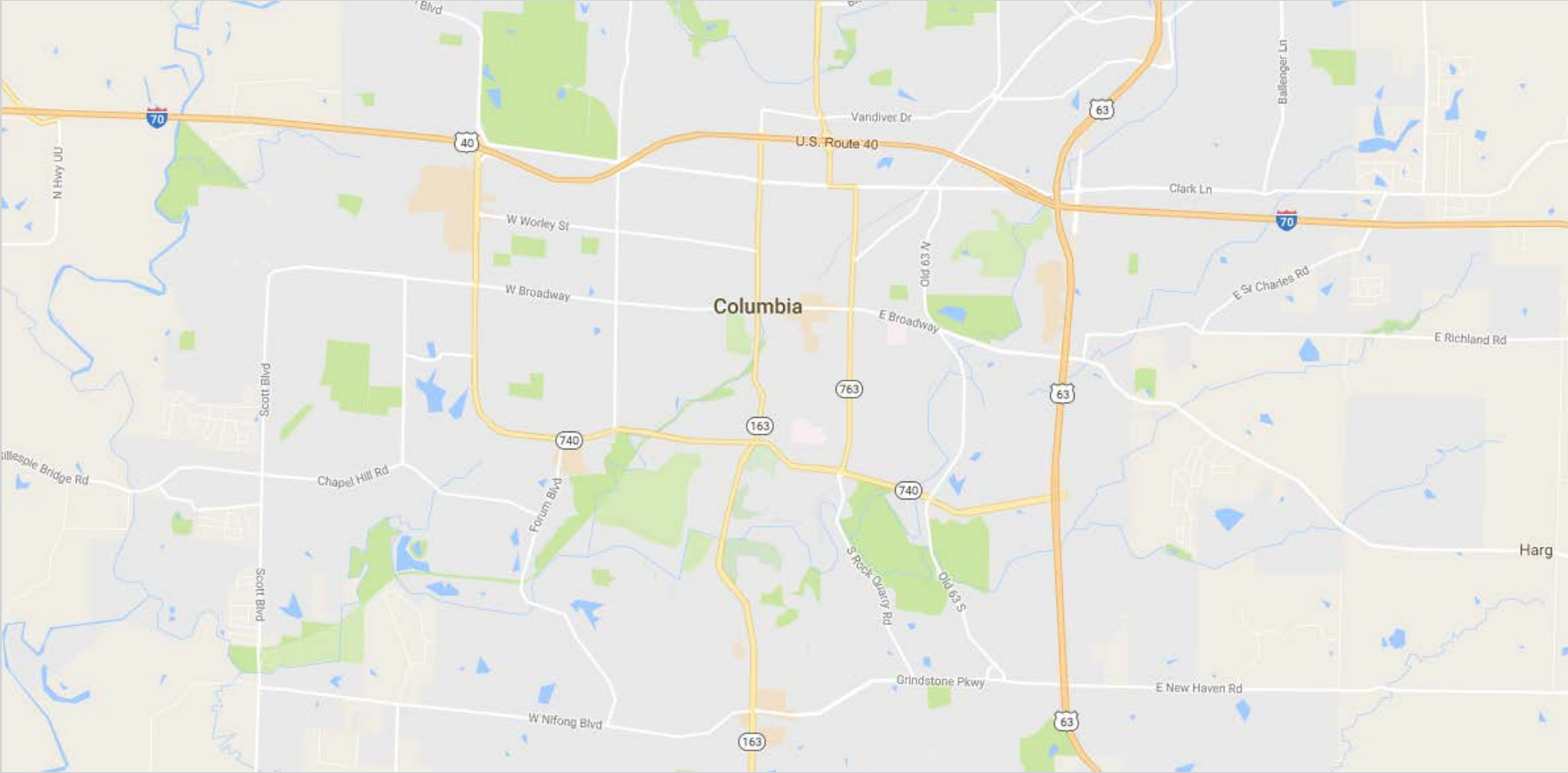


Roundabouts

*Designing for Today,
Planning for Tomorrow*

Todd Kempker, PE

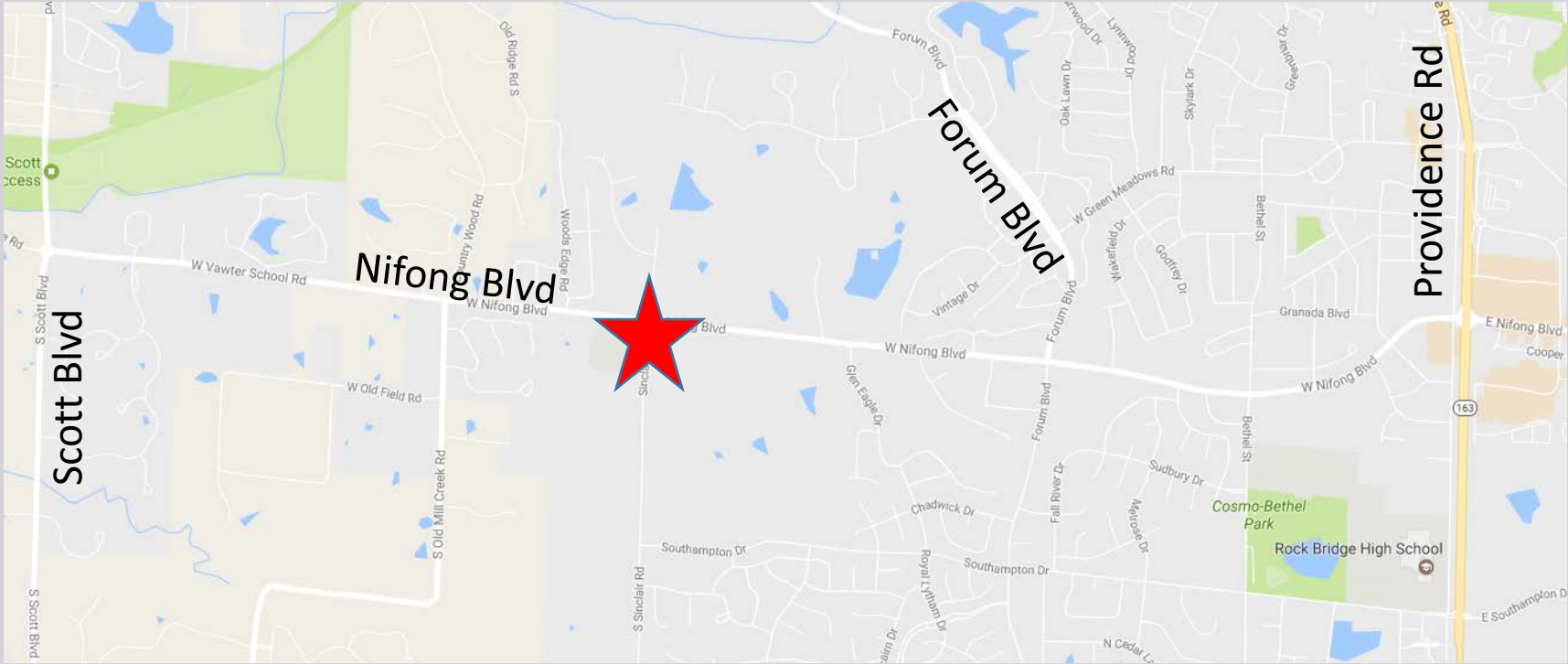
Case Study



Case Study



Case Study



Case Study – Nifong and Sinclair



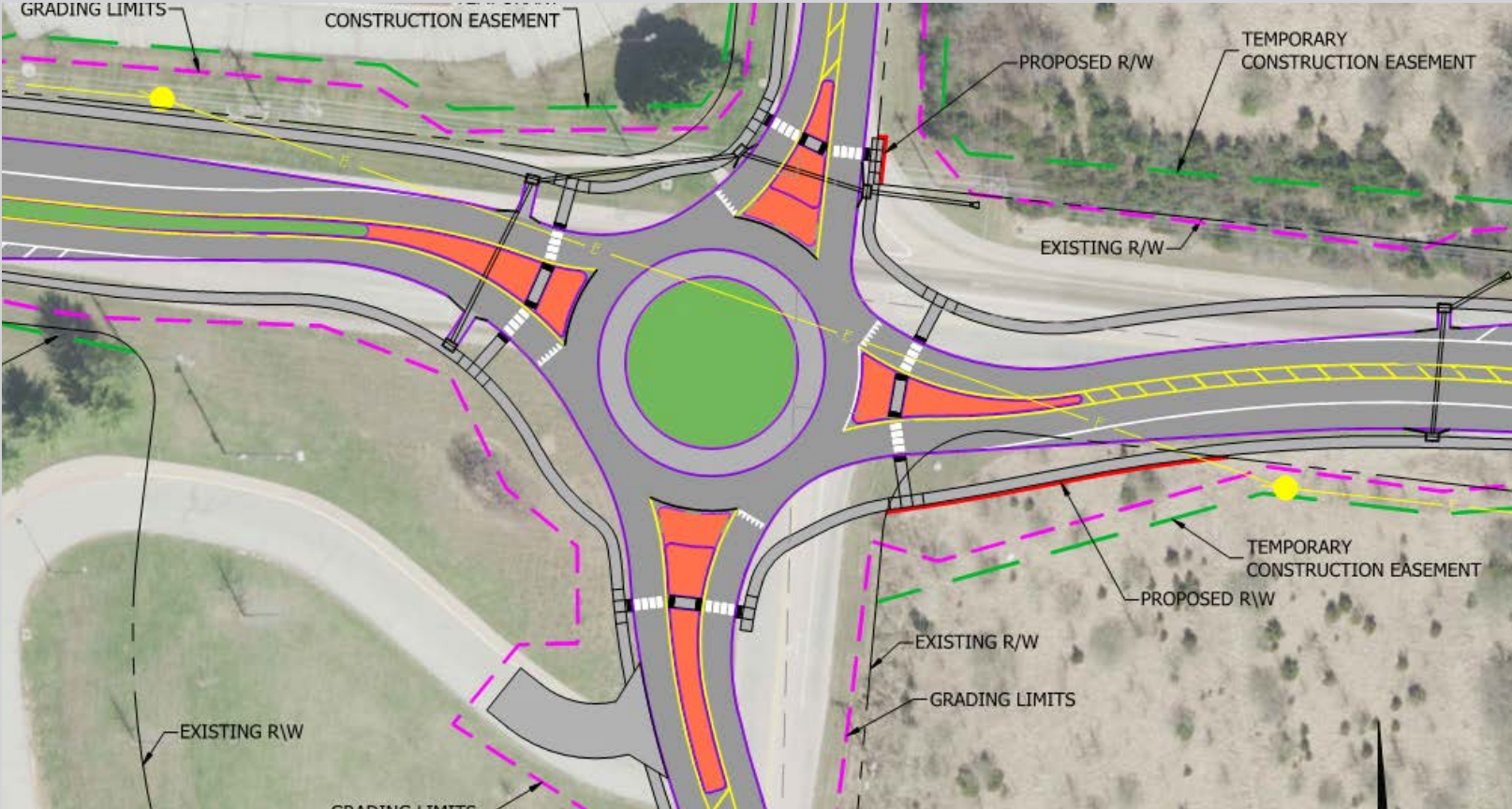
Case Study



Case Study



Case Study

