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Microtrenching: On the Cutting Edge of Fiber Deployment

Microtrenching Overview

What is Microtrenching?

Why use it?

How does it work?

Failures & Successes

Challenges & Benefits

Joint Use Implications

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What is Microtrenching?

Relatively new deployment technique

Trenches 1”-4” wide, depth varies

Duct & fiber go directly in the road

Homes fed by handholes behind curb

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Why Microtrench?

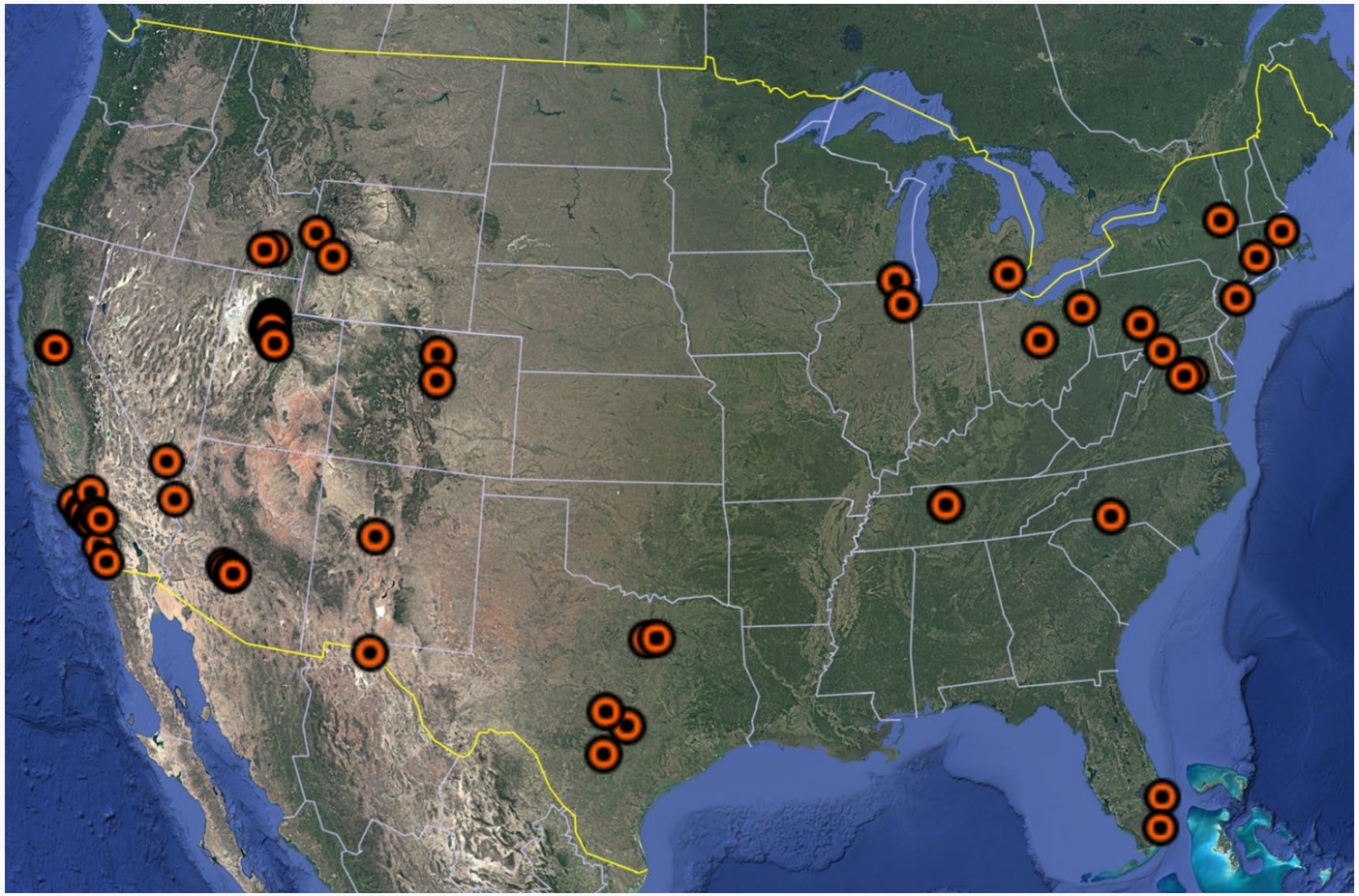
Simpler to engineer

Fast production, even in bad ground

Cleaner, less disruptive, safer to utilities

Built for deployment at scale

Widely accepted & used all over US - Oregon lagging behind



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Steps to Microtrenching Projects

