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# **Needs Unmet by Current and Emerging Technologies/Techniques**

A. Wimsatt and Tom Scullion  
Texas Transportation Institute  
College Station, TX

**PRELIMINARY FINDINGS – SUBJECT TO UPDATES**

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## **PAVEMENT NDT NEEDS**

- **Priority 1 - Interlayer bonding (Design, Construction, and Performance Monitoring): Experimental Research**
- **Priority 2 - Plant Quality Control (Construction); Experimental Research**
- **Priority 2 - Layer Material Properties (Design, Construction, and Performance Monitoring); Experimental Research**
- **Priority 2 - Identifying Problematic Soils (Design and Construction): Unfulfilled Need**
- **Priority 2 - Early Detection of Concrete Deterioration Mechanisms (Design and Performance Monitoring); Experimental Research**

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## **BRIDGE NDT NEEDS**

- **Priority 1 - Foundation Investigation Tools Where Concerns Exist (Design, Construction, and Performance Monitoring); Unfulfilled**
- **Priority 1 - Automated methods of accurately profiling bridges (Performance Monitoring and Construction); Unfulfilled**
- **Priority 1 - Identify deterioration of bridge decks, including the cause of deterioration (Design and Performance Monitoring): Experimental Research**
- **Priority 2 - Scour around Bridge Support systems (Design and Performance Monitoring); Experimental Research**
- **Priority 2 - Early detection of concrete deterioration mechanisms (Design and Performance Monitoring); Experimental Research**
- **Priority 2 - Reinforcing steel corrosion (Design and Performance Monitoring); Experimental Research**
- **Priority 3 - Corrosion of steel elements for steel bridges (Design and Performance Monitoring); Experimental Research**

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## **EARTHWORKS NDT NEEDS**

- Priority 2 - Earthwork performance monitoring (Performance Monitoring); Experimental Research**

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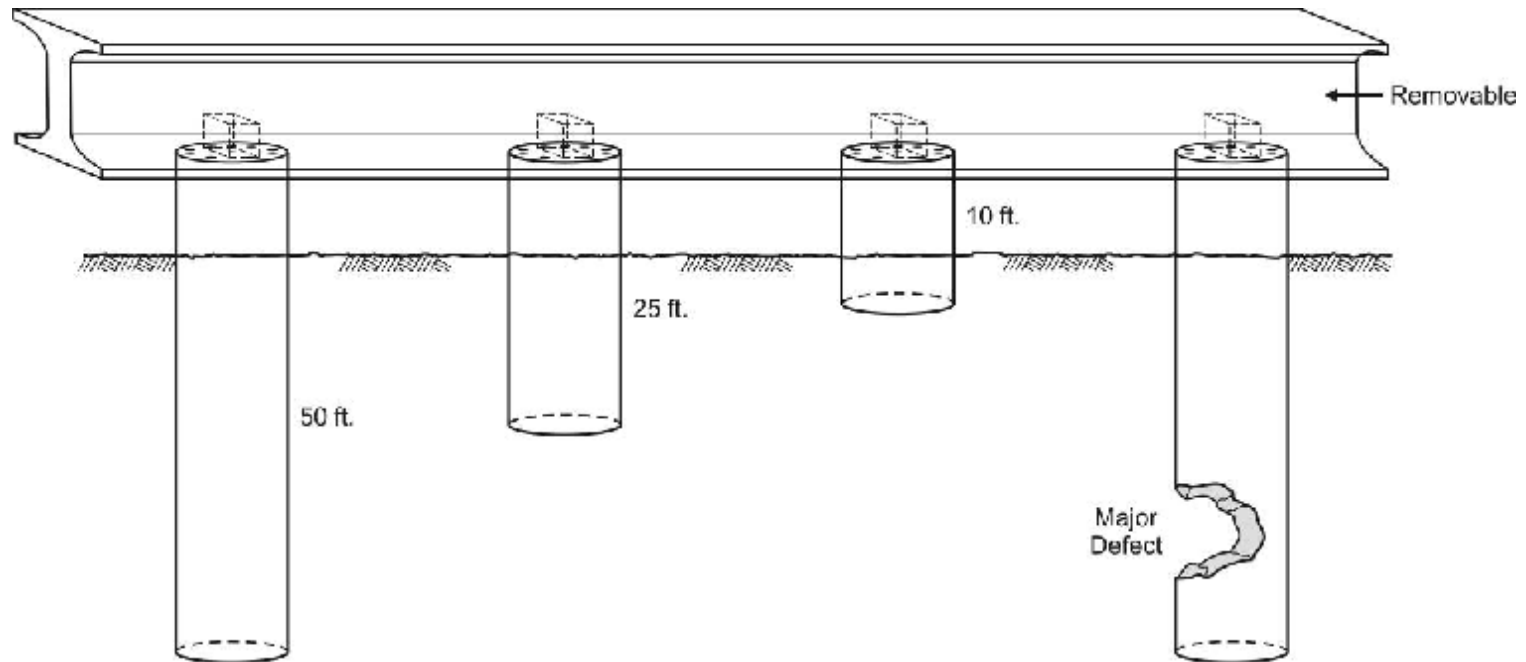
## **TUNNELS NDT NEEDS**