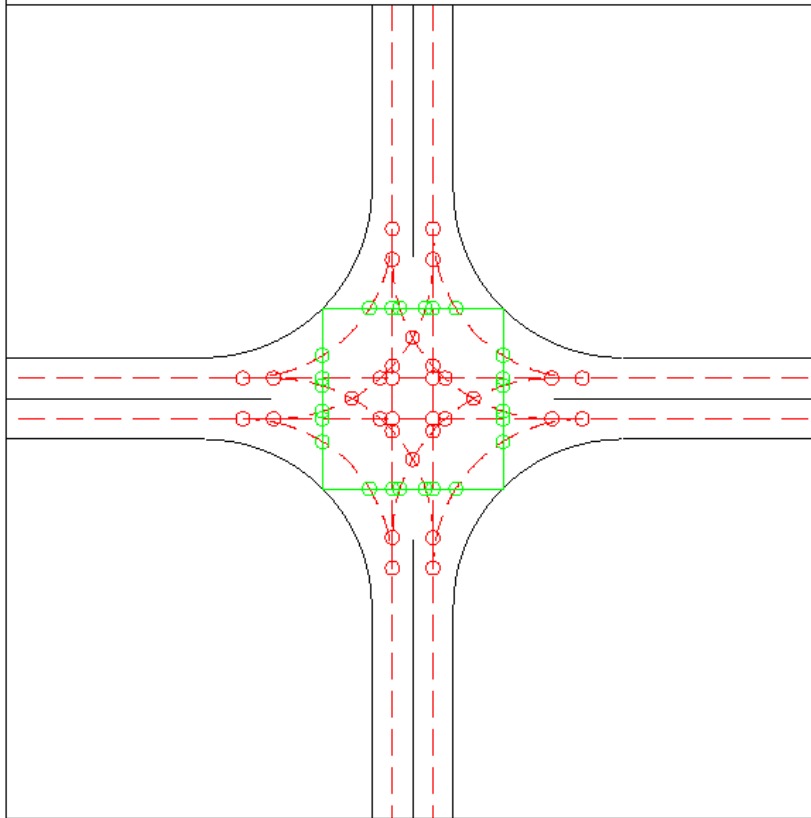


Capacity

- **Signal**
 - Adequate for existing and future condition
 - Controlled by lanes
- **Single lane roundabout**
 - Best option for existing conditions
 - Inadequate if Nifong becomes four lanes
- **Dual lane roundabout**
 - Overkill today
 - Necessary for the future

