

Trenchless Methods for Gas Service and Mainline Pipe Rehab and New Install

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TT Technologies, Inc.**

Trenchless Rehabilitation

Split & Pull Pneumatic System



Trenchless Rehabilitation

Split & Pull Pneumatic System



Trenchless Rehabilitation

Pull & Split Winching System

Upgraded Systems with more Power for

- longer runs
- tougher soils
- larger service diameters
- 12 ton (24,000 lbs.) pull back or more
- Constant Tension Winch (twin capstans)

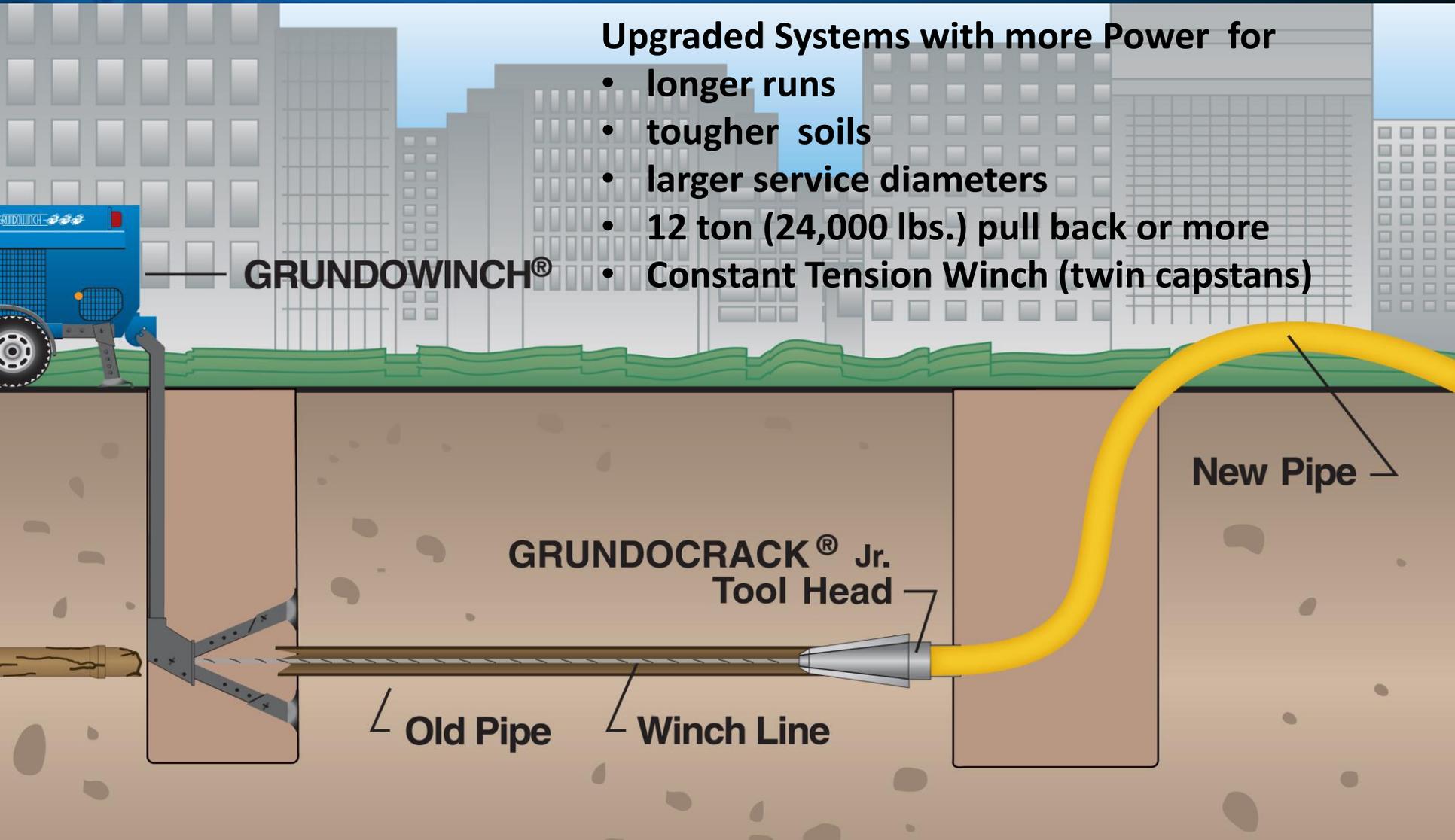
GRUNDOWINCH®

GRUNDOCRACK® Jr.
Tool Head

New Pipe

Old Pipe

Winch Line



Trenchless Rehabilitation

Pull & Split Winching System



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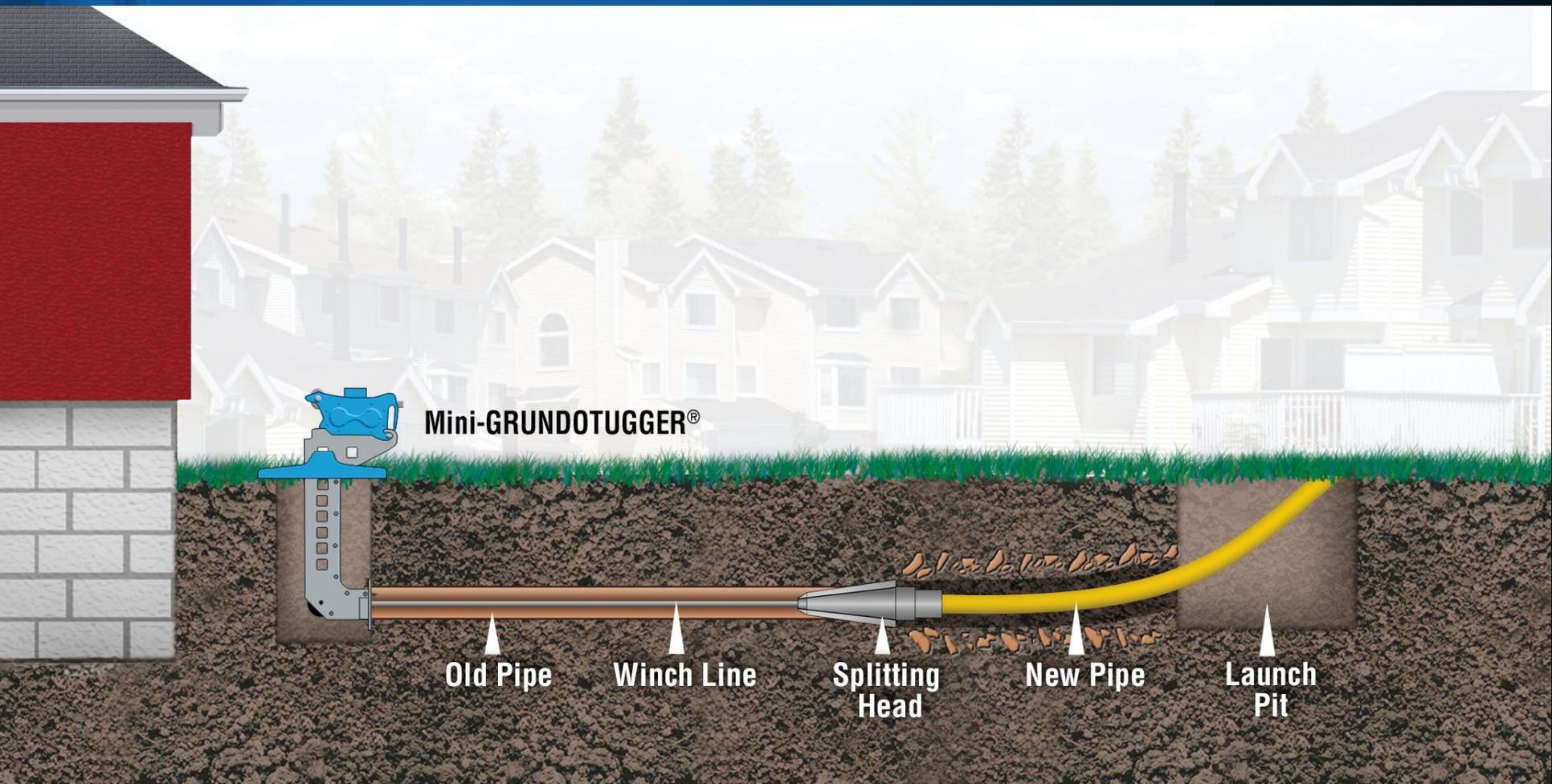
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Pull & Split Winching System