- **Priority 1 - Mapping voids, bonding, and moisture behind tunnel linings (Design and Performance Monitoring); Unfulfilled (?).**
- **Priority 3 - Deterioration of tunnel linings (Design and Performance Monitoring); Experimental Research**

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## **RECOMMENDATION FOR A NATIONAL CALIBRATION AND VERIFICATION CENTER**

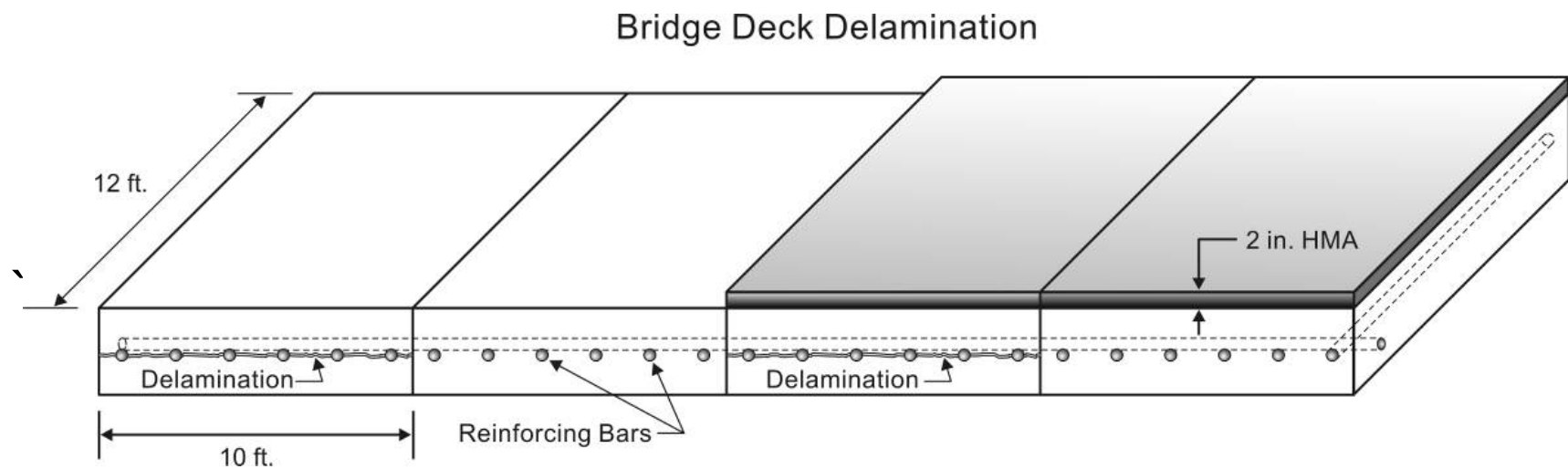
- Applies to Experimental and Unfulfilled Needs Projects**
- Used to develop NDT technologies/techniques**
- Certify that NDT actually works**
- Reduce the chances of immediate rejection of particular NDT technologies/techniques (GPR example)**
- The FHWA NDE Center is certainly a candidate**
- Florida DOT is establishing a site; TTI has sites for certain NDT established because of the need**



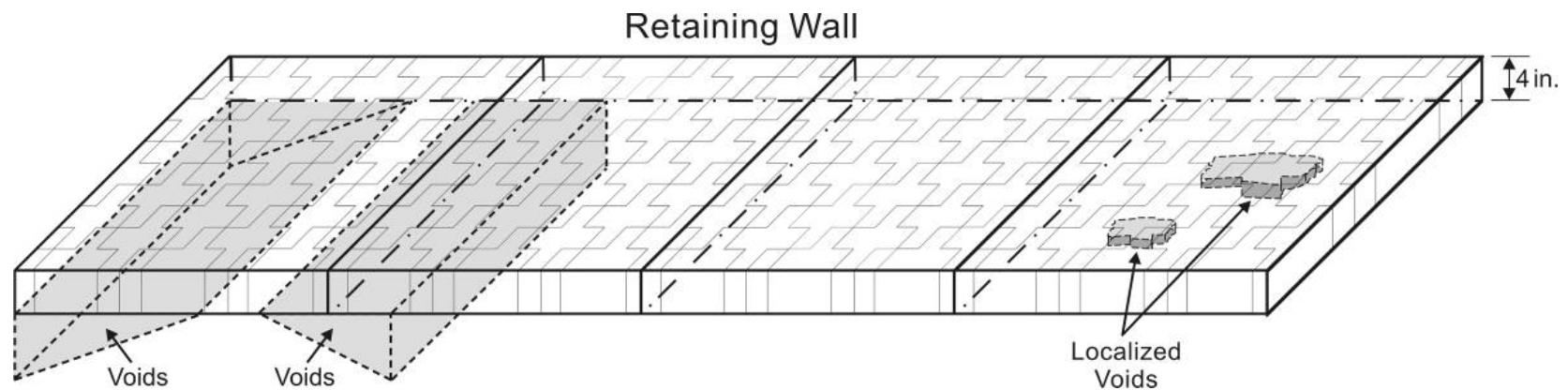
One set of foundations in sand  
Another set in clay

Unknown Foundation Conceptual Example

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