wheel rut repair presents affordable solution to extend concrete life

Rut Repair Techniques are Timely and Effective for I-80 in California's Sierra Nevada Mountains

Caltrans Issues Emergency Contracts to Repair Pavement After Heavy Tire Chain Use and Record Snowfall

TO ADDRESS THE WHEEL RUTS, CALTRANS ISSUED EMERGENCY CONTRACTS to repair the pavement before the 2023/2024 winter season. Because the highway was deemed structurally sound, wheel rut repair techniques presented the best option to repair the roadway quickly while avoiding costly future repairs. Wheel rut repair is an effective, less disruptive and more cost-effective solution to extend the life of a concrete pavement. Five contracts totaling $69.2 million were issued to address more than 160 miles of pavement. The ruts varied in size from 1.5 to 2 feet wide and 1 to 3 inches deep. Work began in September 2023 and resumed in spring 2024. The contracts included wheel rut repair, installation of a high strength inlay and slab replacement.

Q&D Construction was awarded one of the five contracts. Under the $15 million contract, the company performed 34 miles of wheel rut repair from the I-80/State Highway 267 interchange in Truckee, California to the state border with Nevada. To conduct the work, a 3.5-foot-wide diamond grinding head cut the wheel rut with an edge depth approximately ¾ inch. The ruts were shot blasted, providing proper surface preparation to adhere to the backfill material. Then, a high strength backfill material was placed in the wheel rut. The material was field batched by volumetric trucks and dispersed from the trucks into the ruts. A modified skidsteer with a screed attachment was then utilized to strike and smooth the surface. Q&D Construction performed a light profile grind as a final step to ensure smoothness, followed by joint resealing.

Wheel path rutting has been an issue for decades in the higher elevations where heavy snowfall and subsequent tire chain mandates are in effect. Roadway owners and designers have long sought after fast, cost effective and longer lasting repair methods and materials. In recent years, the concrete industry has developed several durable, high strength cementitious products that are well suited for this task with a lower carbon footprint than tradition cements and mortars. To learn more about these products and procedures visit www.igga.net.

» PROJECT TEAM

- Owner: Caltrans
- Grinding Contractor: Q&D Construction