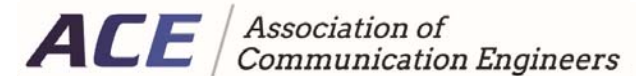


A large, curved blue graphic element that starts as a thin line on the left and expands into a wide, curved band on the right, transitioning from a dark blue to a lighter cyan color.

OSP Construction Update

2016 ACE/RUS
School and Symposium



OSP Construction Update

- Material Availability
- Accurate Records
- Greenfield/Brownfield Construction
- Other Pain Points

Material Availability

- Fiber Availability
 - There have been many warnings about material having very long lead times
 - Being driven in part by Tier 1 and Tier 2 impending projects
 - CAF II
 - 1 Gig fiber builds
 - Tier 3 has been fairly quiet with few large construction projects
 - Many carriers have been waiting on the new FCC Rules to be released
 - Expecting more projects to be released now

Material Availability

- Ways to overcome the lag time
 - Order more standardized fiber sizes
 - 288 instead of a 216
 - 48 instead of 36
 - Especially for smaller jobs look to other fiber vendors
 - Might be able to reduce lead times down to 6 to 12 weeks
 - Of course – advance planning is always beneficial
- Always put in more fiber than you can imagine
 - “Four fibers and 45 Mbps is all you will ever need!”

Record Keeping

- Accurate records are becoming a must in many metro areas
 - ROW records need accurate depths as part of the positioning
 - This is especially true in crowded ROW – AND Call B4 U Dig services
- No reason not to have accurate records on new construction
- Updating and correcting old maps has been a major activity for engineers over the last few years and does not appear to be slowing down
- Google Earth and other aerial views have gotten a lot better for high-level designs and such
 - Still not a replacement for in-field staking

Greenfield/Brownfield Construction

- Greenfield is a pretty settled argument
 - Buried FTTP
 - Extra mainline duct
 - Splitters located at the FDH
 - Home run fiber splices to the unit
 - A lot of joint trench potential savings

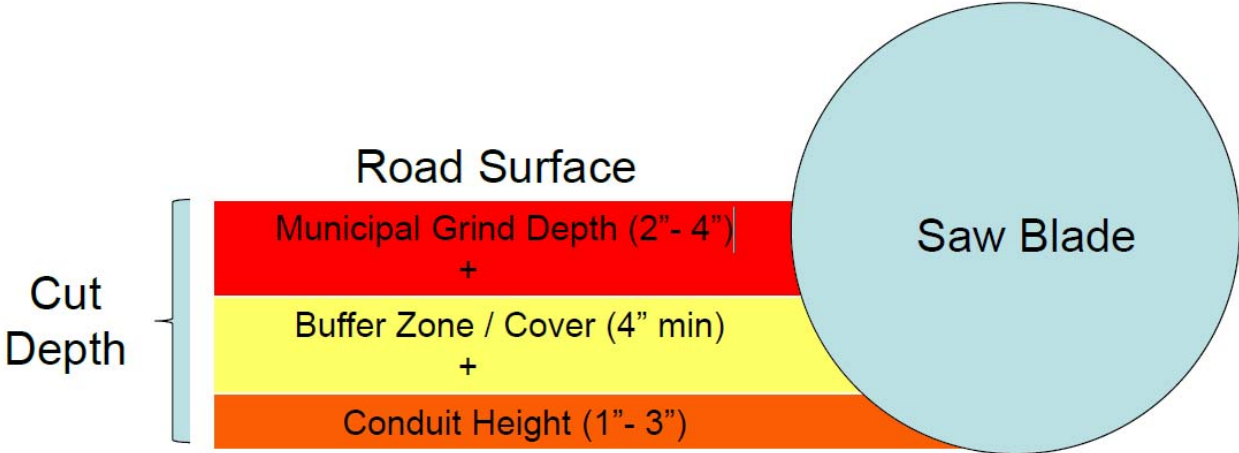
Greenfield/Brownfield Construction

- Brownfield is a lot more challenging
 - Aerial Designs offers a faster build time
 - Has pole attachment and ongoing lease costs
 - Urban areas tend to have more aerial options
 - Fiber is exposed to the elements and people!
 - Buried Fiber is more traditional but a lot more difficult in existing areas
 - Tearing up someone's flower beds
 - Also has ongoing locate costs associated with this design
 - Permitting can be more difficult as well
 - Micro Trenching is an option

Micro Trenching

- Offers the ability to quickly place fiber in brownfield areas with minimal disturbances
 - By going in the street, removes several difficulties with ROW and permitting
 - Offers a very quick construction technique for the distribution fibers
- Concerns about how to handle road maintenance/repaving still exist
- Has been talked about for several years now with several trials, but widespread acceptance has not been achieved

Trenching Overview



Typical cut depths are 7-12 inches

Micro Trenching



Stackable Duct



Micro Trenching Cost

- A lot of variables
 - Materials
 - Labor
- Spliced or Connectorized cable
- Fiber management and storage (Generic or Specialized)
- Contractors with experience
- Traditional locates should be performed
- Fewer people required
- Clean up very minimal
- Pricing shows a range of 50 to 60% of traditional construction in the same conditions

Other OSP Discussion points

- Drops
 - Connectorized or fusion drops
 - Greenfield vs Brownfield has an impact with this as well
 - Is duct for the drop necessary vs the cost
 - Especially across the private lot
- Overall building philosophy
 - Should the network be hardened for once in a 100 yrs event or a once in a 10 yr event
 - Where is the dividing line between network reliability and cost efficiency

Other OSP Discussion points

- Locatable cable
 - Make sure that your cable is locatable if placed underground
 - Aerial cases that are not bonded are not locatable when placed underground!

Thank You

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