

NOTES

All Sleeves, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete Bulb T-Beams shall be included in the contract unit price per foot of "Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams, 63 in."

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

The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.

Non-prestressing steel shall conform to AASHTO designation M-31 or M 322, Grade 60.

A minimum 2 1/2" φ lifting pin shall be used to engage the lifting loops during handling.

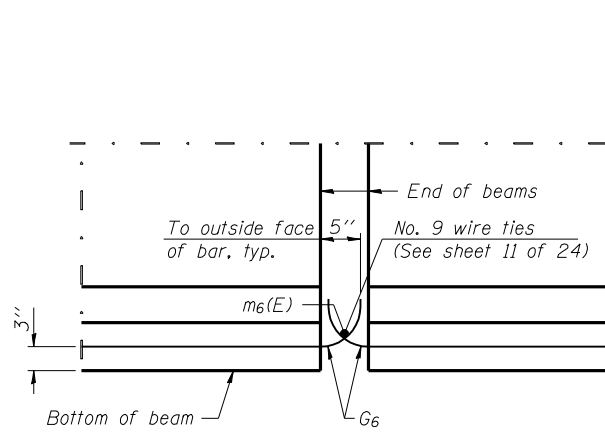
Reinforcement bars designated (E) shall be epoxy coated.

Cut G₆ bars when necessary to maintain 1/2" clearance.

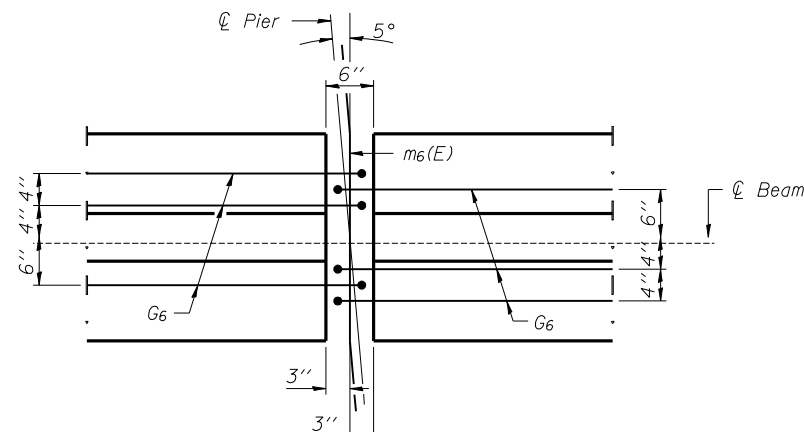
The bottom plates and studs shall be galvanized according to AASHTO M111 and ASTM A385.

Threaded rods shall be ASTM F 1554 Grade 55.

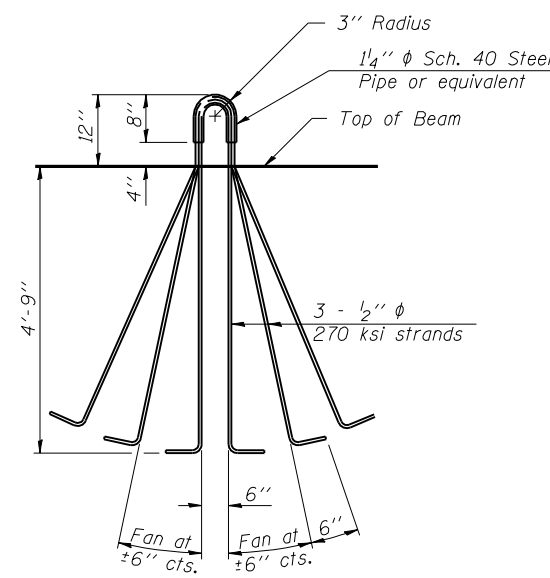
The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete 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 63 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.



