

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET	SHEET NO. 11
F.A.P. 310	(101BY) BR	WARREN	97	45	16 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #88798

NOTES

Inserts for $\frac{3}{4}$ " ϕ threaded dowel rods, when specified, are to be two strut, coil type for interior beams and single coil, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.

The nominal diameter shall be $\frac{1}{2}$ " and the nominal cross-sectional area shall be 0.153 sq. in.

Non-prestressing steel shall conform to ASTM A 706 (IL MOD), Grade 60.

A minimum $2\frac{1}{2}$ " ϕ lifting pin shall be used to engage the lifting loops during handling.

The bottom plates and studs shall be galvanized according to AASHTO M111.

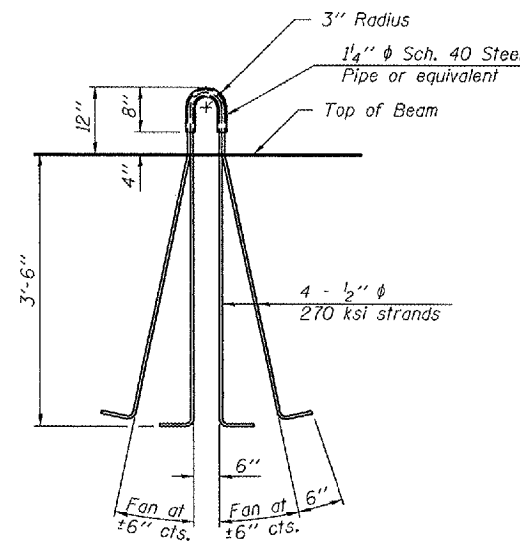
Threaded rods shall be ASTM F 1554 Grade 55.

The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to all portions of the I-beam or Bulb-T beam, except the top surface of the top flange and the bottom surface of the bottom flange, starting at each beam end and extending out a distance of 48 inches. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam.

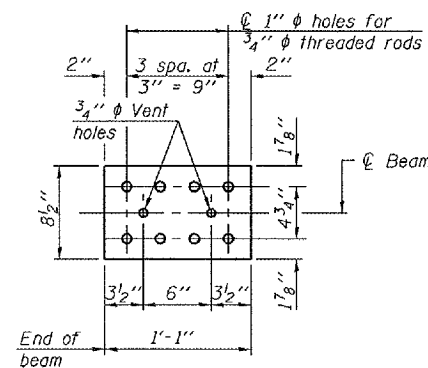
INTERIOR BEAM MOMENT TABLE		
0.5 Sp. 2		
I	(in ⁴)	144117
I'	(in ⁴)	370305
S _b	(in ³)	6834
S _b '	(in ³)	10914
S _t	(in ³)	5355
S _t '	(in ³)	26319
Q	(k/ft)	1.167
M _Q	(k)	1066
s _Q	(k/ft)	0.450
M _{sQ}	(k)	411
M _L	(k)	689
M _{Imp}	(k)	164

INTERIOR BEAM REACTION TABLE		
Abut.		
R _Q	(k)	49.9
R _{sQ}	(k)	19.2
R _L	(k)	35.0
Imp.	(k)	8.3
R _{Total}	(k)	112.4

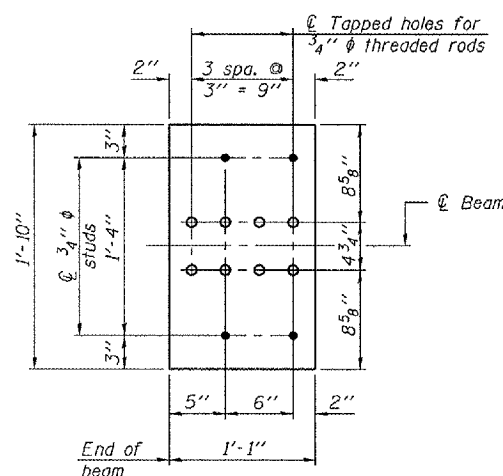
- I: Non-composite moment of inertia of beam section (in⁴).
- I': Composite moment of inertia of beam section (in⁴).
- S_b: Non-composite section modulus for the bottom fiber of the prestressed beam (in³).
- S_b': Composite section modulus for the bottom fiber of the prestressed beam (in³).
- S_t: Non-composite 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).
- Q: Un-factored non-composite dead load (kips/ft.).
- M_Q: Un-factored moment due to non-composite dead load conservatively taken at 0.5 of the span (kip-ft.).
- s_Q: Un-factored long-term composite (superimposed) dead load (kips/ft.).
- M_{sQ}: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
- M_L: Un-factored live load moment on the composite section (kip-ft.).
- M_{Imp}: Un-factored moment due to impact on the composite section (kip-ft.).



LIFTING LOOP DETAIL

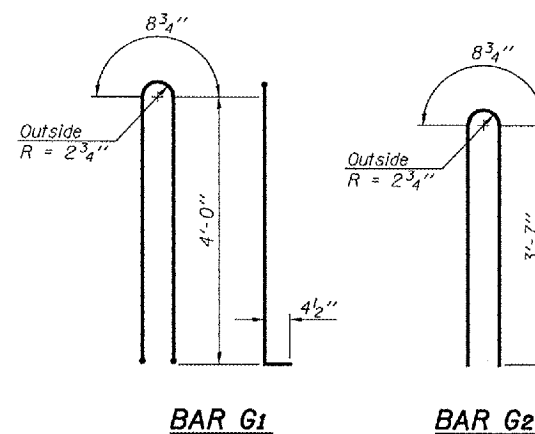


TOP PLATE



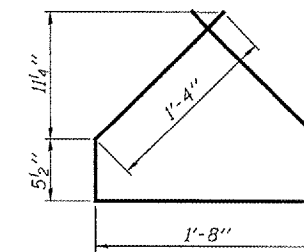
BOTTOM PLATE

See bearing details for pintle hole locations when required.

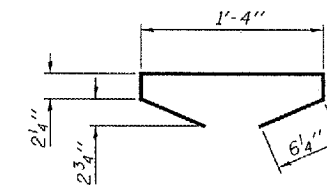


BAR G1

BAR G2



BAR G4



BAR G5

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 48"	Ft.	519

DESIGNED	JSB
CHECKED	CME
DRAWN	P.W. SWEET
CHECKED	JSB/CME

September 6, 2007
EXAMINED *Thomas J. Donagale*
MEMBER OF PROFESSIONAL DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

48" PPC I-BEAM DETAILS
F.A.P. ROUTE 310 - SECTION (101BY)BR
WARREN COUNTY
STATION 73+02
STRUCTURE NO. 094-0049