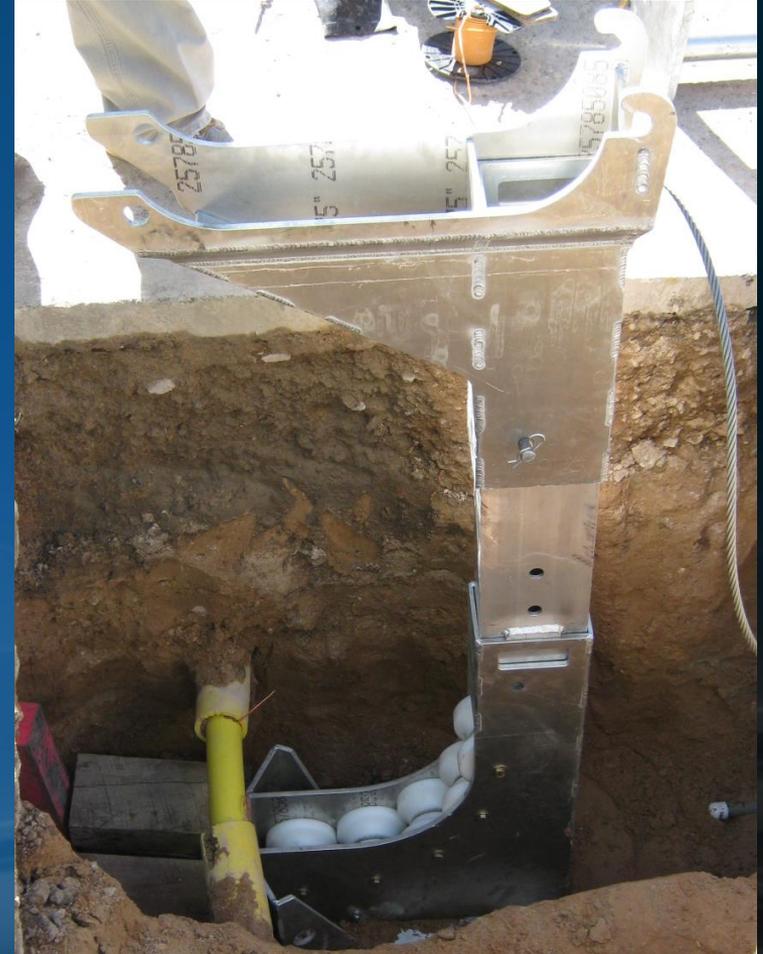
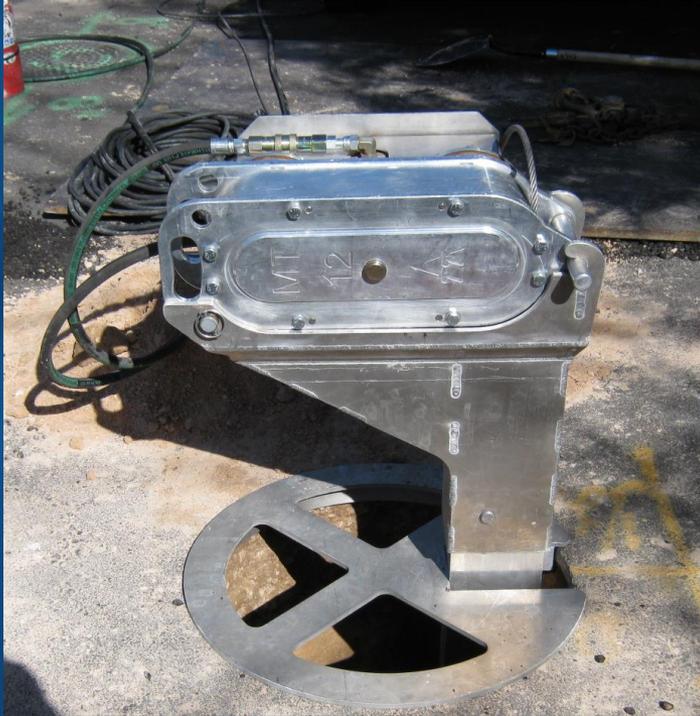
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Mini-Winch Splitting System



