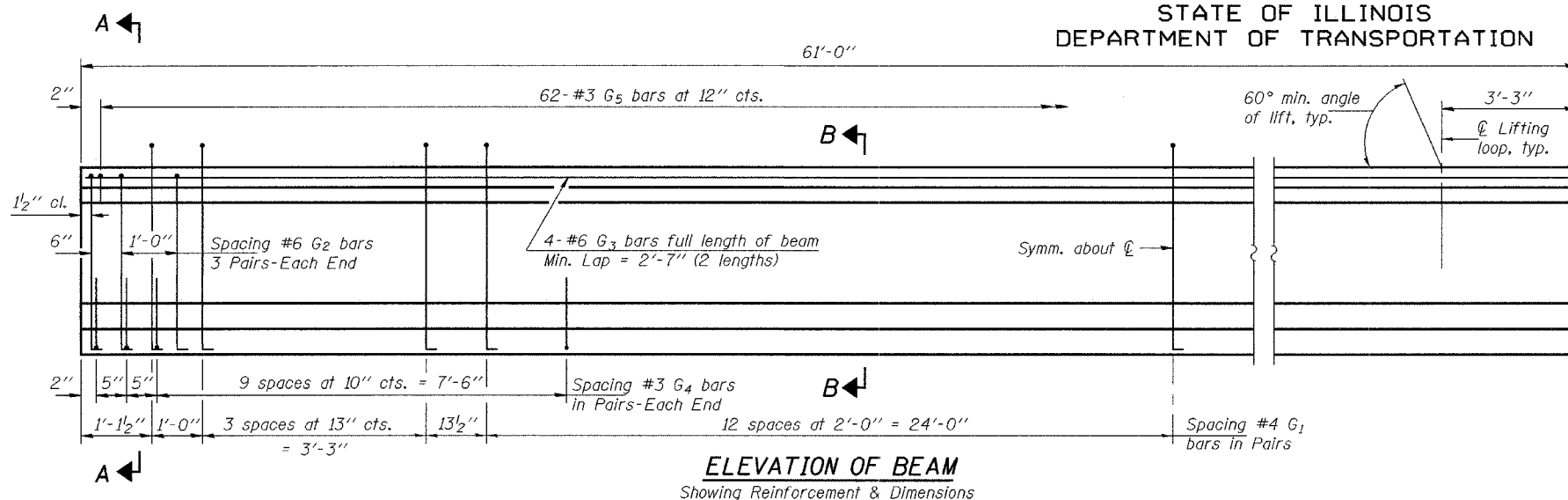


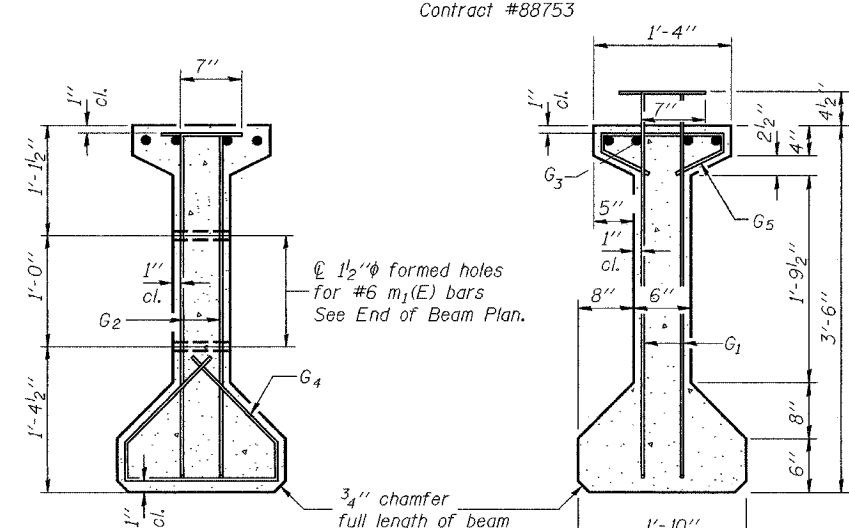
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|----------|------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FAP 315 | 18B-1 | FULTON | 13 | 9 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

