PRESTRESSED CONCRETE BENT CAPS

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Conventionally Reinforced, Precast Bent Caps

- Better concrete quality
- Faster construction
Prestressed, Precast Bent Caps

- Same advantages as conventionally reinforced, precast caps
- Prestressing provides enhanced crack control
1. LP 1604, Bexar Co
2. FM 973, Travis Co
3. Pecos River Bridge, Crane Co
4. Fischer Store Road, Hays Co
LP 1604 Bexar County, San Antonio, TX

- 36 Bents Total (18 NB, 18 SB)
- Identical Length and Column Spacing
FM 973 over Colorado River, Travis Co

- 8 Bents Total (4 NB, 4 SB)
- Accelerated Construction Timeline
Pecos River Bridge

- Remote site location:
  - No concrete batch plants nearby
  - Precast a number of different concrete members, including:
    - Prestressed Abutments and Precast Approach Slabs
Fischer Store Road

- Original Bridge washed out from major flood event
Fischer Store Road

- Emergency Replacement Project w/ Short Construction Timeline
Fischer Store Road

- Demolition/New Construction complete in approximately 80 days
Prestressed, Precast Bent Cap Standard

- Released April 2017
- Intended as an alternate for standard bridge interior bent standards
- Include standard in plan sets using standard designed interior bents supported on round columns
- Applies to bridges with following beam types:
  - TxGirders
  - X-Beams
  - Box Beams
  - Decked Slab Beams
  - Slab Beams
- No adjustments to quantities required
- No Special Specifications
Ongoing Research: 0-6863

- Full scale tests analyzing performance at varying service and strength load levels
Moving Forward

- Implementation of research project 0-6863 findings

- Update Standards
  - Refinement of reinforcing details
  - Addition of voids to reduce shipping weight
  - Revised connection details for easier constructability

- Increase awareness and use of prestressed, precast standards across the state
Acknowledgements

- **Fabricator:**
  - Bexar Concrete Works

- **Contractor:**
  - Texas Sterling Construction Co. – LP 1604
  - Lane Construction – FM 973
  - Relmco Inc.- Pecos River Bridge
  - Dan Williams Co – Fischer Store Rd

- **Research Team**
  - Texas A&M and TTI
Questions?

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