Micro Trenching / Narrow Slot

In Thin Asphalt Concrete Pavements

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Washington State Department of Transportation

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Micro Trenching / Narrow Slot

In Thin Asphalt Concrete Pavements

Micro-trenching is the process of creating a slot in an existing paved surface for the installation and use of fiber optic cable.

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Colville Confederated Tribe

Fiber Optic Installation

State Route 155

Nespelem, WA

Washington State Department of Transportation

EXECUTIVE ORDER: ACCELERATING BROADBAND INFRASTRUCTURE DEPLOYMENT

United States Department of Transportation, Federal Highway Administration,

Office of Policy and Governmental Affairs

Successful Practices of Broadband Deployment in Highway Rights of Way:

Summary Paper

May 2013

Washington State Department of Transportation

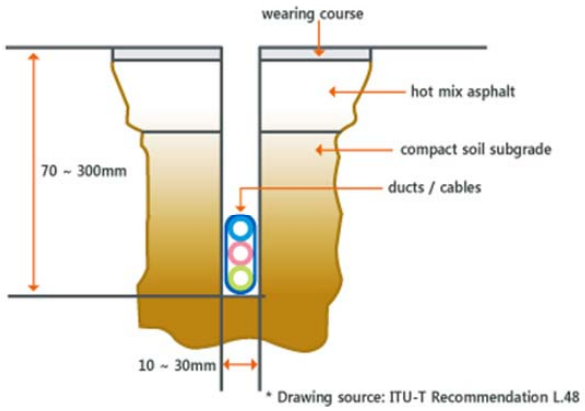
Franchise Agreement

WSDOT w/ Colville Confederated Tribes

- ❑ Fiber Conduit Location
- ❑ Vault Locations
- ❑ Directional Boring
- ❑ Reinstatement Process
- ❑ Pavement Preservation

Micro Trenching / Narrow Slot

Construction for Fiber Optic Cable Installation



Construction Specifications

- ❑ RUS Bulletin 1753-150
- ❑ ITU-T Recommendation L.49

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Video Produced By:

Tim Moomaw, WSDOT Construction Trainer

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Construction Specifications

- Depths are 12” to 9”
- Width of slot is approximately 1 ¼”

Reinstatement

Reinstatement is the term used to backfill and repair the roadway to it's original serviceable condition.

Reinstatement

Conduit Placement:

- 6” Minimum Cover
  - 5”± Native Material
  - 3”+ Asphalt Mastic

Reinstatement

Back Fill material:

- ❑ Proper gradation
- ❑ Optimum moisture content
- ❑ Maximum compactive effort
- ❑ Finish grade to bottom of existing pavement

Reinstatement

Removal of Spoils:

- ❑ Side Cast Brooming
- ❑ Vacuum Truck

Reinstatement

Essential requirements of the reinstatement material:

- ❑ Bond to the existing pavement edges
- ❑ Seal the slot against water ingress
- ❑ Rapid cure to enable road re-opening
- ❑ Resistant to pull-out by traffic

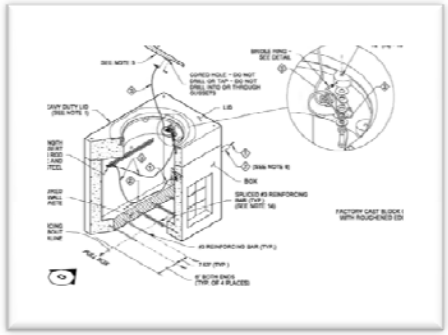
Reinstatement

Reinstatement material:

- ❑ Hot Applied Asphalt Mastic
  - Polymer modified asphalt
  - 3/8” Aggregate structure
- ❑ Preheat the trench to remove moisture
- ❑ Fill to top of existing wearing course

Vault Placement

Vaults had to be WSDOT approved.



Standard Plan J-90.10-02

Directional Boring

No transverse open cuts were allowed across highway.

Minimum of 5 feet below existing pavement.

Production Rates

Trenching
- ❑ 3000 L.F Per Day

Reinstatement
- ❑ **3000 L.F Per Day

Blowing Fiber
- ❑ 10,000 L.F. per day

Lessons Learned

Trenching

- Cutting Wheel
- Oversize Material
- Pavement Damage

Lessons Learned

Vacuum Truck

- Extracting Spoils

Lessons Learned

Reinstatement

- Moisture and Mastic don't like each other…..

Lessons Learned

Transitions and pavement repair areas…..

- ❑ Cutting a wedge

Lessons Learned

Blowing Fiber….

- Keep it clean!

Lessons Learned

End of reel splice…..
Do not reinstate until after fiber is blown.

Lessons Learned

Vault Locations….

- Lid height and offsets.

Summary

What's next?