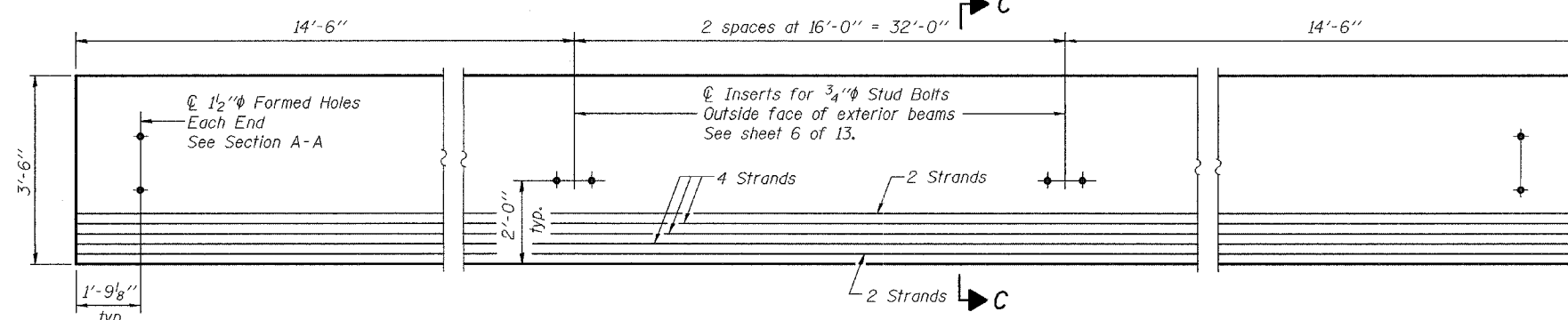
Contract #88753



ELEVATION OF BEAM
Showing Reinforcement & Dimensions



SECTION A-A **SECTION B-B**

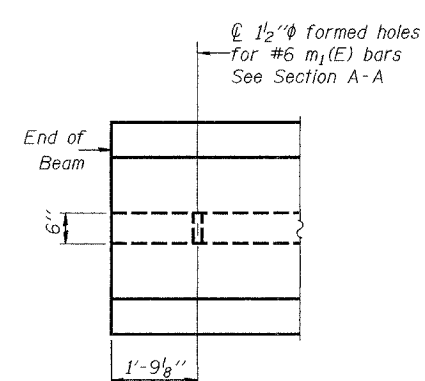


ELEVATION OF BEAM
Showing Prestressing Steel

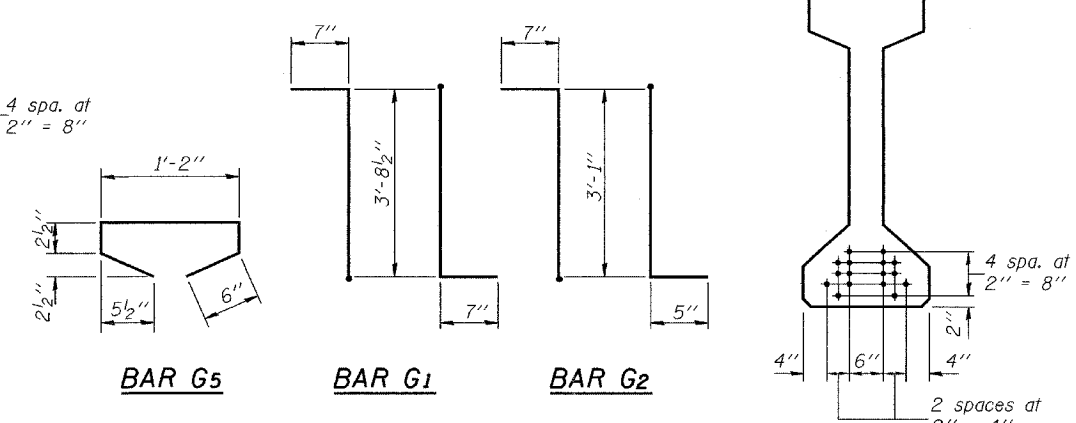
| | 0.5 Span |
|------------------|----------------------------|
| I | (in ⁴) 90955.6 |
| I' | (in ⁴) 272413 |
| S _b | (in ³) 5152.7 |
| S _b ' | (in ³) 8678 |
| S _t | (in ³) 3735.6 |
| S _t ' | (in ³) 25675 |
| Q | (k/') |
| M _Q | (k) 492 |
| s _Q | (k/') |
| M _{sQ} | (k) 210 |
| M _L | (k) 471 |
| M (Imp) | (k) 128 |

