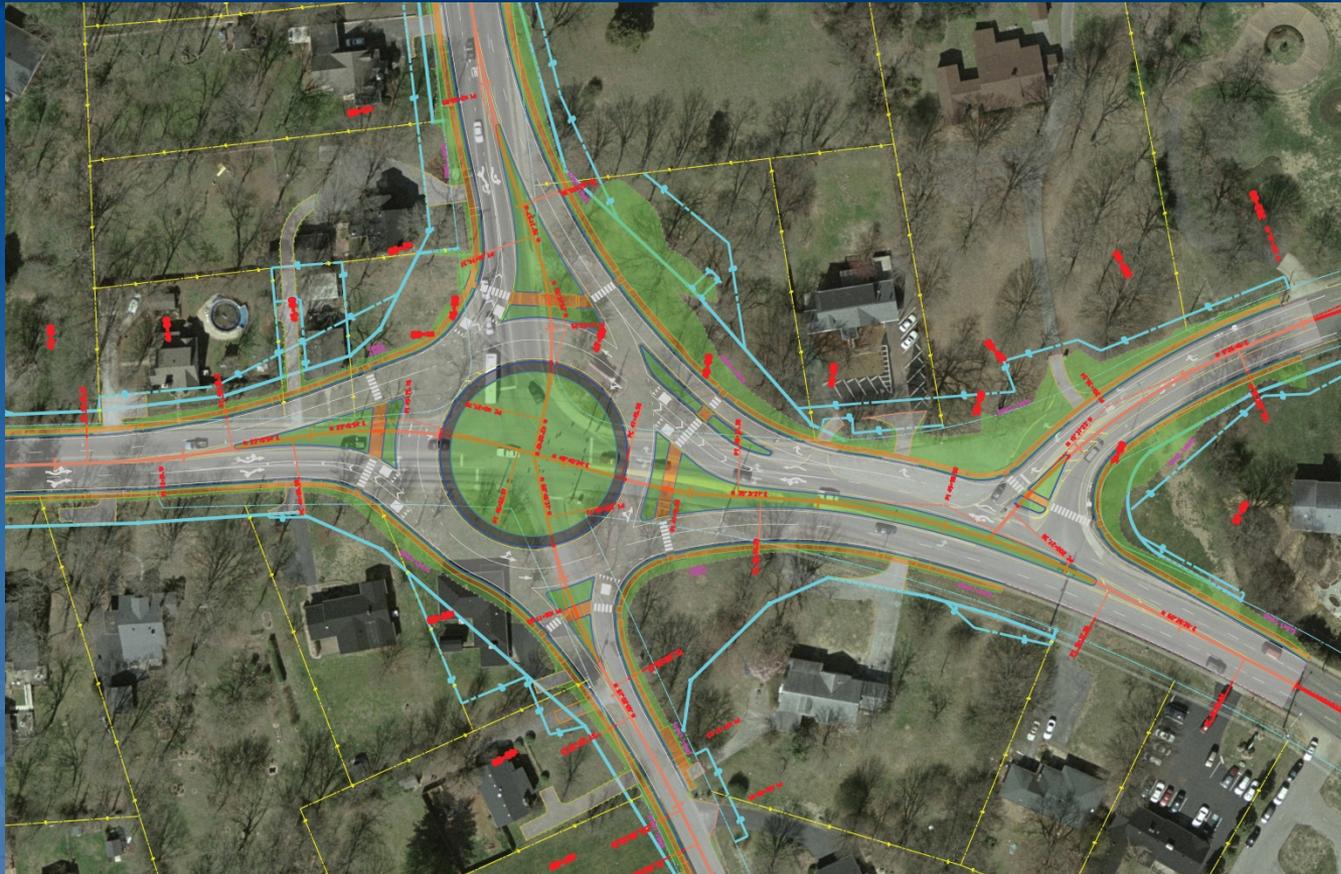


# Development of Bowling Green's First Roundabout



**BURGESS & NIPLE**  
Engineers ■ Surveyors ■ Planners

Greg Meredith P.E., *District 3 Chief District Engineer*

Arrell Thompson P.E., *Burgess & Niple*

Joe Plunk, P.E., *District 3 Project Development Branch Mgr*

Sept. 9, 2014

# Development of Bowling Green's First Roundabout



Greg Meredith P.E., *District 3 Chief District Engineer*  
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Sept. 9, 2014

# Outline

1. Existing Conditions
2. Pre-design Project History
- 3. Benefits of Roundabouts**
4. Development of Design Project
5. Getting the Project to Letting



# Benefits of Roundabouts

1. Conflict points are reduced
2. Geometrics encourage speed reduction
3. Lower operating speeds reduce crash severity
4. Continuous flow reduces delay
5. Reduced fuel consumption (noise & air quality impacts)
6. Operation/maintenance costs can be less than signalized

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# Project Purpose & Need

*The purpose of this project is to improve safety and mobility for motorists, bicyclists, and pedestrians along US 31W through the intersections with University Boulevard/Loving Way and with Chestnut Street.*



# Unique Project Challenges

## 1. Design Traffic Forecasts Exceeded Road Capacity



# Unique Project Challenges

## 2. Profile grade and cross slopes into intersection



US 31W ~ 4% profile grade  
Chestnut St. ~ 5% profile grade  
US 31W horizontal curve creates superelevated  
pavement slopes