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Mini-Winch Splitting System



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Mini-Winch Splitting System

Case Study

- Replacement from Meter to the 2" Main at the sidewalk
- Temporary Service Maintained
- 2 small excavations
- 2-Bladed Cutter to split 1/2" Aldyl-A pipe
- Expander Body to Expand split pipe
- New 1/2" CTS PE Replacement Pipe pulled in

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Old Connection to 2" Main



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Temporary Gas Service Supply



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Drill Guide to Make Required “Weak Link” in New Pipe



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Cutter, Expander and New 1/2" Pipe
with Tracer Wire



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Splitting Process Begins



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Old Riser Removed



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Old Connection to Meter Set



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Constant Tension Winch



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6 Ton Down Hole Pulling Power



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New Service Pipe



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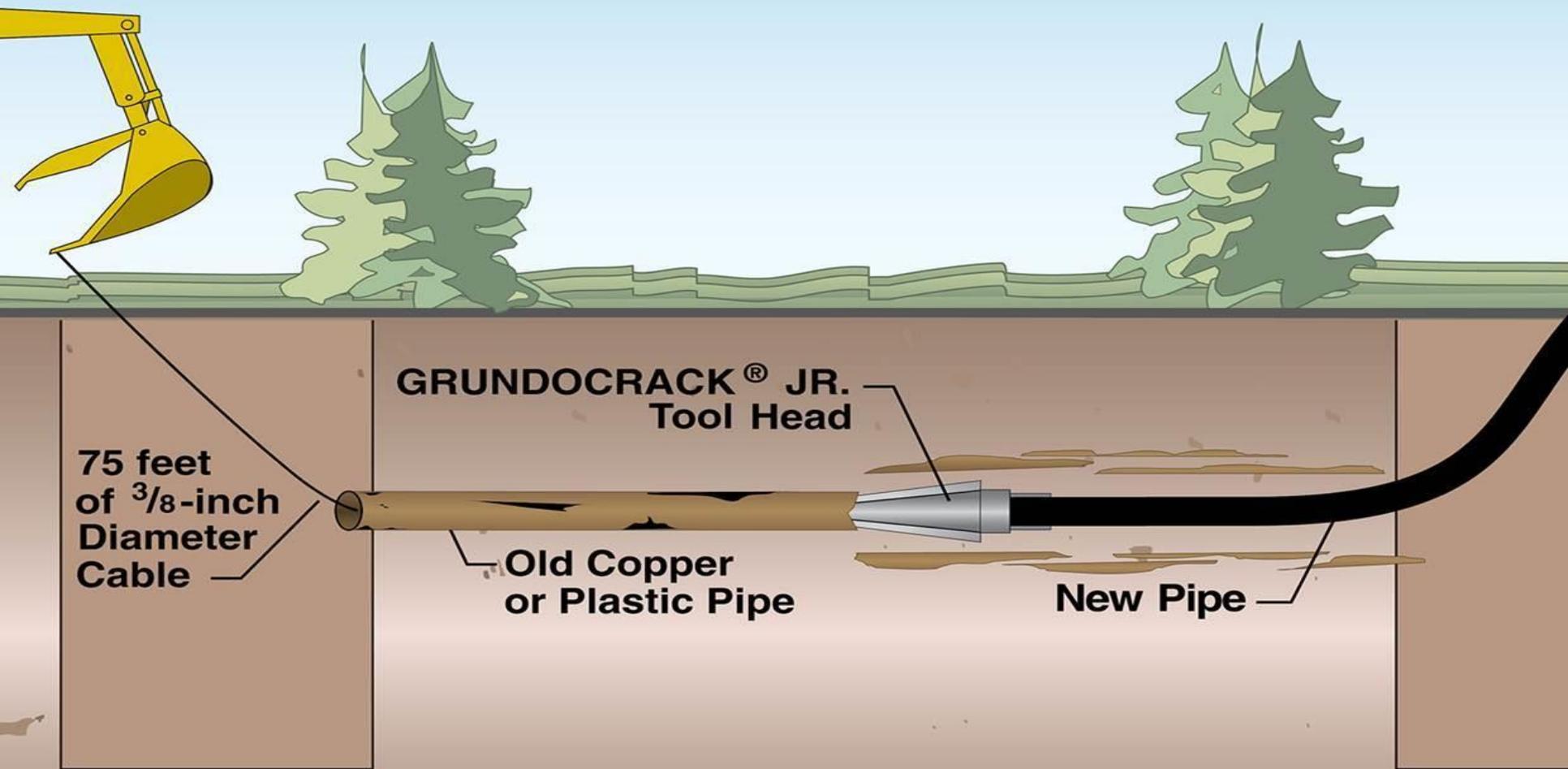
Mini-Winch Splitting System

