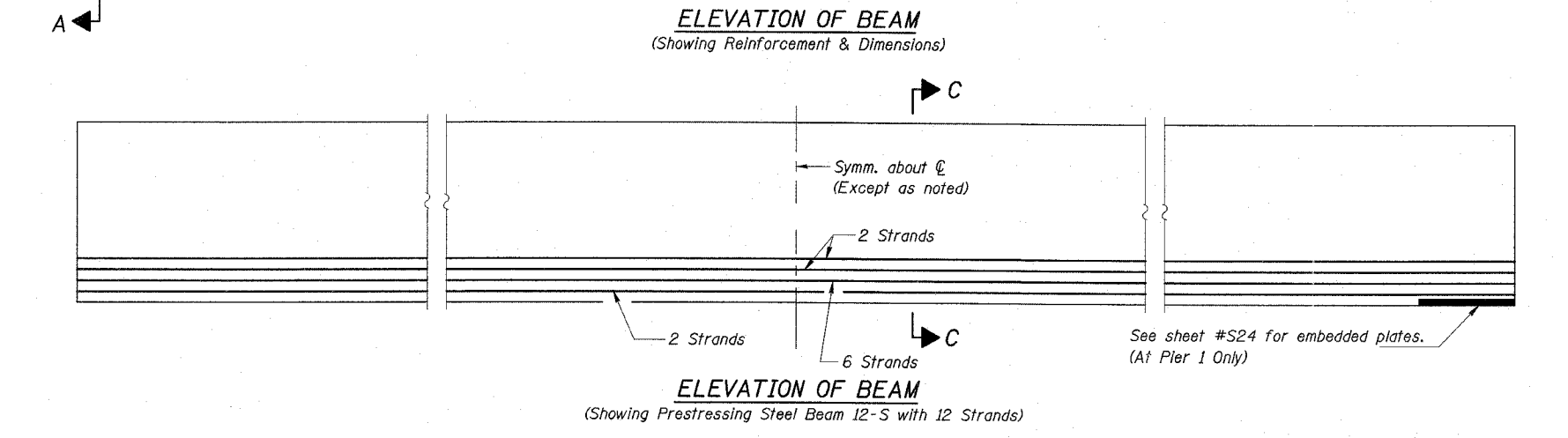
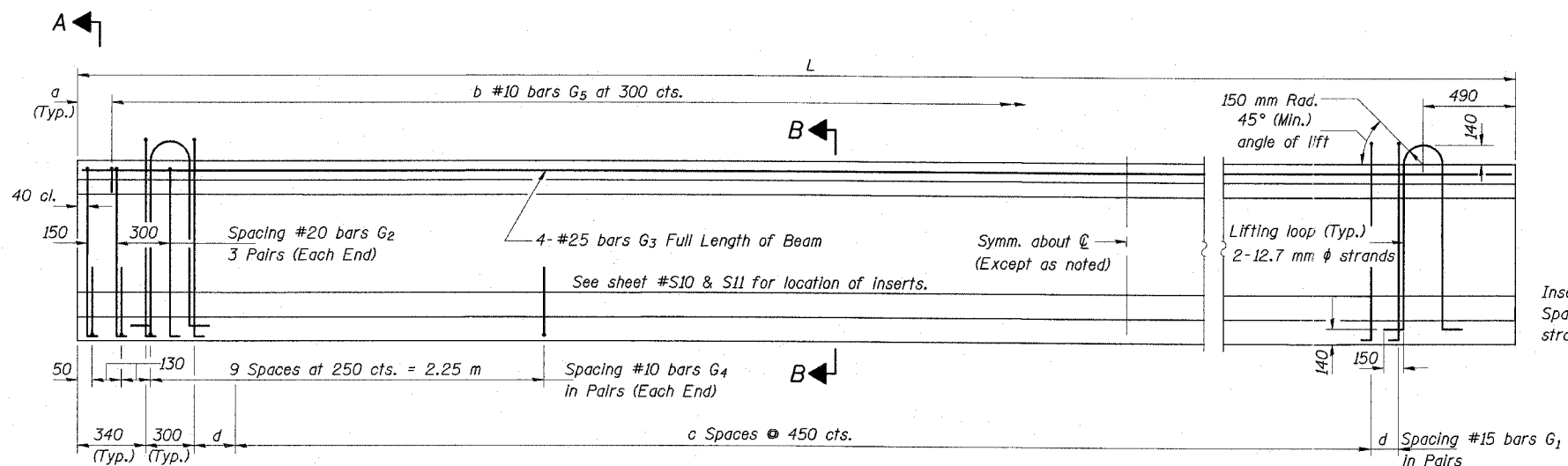


