Project

Collaborative approach finds practical way to extend design life of 100-year-old wall

30 years

maximum extension of bridge's design life

Summary

- The Maine Department of Transportation (MaineDOT) saw signs that the overall condition and stability of a 100-year-old retaining wall was deteriorating. The dry-laid, granite block wall supports U.S. Route 1 in Camden, a critical transportation corridor, so the wall's condition raised concerns for the safety of the traveling public.-
- Because MaineDOT had not planned for a complete replacement project, it needed a practical, easy-to-construct, and cost-effective rehabilitation solution to extend the life of the wall by at least 20 years.-
- Haley & Aldrich was engaged because MaineDOT — a longtime partner — knew we would embrace the collaborative approach needed to meet the project's goals. As the geo-structural consultant on the project, we evaluated the condition of the wall, determined the likely causes of lateral wall deformation and ground surface settlement above the wall, and developed several conceptual rehabilitation alternatives.-
- Alongside MaineDOT, we evaluated each alternative and determined which one would meet the project goals: removing and resetting granite blocks along the entire upper length of the wall, building a cast-in-place concrete buttress in front of the wall, and improving surface drainage and sidewalk conditions.-
- Our team then characterized the subsurface conditions and conducted the analyses needed to determine the design requirements. The final design stabilized the most critical portions of the wall, met the minimum design life

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requirements, and minimized impacts to the traveling public and the environment.-

- The team's collaborative approach to selecting and designing a practical rehabilitation solution made it possible to extend the design life of this critical piece of infrastructure, allowing MaineDOT time to program a full wall replacement in future capital plans. The final buttress solution will protect public safety along this critical transportation corridor for years to come.-

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