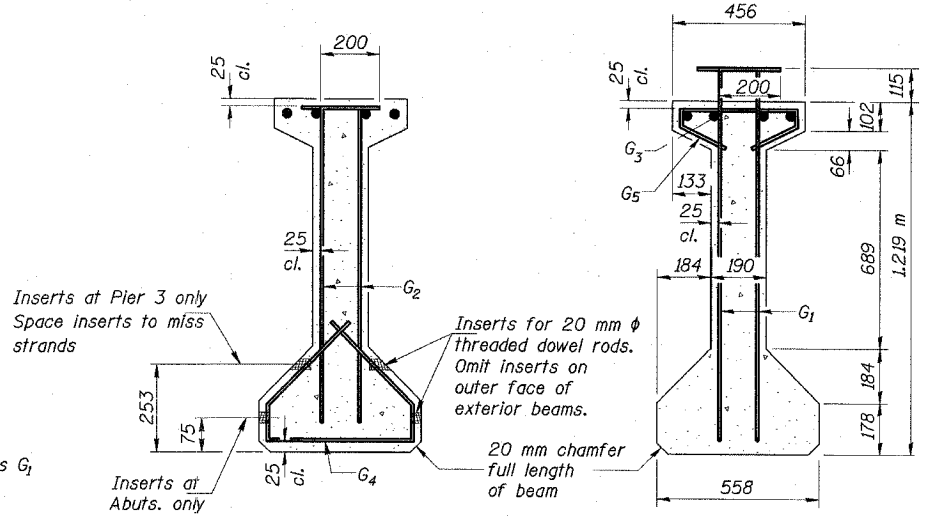
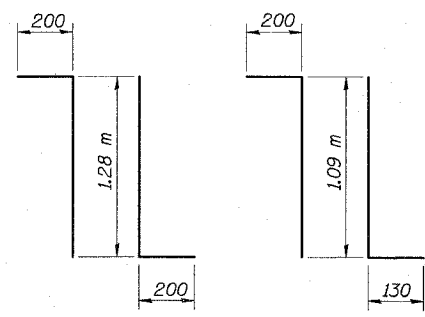


