with PVC pipe cast at right angles to web, typ.

±1'-0" typ.
±1'-3" typ.

PERMANENT BRACING DETAIL "D" FOR BULB-T BEAMS

¹³⁄₁₆"x1⅞" vertical slotted holes in angle or equivalent Bent ℗, typ.
¹³⁄₁₆"x1⅞" slotted holes along the angle, typ.

DETAIL A

FILE NAME = IL104 over Liehr Creek.dgn
USER NAME =
DESIGNED - CMW REVISED -
CHECKED - SAL REVISED -
PLOT SCALE =
DRAWN - TJW REVISED -
PLOT DATE =
CHECKED - SAL REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
F.A.P.-745 (IL 104) OVER LIEHR CREEK - S.N. 075-0512
SHEET NO. 13 OF 22 SHEETS

F.A.P. RTE. 745
SECTION 108B-2
COUNTY PIKE
TOTAL SHEETS 64
SHEET NO. 37
CONTRACT NO. 72981
FED. RD. DIST. NO. 6 ILLINOIS FED. AID PROJECT