1. Find willing community
1. Engineer pathways
1. Obtain permits
1. White lining & locates
1. Cut trench, excavate vaults, place duct & fiber, backfill & seal trench
1. Close out permits

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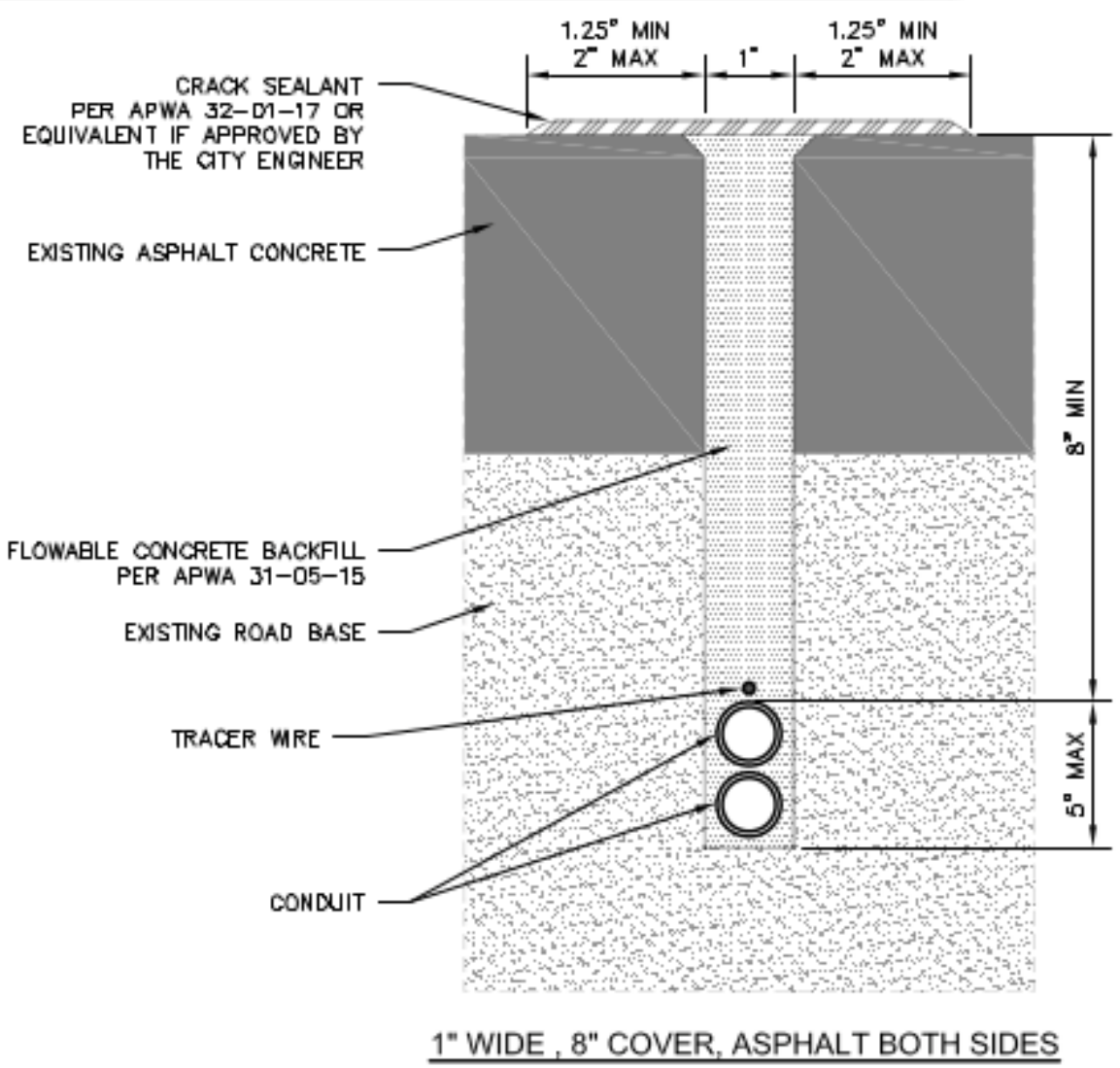
Microtrench Section