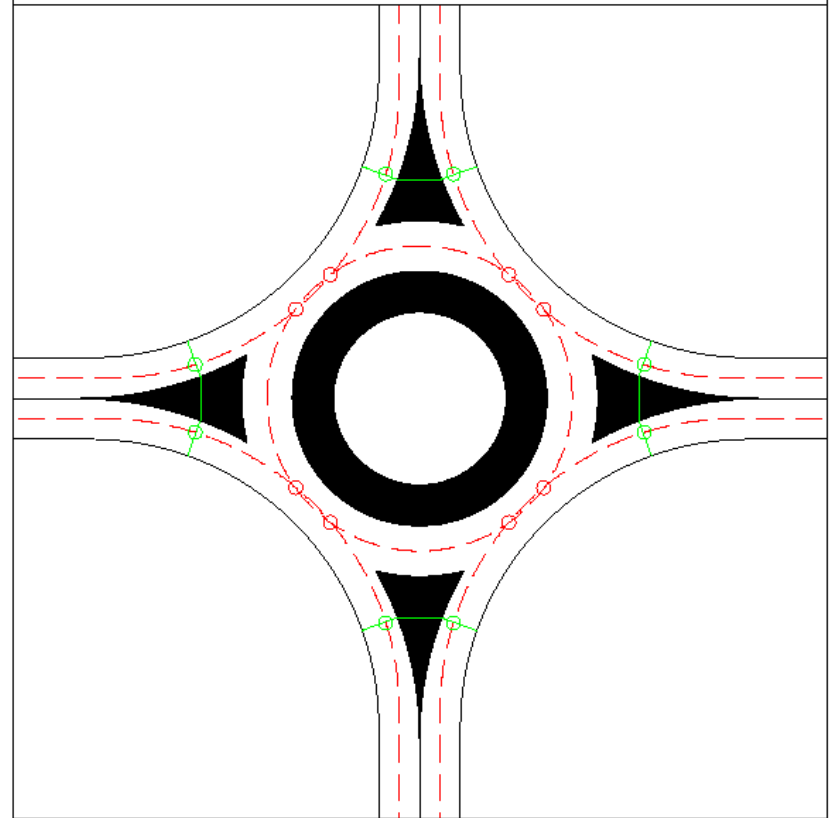
Conflict Points

2-LANE SIGNAL



- 24 VEHICLE CONFLICTS
- 24 PEDESTRIAN CONFLICTS

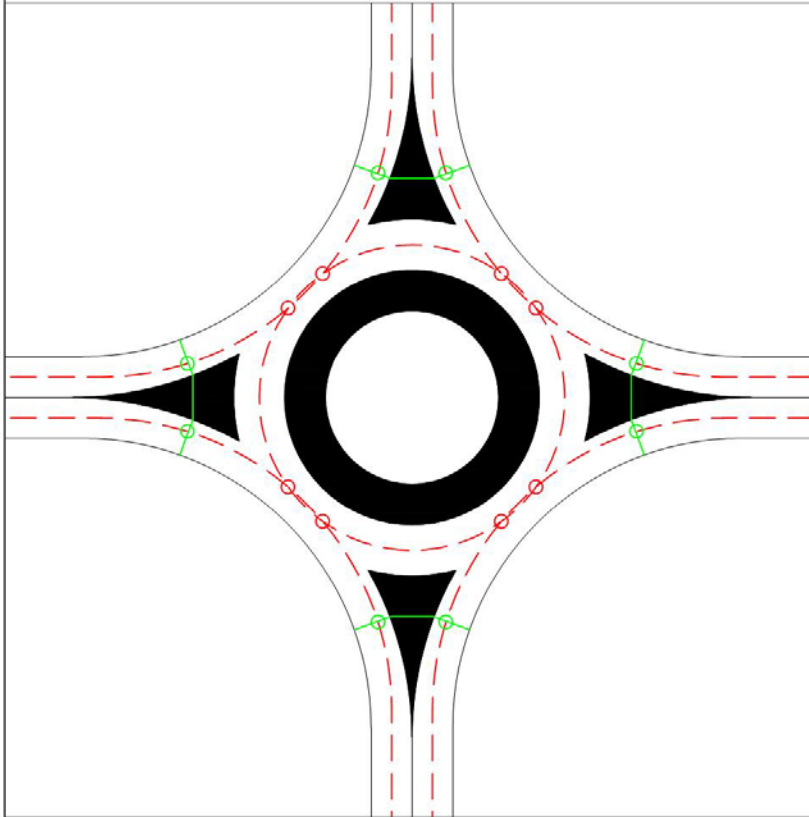
SINGLE LANE ROUNDABOUT



- 8 VEHICLE CONFLICTS
- 8 PEDESTRIAN CONFLICTS