Case Study Conclusions

- New 25' service installed with minimal excavation
- Service can be replaced with 1/2" or 1"
- Aldyl-A pipe split successfully
- Service splitting accomplished in a few minutes
- No damage to the new service pipe

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Weak Link Installed



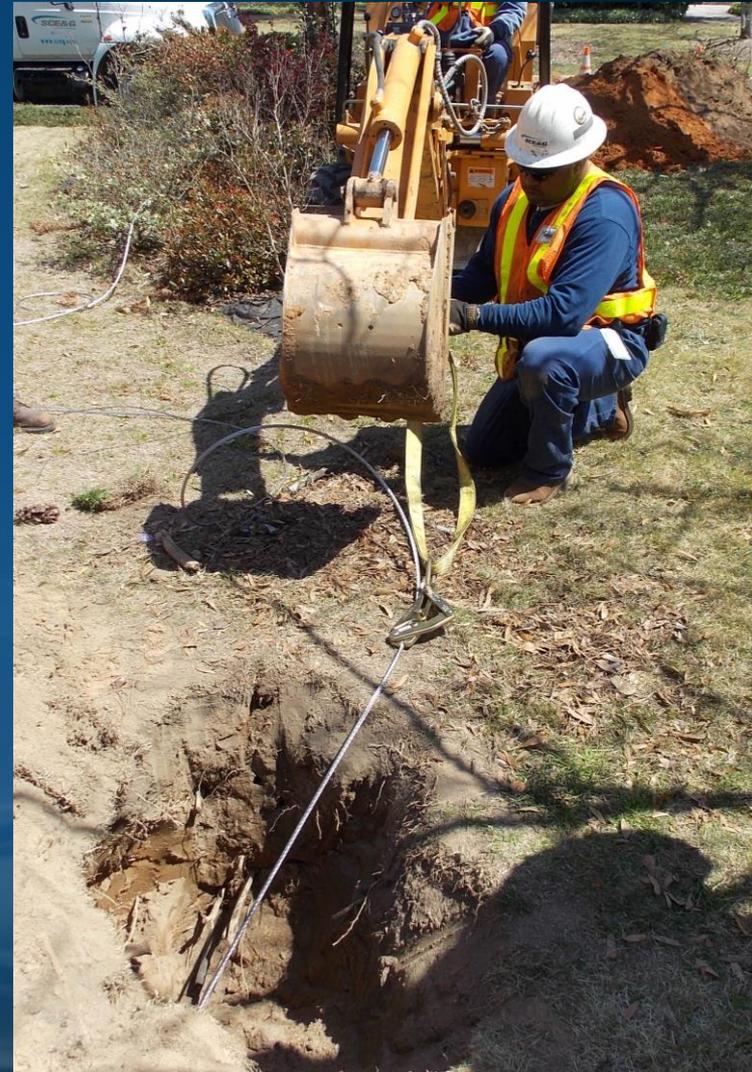
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