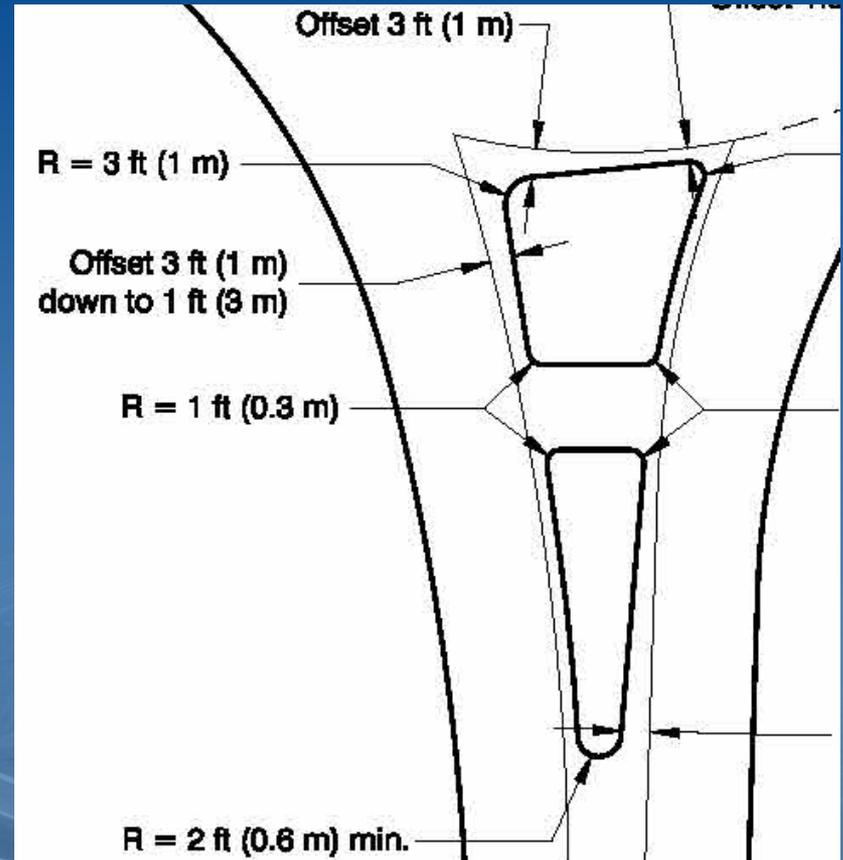
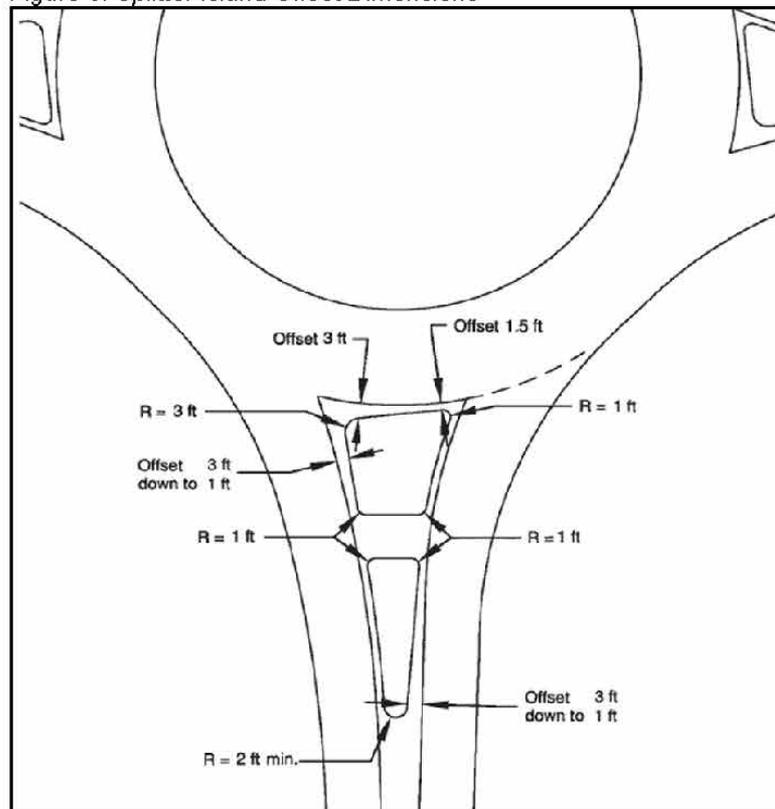
# Unique Project Challenges



# Unique Project Challenges

## 3. Designing and Building the Roundabout to KYTC Design Memo 03-10

Figure 6: Splitter Island Offset Dimensions



# Unique Project Challenges



# Unique Project Challenges

## 4. Keeping Utilities Out of Sight Triangles



# Unique Project Challenges

## 4. Keeping Utilities Out of Sight Triangles



# Unique Project Challenges

## 4. Lighting the Roundabout



# Roundabout Construction



# Roundabout Construction



# Roundabout Construction



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# Utility Coordination

- KYTC acquired utility easements
- KYTC paid 100% for private if dates met



- 7 utilities
- BGMU 69 kV trans. line
- AT&T duct bank