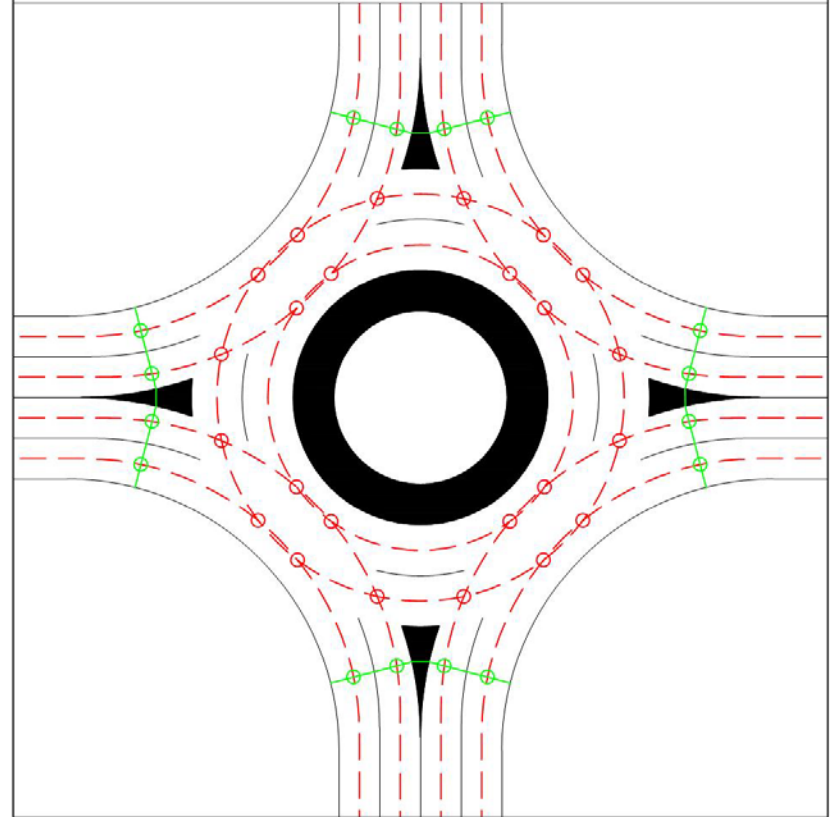
Conflict Points

SINGLE LANE ROUNDABOUT



- 8 VEHICLE CONFLICTS
- 8 PEDESTRIAN CONFLICTS

DUAL LANE ROUNDABOUT

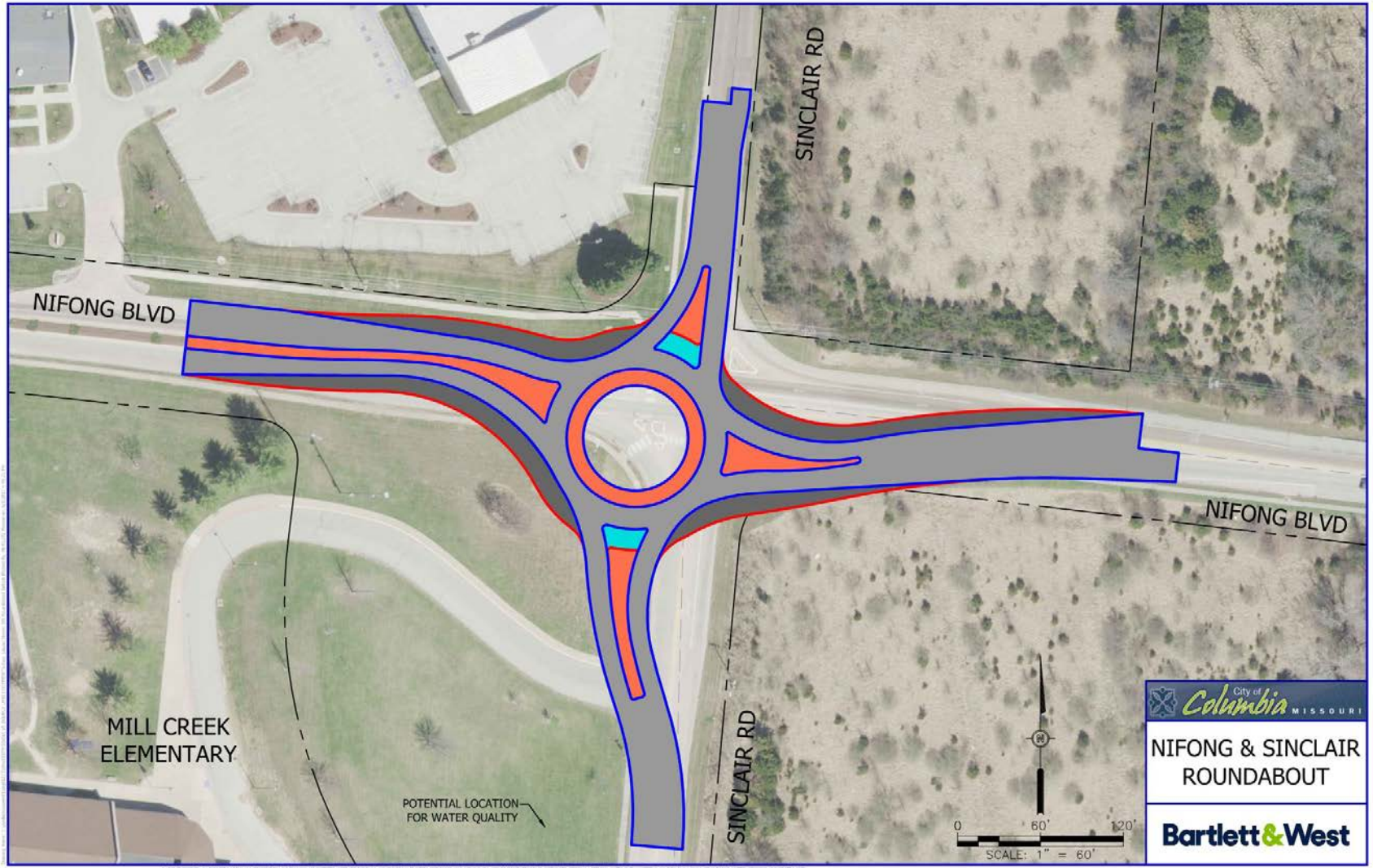


- 24 VEHICLE CONFLICTS
- 16 PEDESTRIAN CONFLICTS