**ELEVATION OF BEAM**  
(Showing Reinforcement & Dimensions)



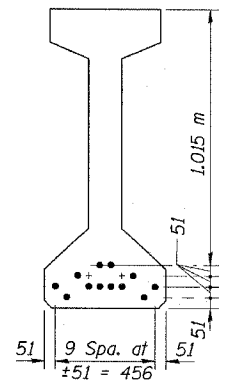
**SECTION A-A**

**SECTION B-B**

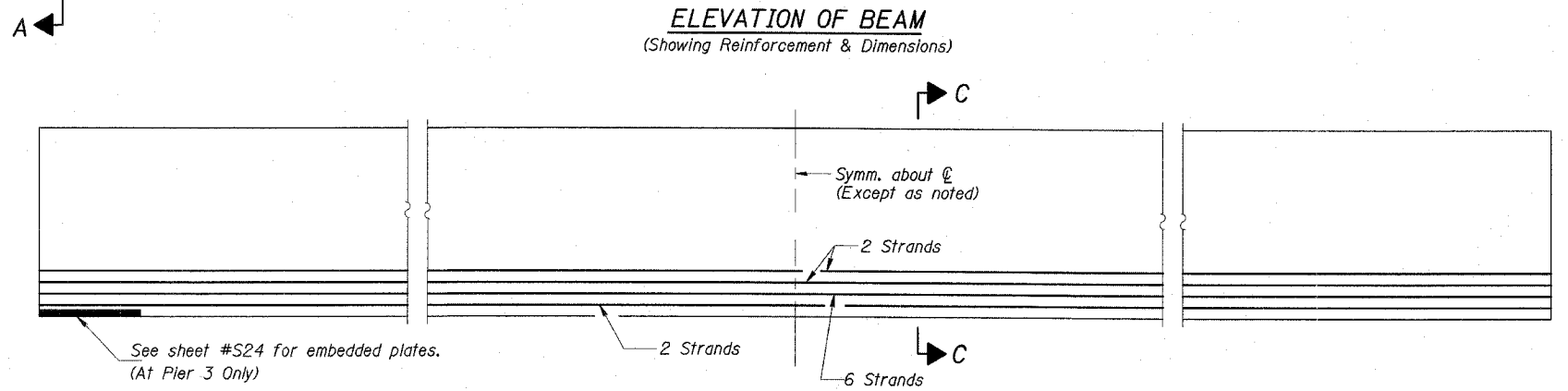


**BAR G1**

**BAR G2**



**SECTION C-C**  
(12-S Strand pattern)



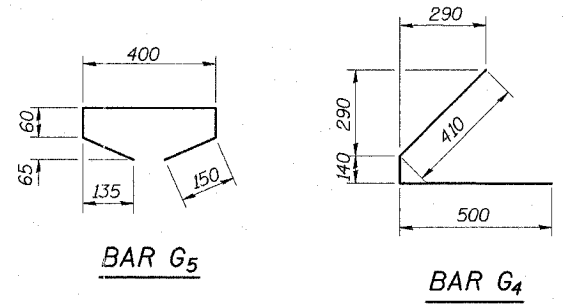
**ELEVATION OF BEAM**  
(Showing Prestressing Steel Beam 12-S with 12 Strands)

**BAR LIST-SPAN 4**

\* Quantities are for one beam only.

Beam	Bar	No.*	Size	Length (m)	Shape
Beams 1-8	G1	58	#15	1.68	7L
	G2	12	#20	1.42	7L
	G3	4	#25	12.490	—
	G4	48	#10	1.05	7L
	G5	42	#10	0.82	7L
Beam 9	G1	58	#15	1.68	7L
	G2	12	#20	1.42	7L
	G3	4	#25	12.490	—
	G4	48	#10	1.05	7L
	G5	42	#10	0.82	7L
Beam 10	G1	58	#15	1.68	7L
	G2	12	#20	1.42	7L
	G3	4	#25	12.560	—
	G4	48	#10	1.05	7L
	G5	42	#10	0.82	7L
Beam 11	G1	58	#15	1.68	7L
	G2	12	#20	1.42	7L
	G3	4	#25	12.690	—
	G4	48	#10	1.05	7L
	G5	43	#10	0.82	7L
Beam 12	G1	58	#15	1.68	7L
	G2	12	#20	1.42	7L
	G3	4	#25	12.870	—
	G4	48	#10	1.05	7L
	G5	43	#10	0.82	7L
Beam 13	G1	62	#15	1.68	7L
	G2	12	#20	1.42	7L
	G3	4	#25	13.110	—
	G4	48	#10	1.05	7L
	G5	44	#10	0.82	7L

BEAM REINFORCEMENT SCHEDULE					
Beam	L (m)	a	b	c	d
1-8	12.585	143	42	24	253
9	12.594	147	42	24	257
10	12.662	181	42	24	291
11	12.789	95	43	25	130
12	12.972	186	43	25	221
13	13.211	156	44	26	116



**BAR G5**

**BAR G4**

**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, 1219 mm."  
 Inserts for 20 mm threaded dowel rods are to be two strut, coil 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<sup>2</sup>.  
 Non-prestressing steel shall conform to AASHTO designation M 31M or M 322M Grade 400.  
 Lifting loops shall be 2-12.7 mm φ strands (Fu=1860 MPa), as shown. Required release strength, f'cl, shall be 35 MPa.  
 Reinforcement bars designated (E) shall be epoxy coated.  
 All dimensions are in millimeters (mm) except as noted.

**BILL OF MATERIAL**

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 1219 mm	m	164.9

REVISIONS	
NAME	DATE

**COLLINS ENGINEERS**  
 123 N. WACKER DR., SUITE 300  
 CHICAGO, IL 60606  
 (312) 704-9300  
 ILLINOIS PROFESSIONAL DESIGN FIRM  
 LICENSE NO. 184-000933

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 F.A.I. 90 (I-90)  
 AT NAGLE AVENUE  
 F.A.U. RTE. 2783 SEC 1314B  
 COOK COUNTY STATION 0+998.813  
 STRUCTURE NO. 016-0708

**BEAM DETAILS-SPAN 4**

DRAWN BY KAC  
 CHECKED BY LDB/DGS  
 DATE: DEC. 2004