



Helical Foundation Solutions Designs & Specifies a Helical Pile Foundation for Transportation Band on Jales Dam in Zacatecas, Mexico

September 2022



Helical Foundation Solutions

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| Project Name & Location: | Foundation Design for Transportation Band on Jales Dam , Zacatecas, Mexico |
| Project Date: | September 2022 |
| Project Type: | Industrial - New Construction |
| Helical Pile Installation Contractor: | Soilsolution, SAPI de CV |
| Structural Engineers: | M3 Engineering & Technology |
| General Contractor: | Capstone |
| Helical Piles Specifications: | Combo Helical Piles, Round Shafts with (3) helices configuration - Compression Load 440 kN - Tension Load 530 kN |
| Soils & Embedment Depth: | Soil conditions consisted of loose silty sand and medium dense silty sand. Embedment depth (14) meters |
| Project Timeline: | (3) Days |
| Helical Pile Manufacturer: | Helical Anchors, Inc. - Minneapolis, MN |

Key Benefits:

- **Bearing capacity and settlement control:** Traditional piles require to be embedded in a resistant stratum to provide settlement control. For this project the geotechnical exploration did not find it until the maximum exploration depth of (30) meters. Helical piles provide enough capacity at (14) meters.
- **Installation time:** Traditional pile foundation required two months for construction. Helical piles were installed in three days which expedited the overall construction schedule.
- **Engineering and Design support,** A new efficient foundation solution was proposed and adapted to the design specifications. During the installation of the helical piles, the estimated torque was not reached, so the design was immediately optimized.
- **Field support:** Our design and installation was executed under the support, safety and quality standards required by *Helical Foundation Solutions*



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