



# Route 28 Bridge Replacement

**Location:** Raquette Lake, New York

**Application:** Lightweight fill

**Market:** Infrastructure

**Volume:** 6,000 cubic yards

**Scope Completion:** August 2025



## Overview

A historic bridge through the Adirondack Park near Raquette Lake needed a 12 foot grade change over a sensitive marshland. Foamed glass aggregate delivered a lightweight solution that protected the nearby landscape and eliminated the need for driving piles.

## Design Challenges

The Route 28 Bridge in Raquette Lake, New York presented a complex engineering challenge at the intersection of structural need and environmental sensitivity. Situated over soft, settlement-prone marshy soils, the bridge required a 12 foot grade elevation to meet new design specifications. Traditional approaches faced critical obstacles:

- Soil instability: Conventional fill materials would add excessive weight to already weak, compressible marshy soils, risking significant long-term settlement.
- Environmental constraints: The surrounding wetlands were highly sensitive to disturbance, requiring minimal impact to the delicate ecosystem.
- Cost pressures: Deep foundation solutions using steel piles would have been prohibitively expensive for the project scope.

The design team needed a solution that could achieve the required elevation without overloading the soft subgrade or damaging the protected wetland environment.



Placement and compaction of foamed glass aggregate

## Glavel as a Solution

Foamed glass aggregate was the optimal material to balance geotechnical performance and environmental protection. With a bulk density 90% lighter than conventional soil fill, foamed glass aggregate allowed the project team to raise the grade to the specified elevation while adding minimal additional load on the underlying marsh soils.

The lightweight properties of foamed glass aggregate delivered multiple advantages:

- Reduced the risk of settlement and soil failure beneath the raised grade.
- Removed the need for expensive deep foundation elements like steel piles.
- Minimized disturbance to the sensitive wetland ecosystem during construction.