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_Q is the moment due to dead loads on the non-composite prestressed beam. It is conservatively calculated at 0.5 of the span.
M_{sQ} is the moment due to dead loads on the composite section.
M_L 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.

| | Abut. |
|-----------------|----------|
| R _Q | (k) 33.1 |
| R _{sQ} | (k) 14.1 |
| R _L | (k) 35.9 |
| Imp. | (k) 9.7 |
| R (Total) | (k) 92.8 |



END OF BEAM PLAN



SECTION C-C

***BAR LIST**

| Bar | No. | Size | Length | Shape |
|----------------|-----|------|------------|-------|
| G ₁ | 35 | #4 | 4'-10 1/2" | 7L |
| G ₂ | 12 | #6 | 4'-1" | 7L |
| G ₃ | 8 | #6 | 3'-8" | — |
| G ₄ | 48 | #3 | 3'-3 1/2" | — |
| G ₅ | 62 | #3 | 2'-7" | — |

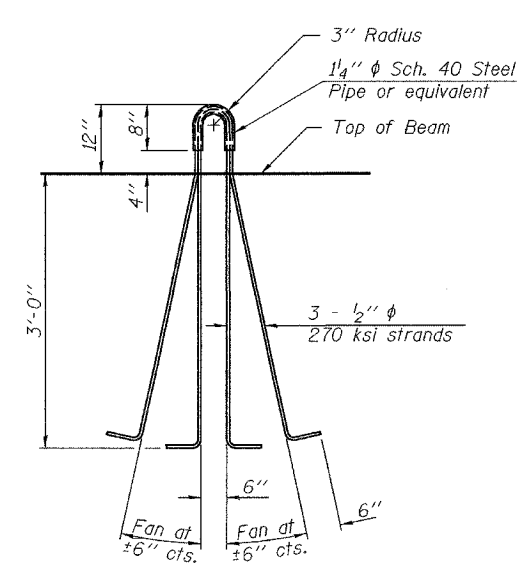
*For one beam only.

BILL OF MATERIAL

| Item | Unit | Total |
|---|------|-------|
| Furnishing and Erecting Precast Prestressed Concrete I-Beams, 42" | Foot | 366 |

NOTES

Inserts for 3/4" 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, 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.
Required release strength, f'ci, shall be 5,000 psi.
Reinforcement bars designated (E) shall be epoxy coated.



LIFTING LOOP DETAIL

BEAM DETAILS
F.A.P. RT. 315 SEC. 18B-1
FULTON COUNTY
STATION 84+17.00
STRUCTURE NO. 029-0060

| | |
|----------|-----------------|
| DESIGNED | Stephen M. Ryan |
| CHECKED | Sital J. Bhakta |
| DRAWN | R. Doty |
| CHECKED | SMR/SJB |

| | |
|----------|--------------------|
| APPROVED | April 11, 2005 |
| EXAMINED | Thomas J. Domagala |
| PASSED | Ralph E. Anderson |