| | | | | | |
|-----------------------|----------|------------------|--------------|-----------|---------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. S21 |
| FAU 2783 | 1314B | COOK | 160 | 99 | 540 SHEETS |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | | |
| CONTRACT 60293 | | | | | |



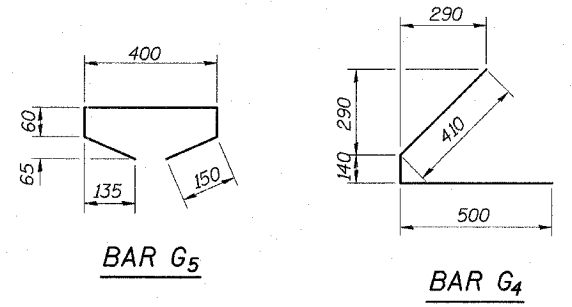
BAR LIST-SPAN 1
* Quantities are for one beam only.

| Beam | Bar | No.* | Size | Length (m) | Shape |
|----------|-------|------|------|------------|-------|
| Beam 1-7 | G_1 | 48 | #15 | 1.68 | 7L |
| | G_2 | 12 | #20 | 1.42 | 7L |
| | G_3 | 4 | #25 | 10.03 | — |
| | G_4 | 48 | #10 | 1.05 | — |
| | G_5 | 34 | #10 | 0.82 | — |
| Beam 8 | G_1 | 48 | #15 | 1.68 | 7L |
| | G_2 | 12 | #20 | 1.42 | 7L |
| | G_3 | 4 | #25 | 10.100 | — |
| | G_4 | 48 | #10 | 1.05 | — |
| | G_5 | 34 | #10 | 0.82 | — |
| Beam 9 | G_1 | 48 | #15 | 1.68 | 7L |
| | G_2 | 12 | #20 | 1.42 | 7L |
| | G_3 | 4 | #25 | 10.250 | — |
| | G_4 | 48 | #10 | 1.05 | — |
| | G_5 | 35 | #10 | 0.82 | — |
| Beam 10 | G_1 | 50 | #15 | 1.68 | 7L |
| | G_2 | 12 | #20 | 1.42 | 7L |
| | G_3 | 4 | #25 | 10.480 | — |
| | G_4 | 48 | #10 | 1.05 | — |
| | G_5 | 36 | #10 | 0.82 | — |
| Beam 11 | G_1 | 50 | #15 | 1.68 | 7L |
| | G_2 | 12 | #20 | 1.42 | 7L |
| | G_3 | 4 | #25 | 10.800 | — |
| | G_4 | 48 | #10 | 1.05 | — |
| | G_5 | 37 | #10 | 0.82 | — |

BEAM REINFORCEMENT SCHEDULE

| Beam | L (m) | a | b | c | d |
|------|--------|-----|----|----|-----|
| 1-7 | 10.128 | 114 | 34 | 19 | 149 |
| 8 | 10.195 | 148 | 34 | 19 | 183 |
| 9 | 10.349 | 75 | 35 | 19 | 260 |
| 10 | 10.584 | 42 | 36 | 20 | 152 |
| 11 | 10.896 | 48 | 37 | 20 | 308 |
| 12 | 11.280 | 90 | 38 | 21 | 275 |
| 13 | 11.728 | 164 | 39 | 22 | 274 |

| Beam | Bar | No.* | Size | Length (m) | Shape |
|---------|-------|------|------|------------|-------|
| Beam 12 | G_1 | 52 | #15 | 1.68 | 7L |
| | G_2 | 12 | #20 | 1.42 | 7L |
| | G_3 | 4 | #25 | 11.180 | — |
| | G_4 | 48 | #10 | 1.05 | — |
| | G_5 | 38 | #10 | 0.82 | — |
| Beam 13 | G_1 | 54 | #15 | 1.68 | 7L |
| | G_2 | 12 | #20 | 1.42 | 7L |
| | G_3 | 4 | #25 | 11.630 | — |
| | G_4 | 48 | #10 | 1.05 | — |
| | G_5 | 39 | #10 | 0.82 | — |



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 ($F_u=1860$ MPa).