1" WIDE , 8" COVER, ASPHALT BOTH SIDES

Source: West Jordan UT Ordinance 22-11

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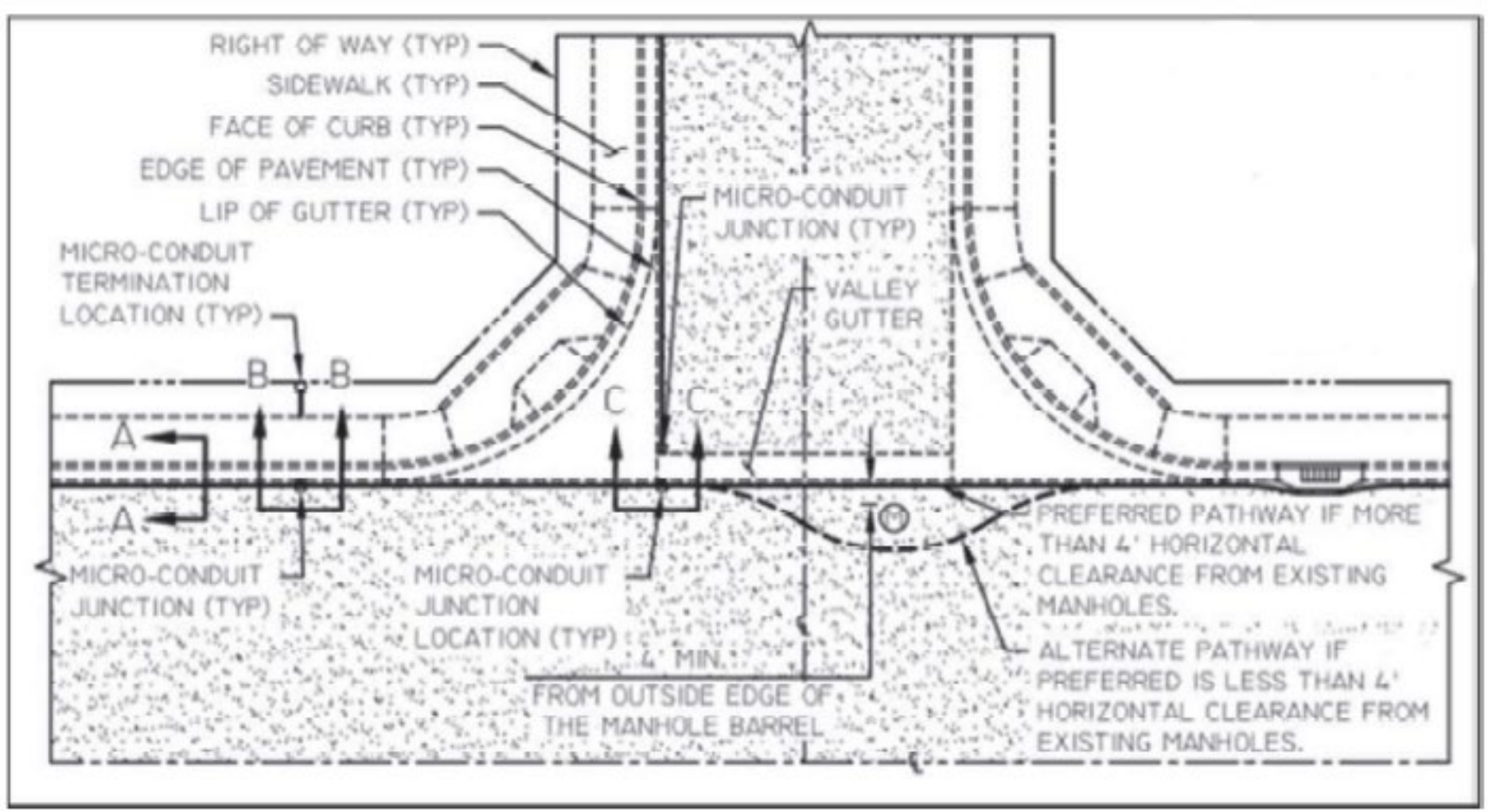
Curb Adjacent Trench Pathway:



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Direct Bury Fiber in Planter Strip Behind Curb

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History And Concerns

- Microtrenching is not new: first projects began in 2013.
- This is a mature technology that's deployed nationwide.

