Accelerated Bridge Construction

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Outline

• What is Accelerated Bridge Construction?
• Steel Bridge Benefits
• Accelerated Construction Using
  ❑ Bolt-A-Bin Embankment
  ❑ Geotextile Reinforced Soil-Integrated Bridge System (GRS-IBS)
• Backfill Requirements
• Ease Of Install
What is ABC?

• ABC is a paradigm shift in the project planning and procurement approach where the need to minimize mobility impacts which occur due to onsite construction activities are elevated to a higher priority.

• Intrinsic benefits of the ABC approach include improvements in:
  - Safety
  - Quality
  - Durability
  - Social costs and
  - Environmental impacts
Accelerated Bridge Construction

• Project Planning
• Geotechnical Solutions
  • Rapid Embankment Construction
• Structural Solutions
  • Prefabricated Elements & Systems
  • Structural Placement Methods
Section View of GRS IBS

- **Beam Seat**
  (Supported directly on bearing bed)

- **Jointless**
  (Continuous pavement)

- **Integrated Approach**
  (Geotextile wrapped layers at beams to form smooth transitions)

- **Facing Elements**
  (Frictionally connected top 3 courses with a rebar and grout)

- **Bearing Bed Reinforcement**
  (Load shedding layers spaced < 6 inches)

- **Scour Protection (Rip Rap)**
  (If crossing a water way)

- **GRS Abutment**
  (Reinforcement spacing < 12 inches)

- **Reinforced Soil Foundation**
  (Encapsulated with geotextile)
GRS IBS – Cross Section

Beam Set
(Supported Directly on Bearing Bed)

Jointless
(Continuous Pavement)

Integrated Approach
(Geotextile Wrapped Layers at Beams to Form Smooth Transition)

Facing Elements
(Frictionally Connected – Top Three Courses Pinned and Grouted)

Scour Protection (Rip Rap)
(If Crossing a Water Way)

Bearing Bed Reinforcement
(Load Shedding Layers Spaced at ≤ 6 in.)

GRS Abutment
(Reinforcement Spacing ≤ 12 in.)

Reinforced Soil Foundation
(Encapsulated with Geotextile)
Bolt-A-Bin
Bolt-A-Bin
Bolt-A-Bin
Overview
Accelerated Bridge Complete Install

- Explain details
- Give an example
- Conduct exercises to reinforce learning
Summary

• Accelerated Low Volume Bridge Construction is attainable utilizing county forces

• Three main components:
  – Weathering Steel Bridge
  – Precast Sill or Direct Placement on Bearing Bed
  – Bolt-A-Bin or GRS-IBS Abutment System

All components can be installed by county forces
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Questions?

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