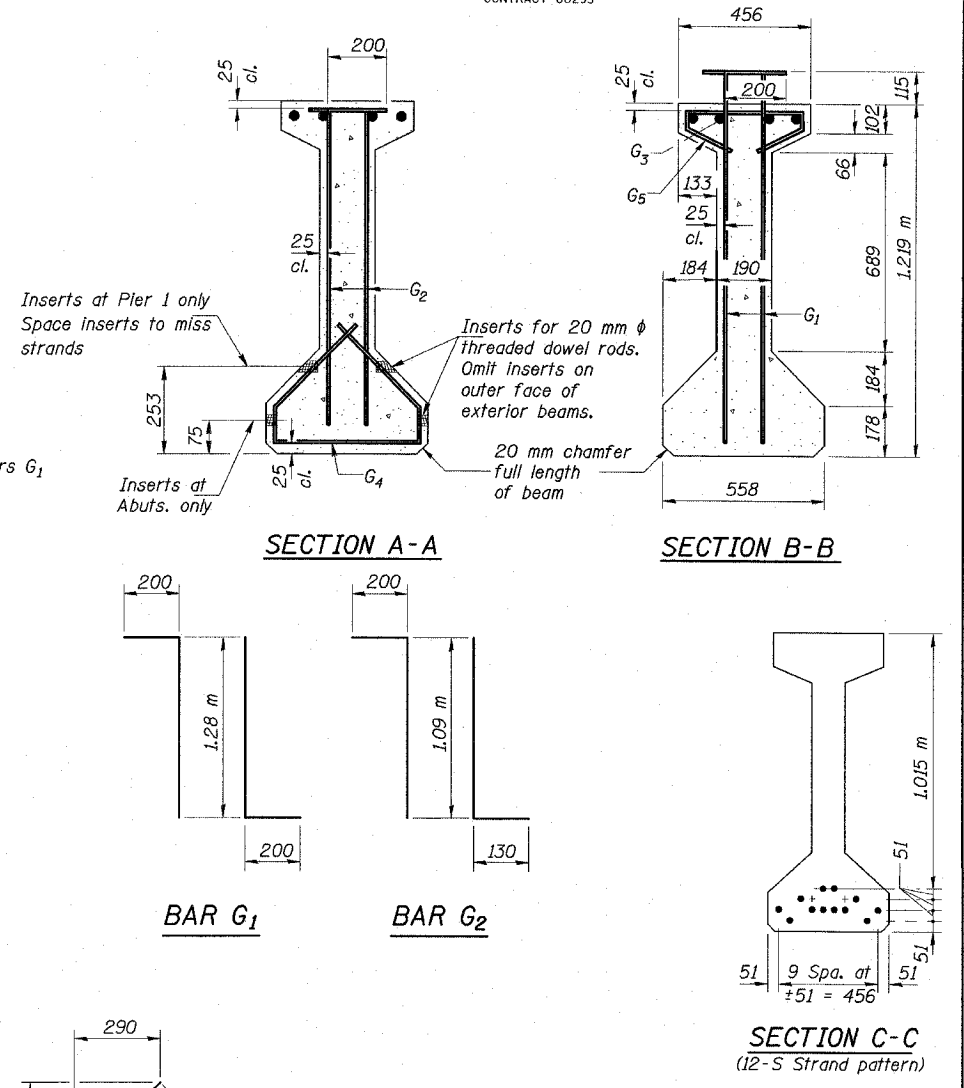
The nominal diameter shall be 12.7 mm and the nominal cross-sectional area shall be 98.71 mm².

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 ($F_u=1860$ 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 | 136.0 |

COLLINS ENGINEERS
123 N. WACKER DR., SUITE 300
CHICAGO, IL 60606
(312) 764-9300
ILLINOIS PROFESSIONAL DESIGN FIRM
LICENSE NO. 184-00993

| REVISIONS | |
|-----------|------|
| NAME | DATE |
| | |
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| | |

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 1

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

27240111