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<th>STRUCTURE</th>
<th>DESIGNER</th>
<th>CODE</th>
<th>DESIGNER TYPE</th>
<th>DEPRESSED STRAND PATTERN</th>
<th>CONCRETE</th>
<th>OPTIONAL DESIGN</th>
<th>LOAD RATING</th>
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**Required Design**

- Designed according to AASHTO LRFD Bridge Design Specifications.
- Compliant with Type Tx40 Girders
- Distributed according to Type Tx46 Bridge Design Specifications
- Designed according to AASHTO LRFD Bridge Design Specifications
- Distributed according to Type Tx46 Bridge Design Specifications

**Fabrication Notes**

- Provide Grade 60 reinforcing steel bars.
- Use non-rotationally symmetric strands for girders greater than 120 feet.
- Provide full-length debonded strands for girders greater than 120 feet.

**Design Notes**

- Optional designs must meet the following criteria.
- Provided in the "A" position and working outward until the required number of strands is reached.
- All strands in the "A" position must be bonded, maintaining the 2" spacing on all girders.
- The upper two strands are in the position shown in the table.

**Non-Standard Strand Patterns**

- Based on the following allowable stresses (ksi):
  - Compression: 0.65 f_c'
  - Tension: 0.24 \sqrt{f_p}

- Optional designs must likewise conform.

**Part of full AASHTO Manual for Bridge Evaluation.**

- Optional designs for girders 120 feet or longer must have full-length debonded strands for girders greater than 120 feet.
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### DESIGN GIRDERS

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<th>LOCATION TYPE</th>
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### PRESTRESSED STRANDS

- **Type Tx54 Girders:**
  - 20.76ksi (ksi) Span at 2.5%
  - 24.5ksi Span at 2.5%
  - 28.5ksi Span at 2.5%
  - 32.5ksi Span at 2.5%

- **Type Tx62 Girders:**
  - 20.5ksi Span at 2.5%
  - 24.5ksi Span at 2.5%
  - 28.5ksi Span at 2.5%

### Optional Design

- **Option A:**
  - Tension = 0.24

**Note:**
- Compressive stress limit is 0.65 psi.
- Optional designs must be used in accordance with the standards.

---

**References:**
- Texas Department of Transportation
- Bridge Division
- PRESTRESSED CONCRETE I-GIRDER STANDARD DESIGNS
- 38" ROADWAY

**Sheet:** 2 of 2

**Design:**
- IGSD-38

**Date:**
- SHEET NO.
- COUNTY
- HIGHWAY

**Page:**
- 12 Spa at 2'

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**Specialty:**
- Prestressed Concrete Failure Mode
- Soil-Structure Interaction
- Marine Structures
- Special Bridges

**Tools:**
- Large-Scale Model Testing
- Finite Element Analysis
- Parametric Studies