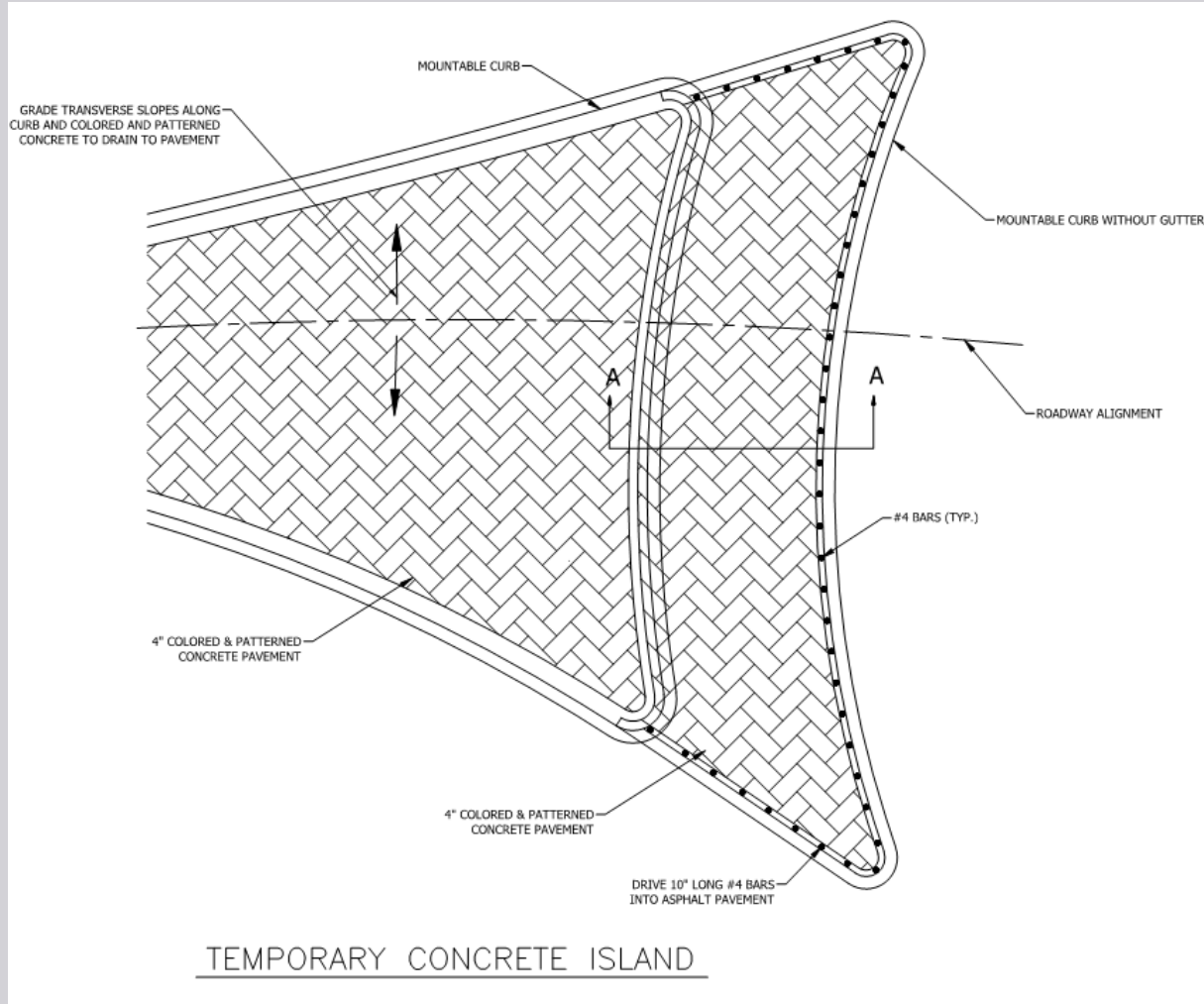
Preferred Option

- **Roundabout**
 - Safety benefits
 - Better traffic operations
 - Lower costs
 - Able to miss utilities
 - Avoids costly Right-of-Way locations
- **Single lane now**
- **Dual lane in the future**