Let's Talk about Louisville:

  - In 2017, Google Fiber placed 'nano-trenches' 2-3 inches deep.
  - The trench reinstatement was pulled out by passing traffic, exposing duct and cables.
  - Google Fiber said that repairs would require them to "rebuild our entire network in Louisville...and that's just not the right business decision for us."
  - Google Fiber abandoned Louisville in 2019, paying a settlement to the City and donating to community groups as part of its departure.

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Louisville: End Result of “Learn By Failure”

Louisville: Insufficient backfill & reinstatement

Louisville: ‘Nano Trench’ failure

Dramatic failures get the most attention

- but they don’t tell the whole story.

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What Does Success Look Like?

Cleanly cut trenches, evenly applied backfill:

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What Does Success Look Like?

Respectful excavation & restoration:

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Microtrenching Challenges

- Winning over Public Works
- Oregon communities set their own standards
- Built for scale
- Managing utility locates
- Community relations
- Operations, maintenance, and repairs

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Microtrenching Benefits to Providers & Communities

- Speeds up telecom deployments
- Reduces joint use expenses
- Protects existing utilities & stays out of the way of road maintenance & repairs.
- Minimizes disruption to the community
- Blends into the road, less visible than open trench
- Brings fiber access to unserved/underserved neighborhoods

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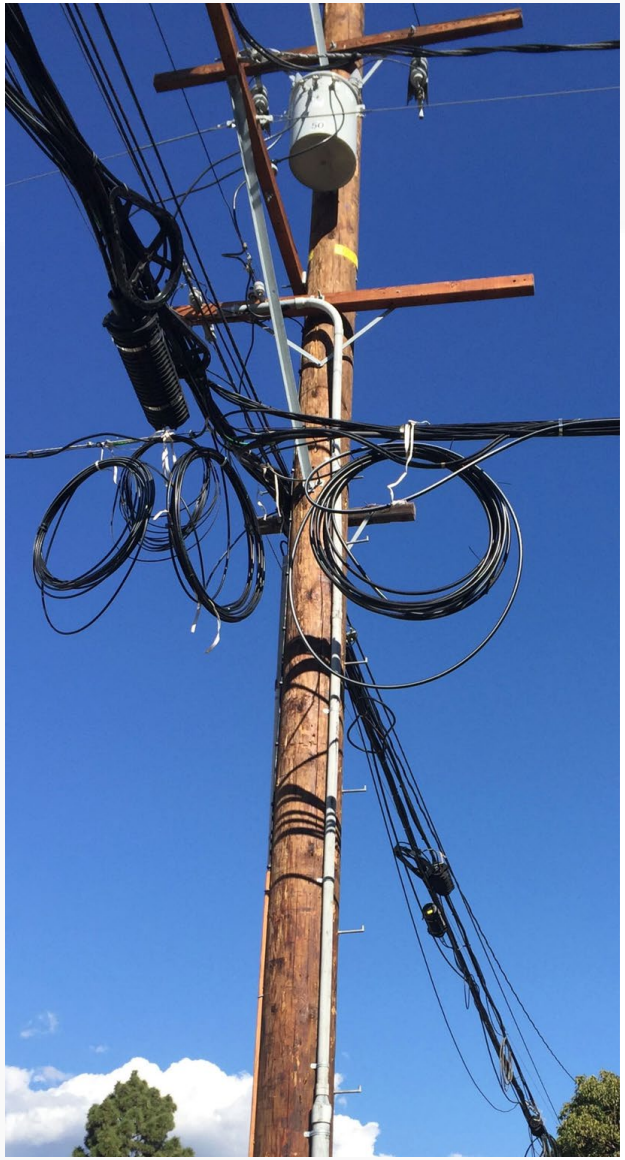
Joint Use Implications

- Completely different deployment methodology
- Aerial builds to microtrenched locations limited to feeders
- Fewer PAs, less MR, less work for JU fielders, engineers, inspectors
- Reduces burden on pole owners for MR/replacements, fewer engineering disputes
- Less pressure from telecoms to meet project timelines



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Thank You!