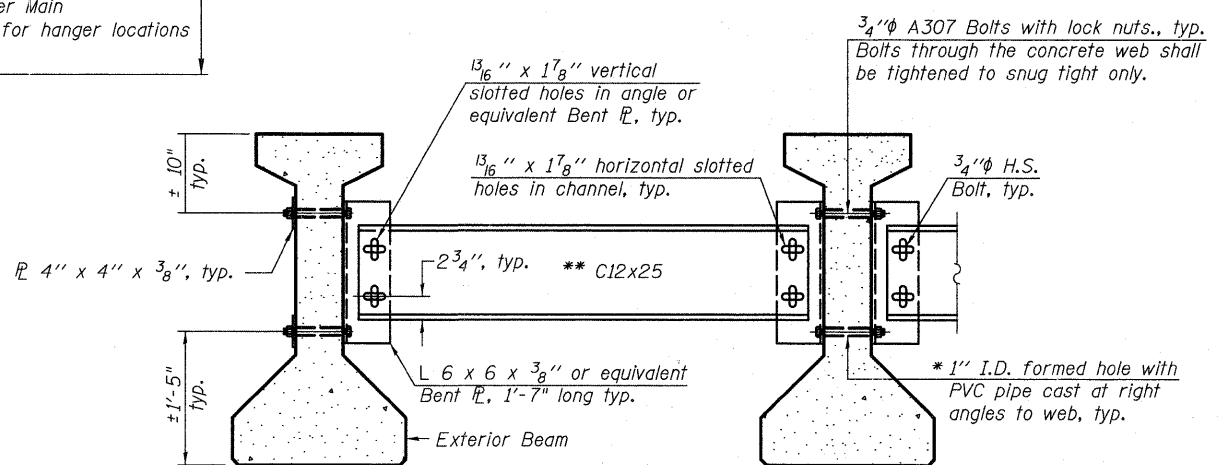


FRAMING PLAN

- 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_{L + IM}: Un-factored live load moment plus dynamic load allowance (Impact) (kip-ft.).



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.
 All structural steel shall be AASHTO M270 Grade 50

* Fabricator shall locate to miss strands within permissible tolerances.
 ** Alternate C12x30 channels are permitted to facilitate material acquisition.

**PERMANENT BRACING DETAILS
 FOR 42" PPC I-BEAMS**

INTERIOR BEAM MOMENT TABLE		
0.5 Span		
I	(in ⁴)	90,956
I'	(in ⁴)	285,060
S _b	(in ³)	5,153
S _b '	(in ³)	8,854
S _t	(in ³)	3,736
S _t '	(in ³)	29,072
DC1	(k/ft)	1.24
M _{DC1}	(k)	759
DC2	(k/ft)	0.22
M _{DC2}	(k)	137
DW	(k/ft)	0.30
M _{DW}	(k)	182
M _{L + IM}	(k)	1,131

INTERIOR BEAM REACTION TABLE		
Abut.		
R _{DC1}	(k)	43.37
R _{DC2}	(k)	7.84
R _{DW}	(k)	10.38
R _{L + IM}	(k)	87.11
R _{Total}	(k)	148.70

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DRAWN - D. Atkins	REVISED -
CHECKED - G. Hatlestad	REVISED -
DATE - March 25, 2011	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**FRAMING PLAN
 UMBDENSTOCK ROAD OVER CC&P RR
 STRUCTURE NO. 045-3162**

F.A.P. RTE. 361	SECTION 06-00214-27-BR	COUNTY KANE	TOTAL SHEETS 87	SHEET NO. 43
CONTRACT NO. 63595				
FED. ROAD DISTRICT 1 ILLINOIS FED. AID PROJECT				

SHEET NO. S10 OF S28 SHEETS