Single vs. Partial Dual Lane Roundabout

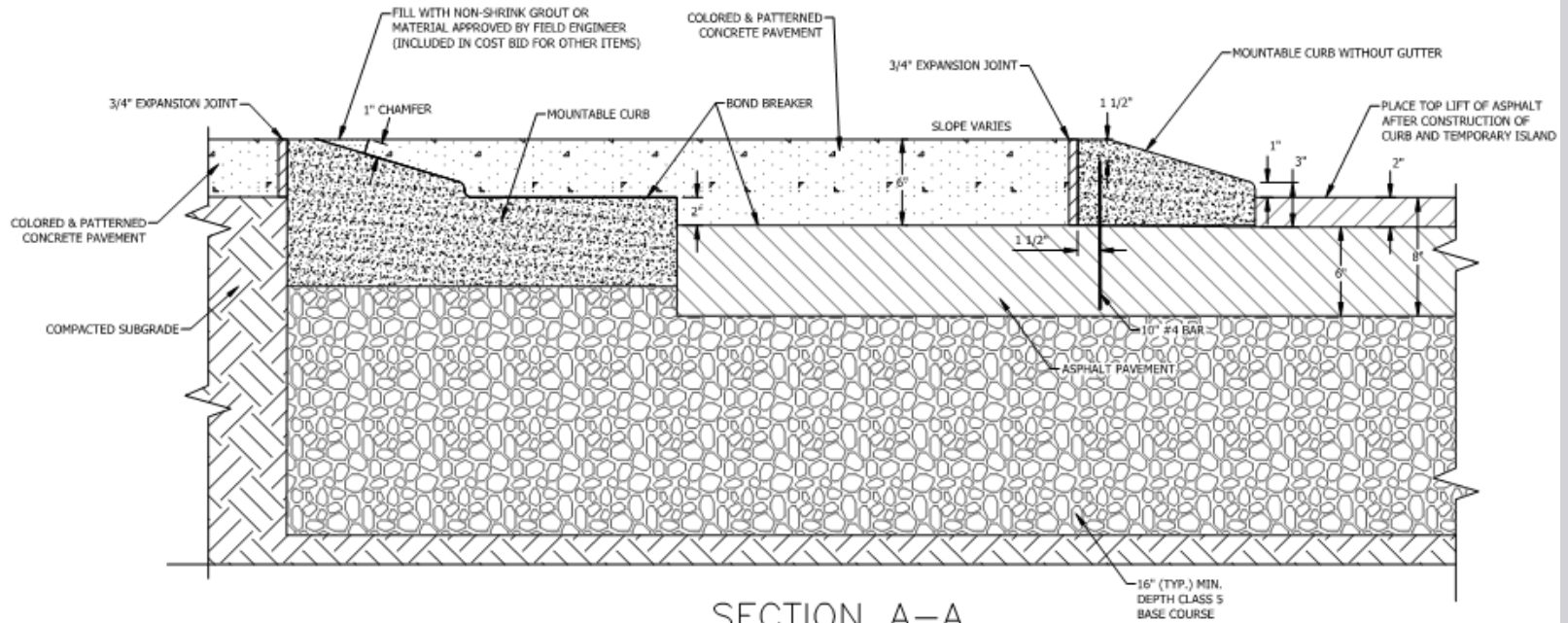


Removable Splitter Islands



Asphalt or concrete overlay after temporary extension is removed

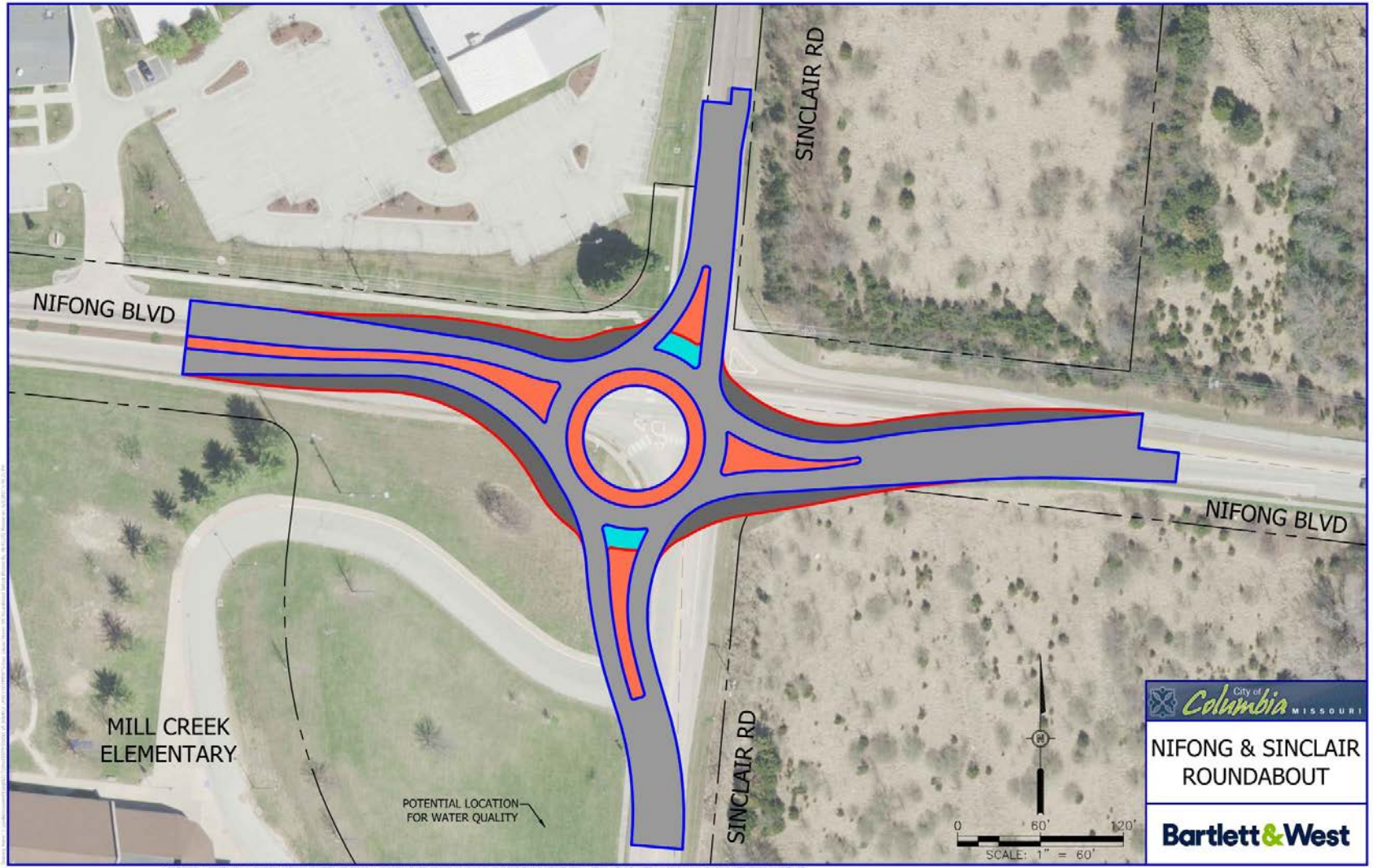
