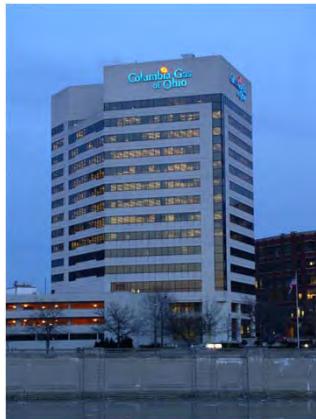


UTILITY RELOCATION DESIGN CONSIDERATIONS

Presented by
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**Columbia Gas[®]
of Ohio**
A NiSource Company

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**NiSource Energy
Distribution Group**



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INTRODUCTIONS

- Objective of presentation
- Disclaimer
- Quiz!





True or False?

- Buried utilities are often located between curb & sidewalk. A KDOH Type B Curb Box Inlet (CBI) provides the most available room between curb & walk.
 - True – the junction chamber for a Type B CBI is located from the curb line out into the road thereby freeing-up space behind the curb for utilities.
- The KYTC Permits Manual regarding encasement requires that all buried pipe crossings greater than 2" in diameter be encased – no exceptions.
 - False – PE-202-3 of the Permits Manual lists scenarios where encasement is not required so long as certain construction methods are employed.



True or False?

- As-Built relocation drawings provided by a utility company are an adequate source of information for a roadway contractor to proceed with excavation around said utility without having to call in locates.
 - False – excavators are required by law (KRS 367.4301) to adhere to all requirements of the state's dig law.
- The ratio of an igloo's circumference to its diameter is:
 - An Eskimo Pi



ASSUMPTIONS

- Assessment has revealed there is conflict:
- Direct
 - Subgrade cut, embankment benching, storm or sanitary sewers/structures, retaining wall, signal/light pole foundations
- Indirect:
 - Insufficient or excessive cover, inaccessible, proximity to adjacent trenching or structures, etc.
- Concluded you need to maintain the facility



WHAT TO DO... ?

- “Negotiate” with KDOT & their design engineer or general contractor to revise plans to alleviate conflict... if possible



CONSIDERATIONS

- Possible design revisions to minimize or eliminate conflicts
 - Storm & drainage structures
 - Sanitary sewers & structures
 - Elliptical pipe vs. round
 - Embankment benching
 - Traffic signal & light pole foundations
 - Back slopes on side ditches
 - Driveway approaches



PRELIMINARY RELOCATION DESIGN

- Consider betterment & growth potential
 - any pending New Business line extensions
- Consider alternate feeds or uprates
 - consolidation of mains
- Consult with related departments
 - Corrosion concerns
 - Cathodically protected - anodes or rectified
 - Subject to liquids
 - need to add or maintain a drip



PRELIMINARY RELOCATION DESIGN

- Typical Sections
 - Underdrains
- Pavement Sections
 - Reserved Undercut
- Cross Sections
 - Embankment Benching
 - Ditching
- Traffic Signalization Plans
- Detour Plans & Alternates



PRELIMINARY RELOCATION DESIGN

- Coordinate relocations with other involved utilities
- “Rough Stake” followed by field review
 - what might look good on paper doesn't always work!
- Demolition of existing structures
- Construction Methods
 - Open trenching vs. directional boring



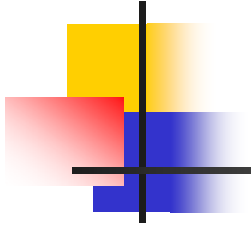
PRELIMINARY RELOCATION DESIGN

- Clearances [P&P 640-1]
 - Between other utilities and structures
 - Trench boxes
- R/W Issues
 - State roads vs. county roads
 - Condemnation
- Contaminated soils known or suspected
 - Monitoring wells?
- Blasting [GS 1100.020]
 - Assess using PipeBLAST program w/Data Sheet



FINAL RELOCATION DESIGN

- DOT approval of casing requirements, or waiver thereof, & backfill material.
 - Consult DOT Utilities & Permits Manuals
- Conform to federal/state/local codes
- Environmental Permitting [P&P 640-14]
 - NOI and/or SWPPP required
 - Project Environmental Information Form (PEIF)
 - CKY = Michelle Kearns (Ph. 614-486-4383)
- Distribute proposed relocation plans to KDOT and other involved parties.



QUESTIONS?