ELEVATION OF BEAM AT PIER

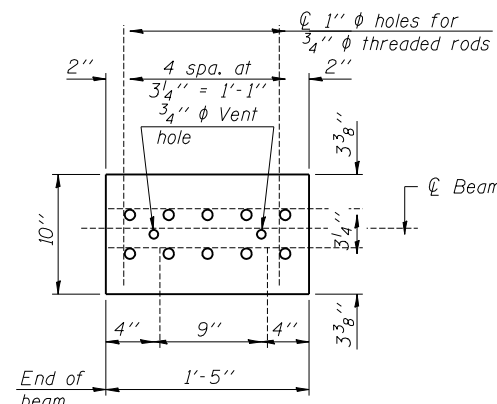


PLAN OF BEAM AT PIER

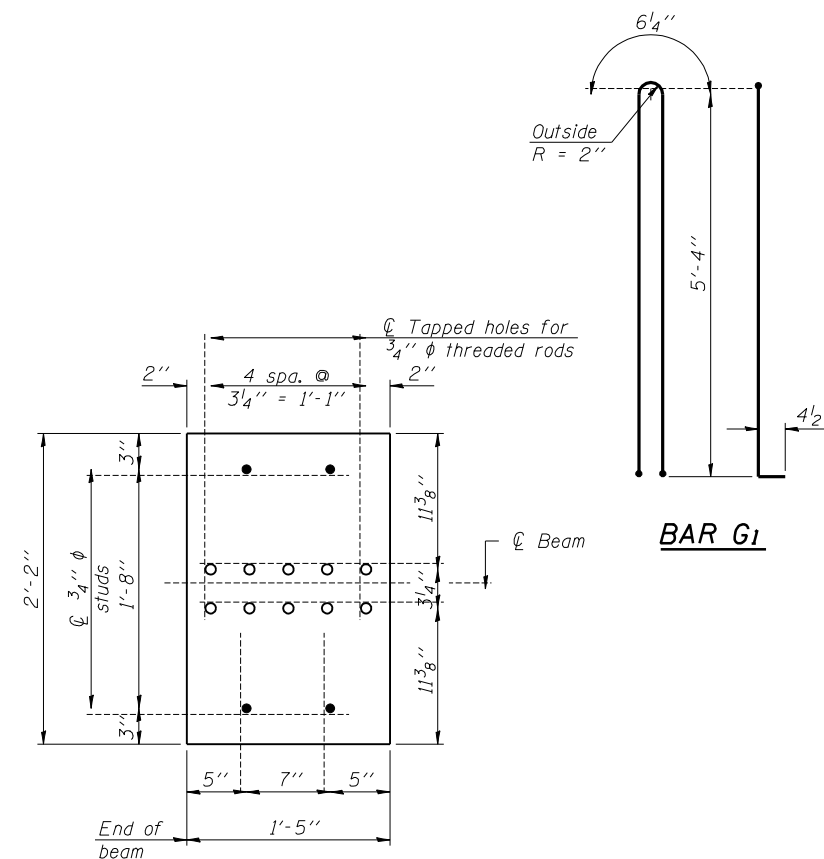


LIFTING LOOP DETAIL

INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. #1	Pier	0.6 Sp. #2
I	(in ⁴)	392638		392638
I'	(in ⁴)	710689		710689
S _b	(in ³)	12224		12224
S _b '	(in ³)	15821		15821
S _t	(in ³)	12715		12715
S _t '	(in ³)	39308		39308
M _∅	(k/')	1.401		1.401
M _{s∅}	(k)	1979.3		2204.7
s _∅	(k/')	0.397	0.397	0.397
M _{s∅}	(k)	321.3	602.9	385.6
M _∅	(k)	756.0	741.4	793.4
M (Imp)	(k)	161.8	158.6	169.8



TOP PLATE

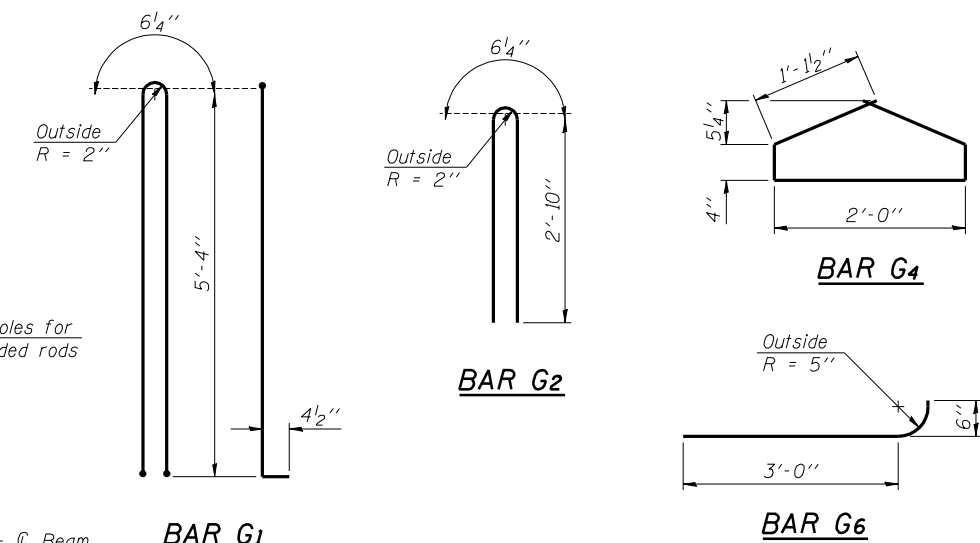


BOTTOM PLATE

See bearing details for pintle hole locations when required.

INTERIOR BEAM REACTION TABLE					
		S. Abut.	Pier - Span 1	Pier - Span 2	N. Abut.
R _∅	(k)	76.0	76.0	80.2	80.2
** R _{s∅}	(k)	16.0	28.0	28.0	17.5
** R _∅	(k)	35.6	32.1	32.1	35.8
** Imp.	(k)	7.6	6.8	6.8	7.7
R (Total)	(k)	135.2	142.9	147.1	141.2

I and I' are the moment of inertia and composite moment of inertia of the beam section.
 S_b and S_b' are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.
 S_t and S_t' are the non-composite and composite section modulus for the top fiber of the prestressed beam.
 M_∅ is the moment due to dead loads on the non-composite prestressed beam. It is conservatively calculated at 0.5 of the span.
 M_{s∅} is the moment due to dead loads on the composite section.
 M_∅ is the moment due to live load on the composite section.
 M (Imp) is the moment due to live load impact on the composite section.
 ** The total R_{s∅}, R_∅ 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 shall be based on the maximum reactions of either span.



BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams, 63"	Ft.	4065

Corporate License Number 184-001-084

63" PPC BULB T-BEAM DETAILS
 MACARTHUR BLVD. OVER F.A.I. 72
 SECTION (84-9-4)A, HBK, BY, BY-1
 SANGAMON COUNTY
 STATION 792+77.64
 STRUCTURE NUMBER 084-0513

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JOB# 96S2002B
 DATE 10/10/06

LAYOUT 10/10/06
 DRAWN 10/10/06
 REVIEWED JMM 10/12/06

\$FILE# 12/16/2006