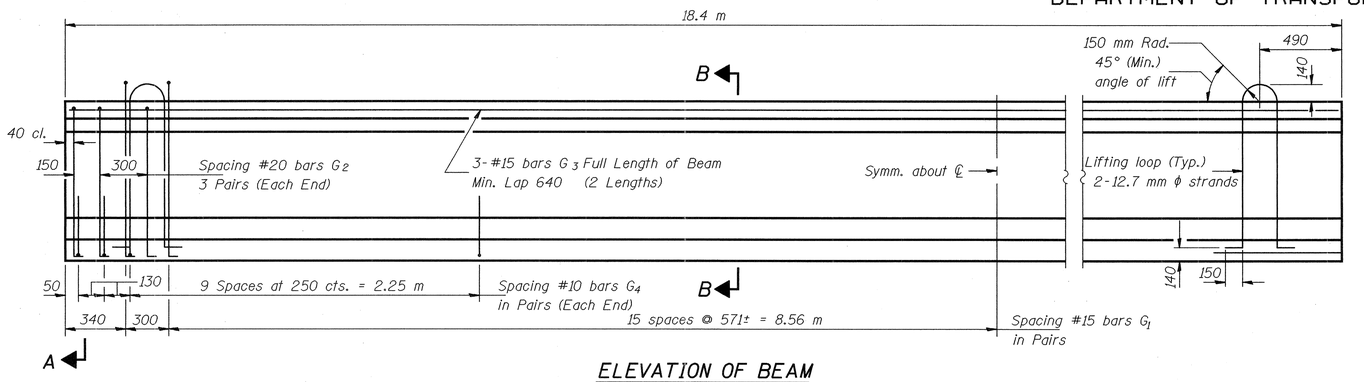
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

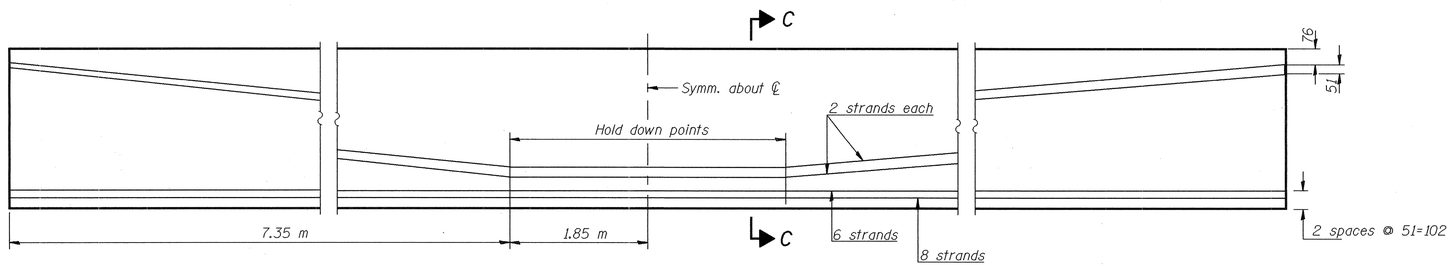
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F. A. P. 614	147 (RS-5,B-2)	MORGAN	198	94
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
12 SHEETS

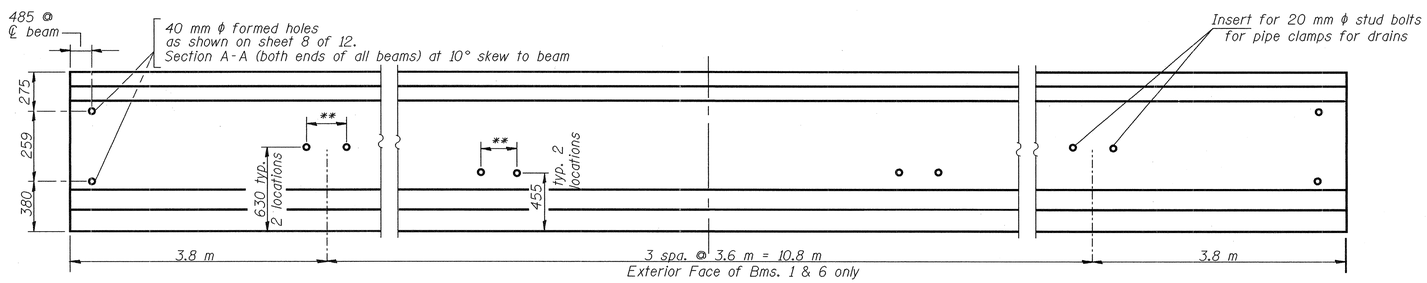
92656



ELEVATION OF BEAM
(Showing Reinforcement & Dimensions)

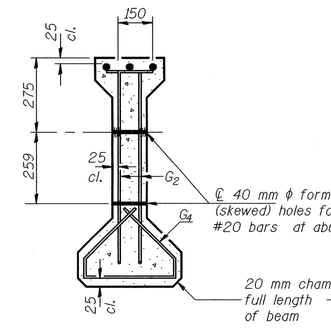


ELEVATION OF BEAM
(Showing Prestressing Steel)

