








CASE STUDY

PIPE JACKING | TUNNEL BORING



-  **Project Name:**
Oncor Fairground Trenchless Rail Crossing
-  **Prime/Sub Contractors:**
Larrett, Inc. - Kaufman, TX
-  **Location:**
Midland, TX
-  **Ground Conditions:**
Dense sand and stiff to hard clay with varying amounts of gravel and cobbles.

-  **Akkerman Equipment:**
WM48s-D TBM System, 5200 Pipejacking System, Laser Guidance, 2325B-D Bentonite Lubrication, 524 Haul Unit
-  **Pipe:**
48-in Steel Casing
-  **Total Length/Longest:**
511-LF

PROJECT OVERVIEW

Due to the hard geology and tunnel distance, Larrett Inc. used an Akkerman pipejacking system to install this 511-LF, 48-in transmission line under a set of rail tracks. Fitted with a transitional carbide bullet-tipped cutterhead to excavate the dense sands and hard clay, Larrett operators were able to maintain line and grade accuracy with the steerable TBM and laser guidance system.

THE CHALLENGES

- Project required trenchless installation of a 48-in. steel casing under active rail tracks
- Subsurface conditions included dense sand and stiff to hard clay with varying amounts of gravel and cobbles
- Maintaining precise line and grade over a 511-LF tunnel length was critical due to rail infrastructure overhead
- Needed a system capable of withstanding high jacking forces and abrasive geology

THE SOLUTION

- Larrett, Inc. selected the Akkerman WM48s-D TBM System paired with the 5200 Pipejacking System for optimal performance in mixed, challenging soils
- Utilized a transitional carbide bullet-tipped cutterhead to handle variable material composition and reduce wear
- Employed laser guidance to maintain alignment and a 2325B-D bentonite lubrication system to reduce friction and jacking force
- The 524 Haul Unit supported efficient spoil removal, enabling consistent progress across the full 511-LF alignment

OUTCOME

- Successfully installed 511-LF of 48-in. steel casing beneath active rail lines without disrupting rail operations
- Maintained line and grade accuracy throughout the entire alignment using laser-guided TBM technology
- Overcame challenging mixed ground conditions with consistent progress and minimal delays
- Demonstrated the strength and precision of the Akkerman WM48s-D system in a high-stakes, rail infrastructure setting
- Delivered a safe, trenchless solution that met both project specifications and owner expectations

