



Experimental Features



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Composite Arch Bridge

Composite Arch Bridge (CAB) is an experimental feature constructed with fiber reinforced polymer ribbings to form an arch. This design creates a lightweight, easy to install bridge system with good waterway characteristics and reduced labor time.

After four years of study, the arches have shown very minor expansion and contraction that is well within the ability of the arches to redistribute their loads. Minor bowing has occurred on the headwalls due to the settling of materials. Overall, the CAB system is performing well.



Randolph Park and Ride Pervious Asphalt Study

Impervious areas increase stormwater runoff and decreased water quality. The Randolph Park and Ride has been converted from porous concrete to pervious asphalt, a material that is expected to survive Vermont's harsh climate.

Constructed in 2018, the park and ride will be tested for infiltration rates, using a constant head test, over the course of its service life. The average infiltration rate at completion, and gain at 2 months, were found to be significantly higher than any potential rainfall event in Vermont, at 383 and 314 in/hr (current min 110 and max 950 in/hr)



Pavement Markings

Pavement markings are a critical safety feature for local roads and interstates. The VTrans Research Section is currently studying the durability, constructability and retroreflective capabilities of pavement marking tapes on US-302 in Berlin and liquid paints on I-89 between Brookfield and Montpelier.

The studies incorporates different tape and liquid pavement markings and will report on the durability and retroreflectivity of tapes and liquids over their service life. Data from these projects has been shared with the Pavement Marking Committee and is being used to inform pavement markings moving forward.



Ongoing Experimental Feature Projects

Projects in the process of being finished, with draft reports and ongoing efforts to close projects (some reports posted: [VTrans.Vermont.gov/docs/completed](https://www.vermont.gov/docs/completed))

- Pavement Marking Tape Study
- Randolph Park & Ride Porous Asphalt Study
- Liquid Pavement Marking Study
- Assessment of GPR to Verify Concrete Elements and Backfill Void Conditions
- Fiber Reinforced Polymer (FRP) Strips
- HAWK Traffic System
- Jahn Permeable Mortar System
- Composite Arch Bridge (Bridge in a Backpack)
- SuperSlab
- Sterling Lloyd Eliminator Waterproofing Bridge Membrane System
- Poly-Carb Flexogrid Bridge Deck Overlay System
- Bridge Preservation BDM Waterproofing Membrane System