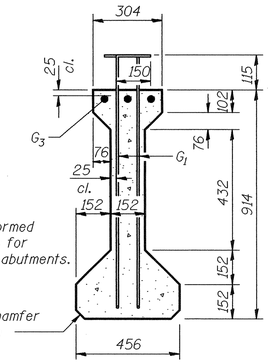


** Dimension as required by pipe clamp

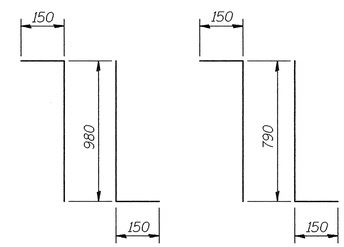
ELEVATION OF BEAM
(Showing Location of Holes and Inserts)



SECTION A-A

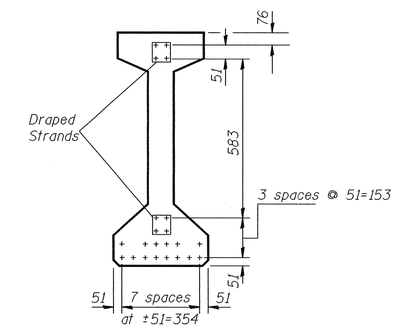


SECTION B-B

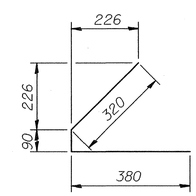


BAR G1

BAR G2



SECTION C-C



BAR G4

* BAR LIST

Bar	No.	Size	Length (m)	Shape
G_1	66	#15	1.28	⅂L
G_2	12	#20	1.09	⅂L
G_3	6	#15	9.52	—
G_4	48	#10	0.79	⊂

* For one beam only.
For information only.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 914 mm	m	110.4

INTERIOR BEAM REACTION TABLE		Abut.
R NON-COMPOSITE DL	(kN)	121
R COMPOSITE DL	(kN)	55
R LL	(kN)	139
R IMP.	(kN)	37
R (Total)	(kN)	353

INTERIOR BEAM MOMENT TABLE		0.5 Span
I	(10^6 mm^4)	20249
I′	(10^6 mm^4)	67730
Sb	(10^3 mm^3)	51867
Sb′	(10^3 mm^3)	94503
St	(10^3 mm^3)	38643
St′	(10^3 mm^3)	343285
non-composite Dead Load	(kN/m)	13.59
M (DL)	(kN-m)	540
composite Dead Load	(kN/m)	6.20
Ms (DL)	(kN-m)	246
M (LL)	(kN-m)	544
M (Imp)	(kN-m)	147

- I and I′ are the moment of inertia and composite moment of inertia of the beam section.
- Sb and Sb′ are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.
- St and St′ are the non-composite and composite section modulus for the top fiber of the prestressed beam.
- M (DL) is the moment due to dead loads on the non-composite prestressed beam.
- Ms (DL) is the moment due to dead loads on the composite section.
- M (LL) 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.

NOTES

All inserts and threaded dowel rods for inserts, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beams shall be included in the contract unit price per meter of "Furnishing and Erecting Precast Prestressed Concrete I-Beams, 914 mm."

Inserts for 20 mm stud bolts are to be single coil, flared loop type for interior I-Beams and single coil, flared loop type for exterior I-Beams

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand (Fu=1860 MPa).

The nominal diameter shall be 12.7 mm and the nominal cross-sectional area shall be 98.71 mm^2.

Non-prestressing steel shall conform to AASHTO designation M-31M, M-42M or M-53M Grade 400.

Lifting loops shall be 2-12.7 mm ϕ strands (Fu=1860 MPa), as shown.

Required release strength, f′ci, shall be 35 MPa.

Reinforcement bars designated (E) shall be epoxy coated.

All dimensions are in millimeters (mm) except as noted.

BEAM DETAILS
IL RTE 78 OVER FORK OF INDIAN CREEK
F.A.P. RTE 614
SECTION 147 (RS-5, B-2)
MORGAN COUNTY
STATION 14+816.75
S.N. 069-0503

DESIGNED JFJ	RANDOLPH & ASSOCIATES, INC.	FILE NUMBER	136.080
CHECKED DDB	911 W. PIONEER PARKWAY, PEORIA, IL 61615-2124 TEL.309-692-0844 FAX.309-692-6058 1-888-821-9221 HTTP://WWW.RANDOLPHINC.COM		
DRAWN HLS	CONSULTING ENGINEERS • LAND SURVEYORS	DATE	Sept. 2001
CHECKED DDB			

PI-4-914 (M) 7-1-94

23 AUG 102 11:32:59 r:\projects\0136\0136-080 il78\fork of indian creek bridge\design\plan set\09-beamdetails.dgn