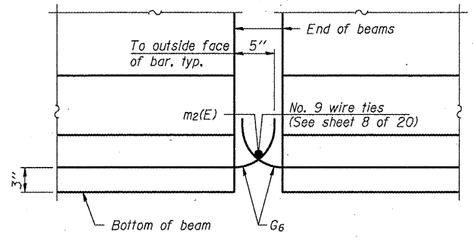
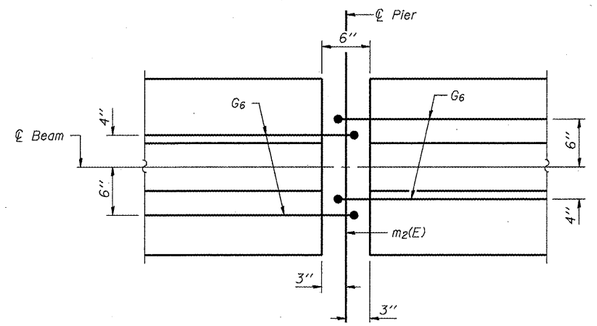
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 579	69-3(3HB)	MORGAN	793	336
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

SHEET NO. 13 OF 20 SHEETS

Contract No. 72667



ELEVATION OF BEAM AT PIER



PLAN OF BEAM AT PIER

INTERIOR BEAM MOMENT TABLE			
		0.4 Sp. 1 0.6 Sp. 2	Pier
I	(in^4)	213715	
I'	(in^4)	499417	
S_b	(in^3)	8559	
S_b'	(in^3)	12711	
S_t	(in^3)	7362	
S_t'	(in^3)	33950	
ℓ	(k/')	1.270	
$M\ell$	('k)	1556	
$s\ell$	(k/')	0.414	0.414
$M_s\ell$	('k)	289	515
M_L	('k)	693	649
M_{Imp}	('k)	154	145

INTERIOR BEAM REACTION TABLE			
		Abut.	Pier 1 Span 1 Pier 2 Span 3
	$R\ell$ (k)	62.8	62.8
*	$R_s\ell$ (k)	15.5	25.8
*	R_L (k)	36.1	30.0
*	Imp. (k)	8.1	6.8
	R_{Total} (k)	122.5	125.4

* The total $R_s\ell$, R_L, and impact reactions 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 ($in.^3$).
ℓ: Un-factored non-composite dead load (kips/ft.).
$M\ell$: Un-factored moment due to non-composite dead load conservatively taken at 0.5 of the span (kip-ft.).
$s\ell$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
$M_s\ell$: 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.).

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.

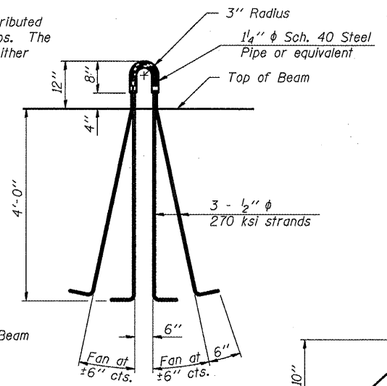
A minimum $2\frac{1}{2}$" ϕ lifting pin shall be used to engage the lifting loops during handling.

Cut G6 bars when necessary to maintain $1\frac{1}{2}$" clearance.

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

Threaded rods shall be ASTM F 1554 Grade 55.

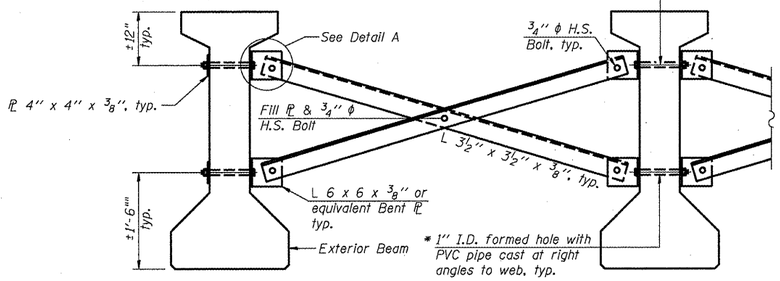
The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete 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 54 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.



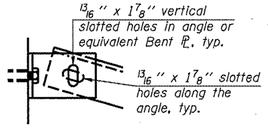
LIFTING LOOP DETAIL

* Fabricator shall locate to miss strands within permissible tolerances.

$\frac{3}{4}$" ϕ A307 Bolts with lock nuts., typ. Bolts through the concrete web shall be tightened to snug tight only.

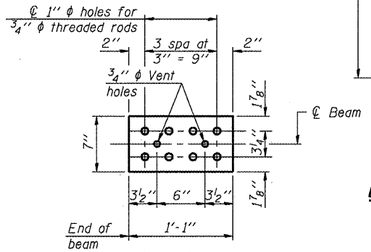


Notes:
All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.
Two hardened washers are required for each set of oversized holes.
All holes shall be $\frac{15}{16}$"ϕ unless otherwise noted.
$\frac{5}{16}$" x 3" x 3" plate washers are required over all slotted 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.

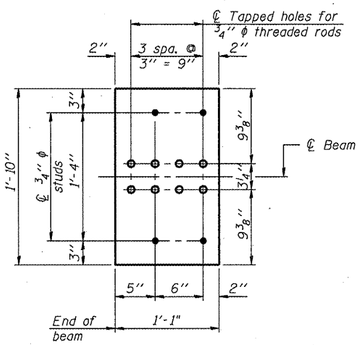


DETAIL A

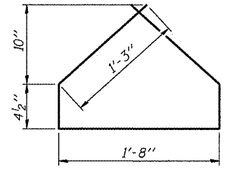
PERMANENT BRACING DETAILS FOR 54" PPC I-BEAMS



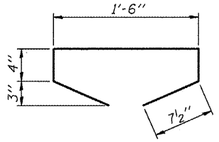
TOP PLATE



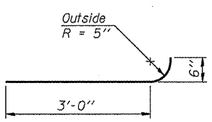
BOTTOM PLATE



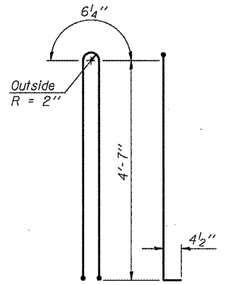
BAR G4



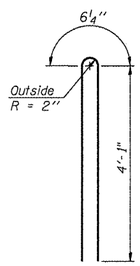
BAR G5



BAR G6



BAR G1



BAR G2

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 54"	Ft.	2200

54" PPC I-BEAM DETAILS
C.H. 7 (CONCORD RD.) (F.A.S. 579)
OVER U.S. 67/IL 104 (F.A.P. 310)
MORGAN COUNTY
STA. 807+81.68 - SECTION 69-3(3HB)
S.N. 069-0513

ALLEN HENDERSON & ASSOCIATES, INC. CONSULTING CIVIL AND STRUCTURAL ENGINEERS SPRINGFIELD, IL. PHONE: (217) 544-8033