Removable Splitter Islands



Removable Splitter Islands



Single vs. Partial Dual Lane Roundabout



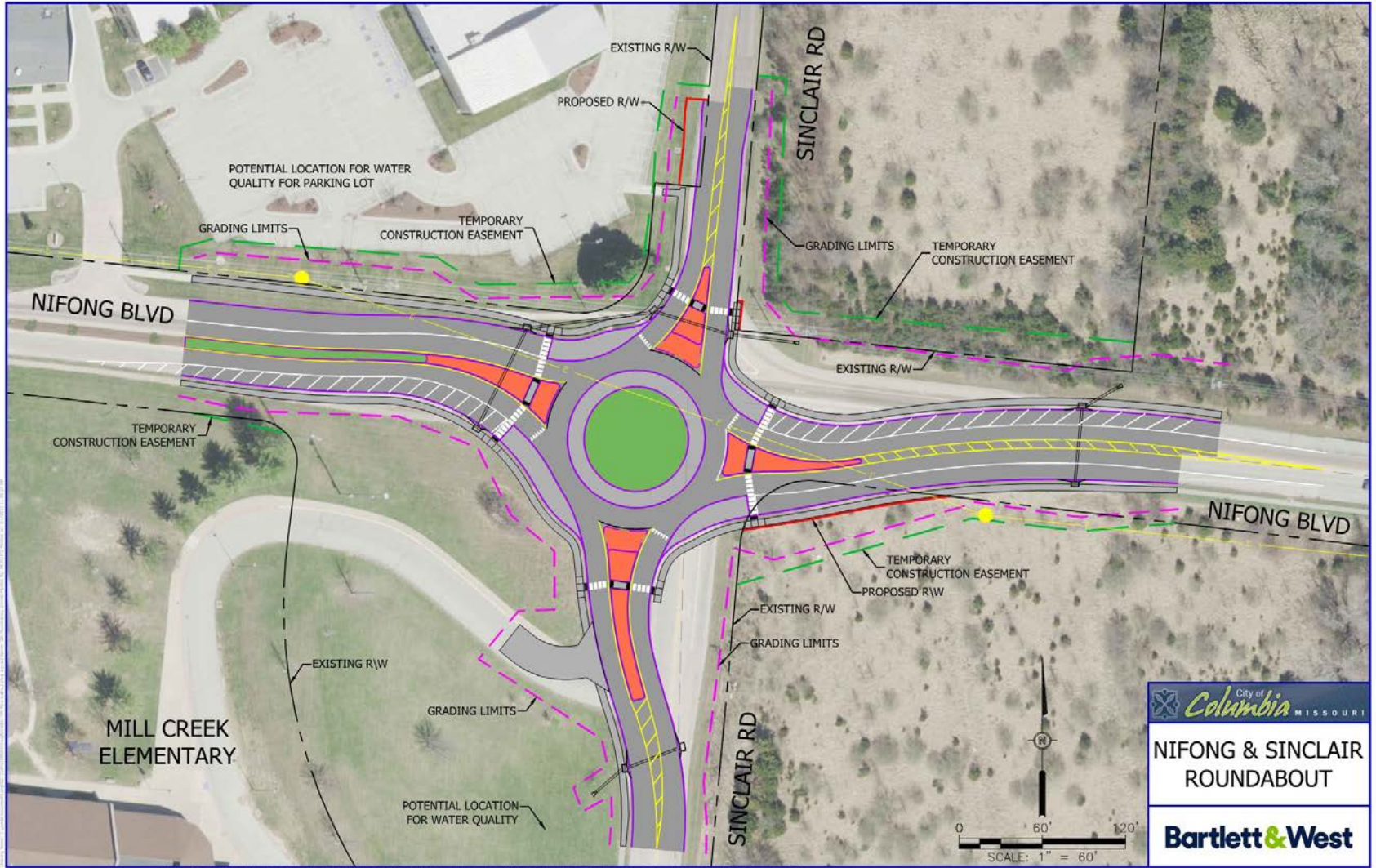
Right Turn Lanes



Right Turn Lanes



Deter Traffic

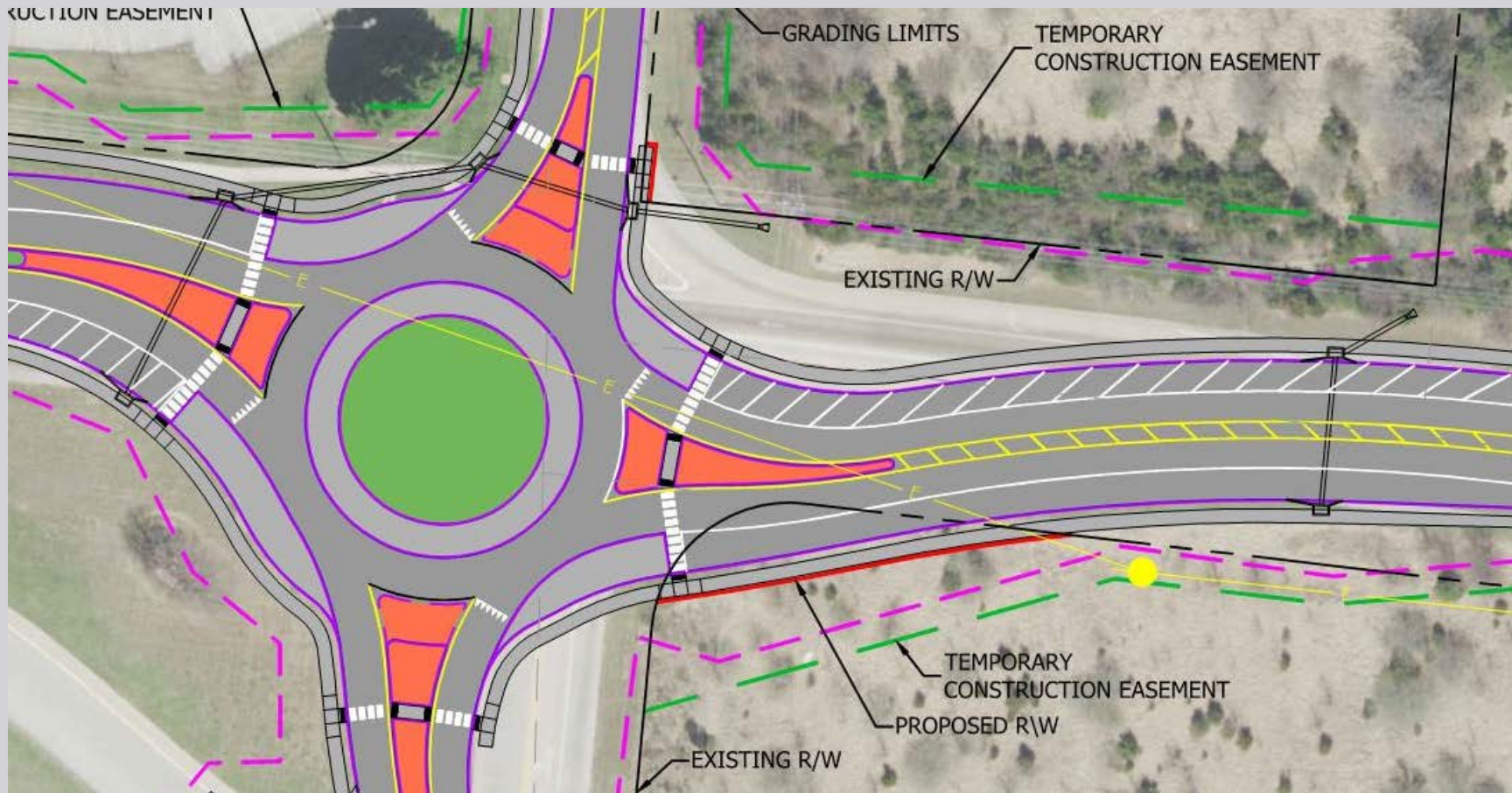


City of **Columbia** MISSOURI

**NIFONG & SINCLAIR
ROUNDBOUT**

Bartlett & West

Deter Traffic



Deter Traffic



Offset Sidewalks and Inlets



Offset Sidewalks and Inlets



Offset Sidewalks and Inlets

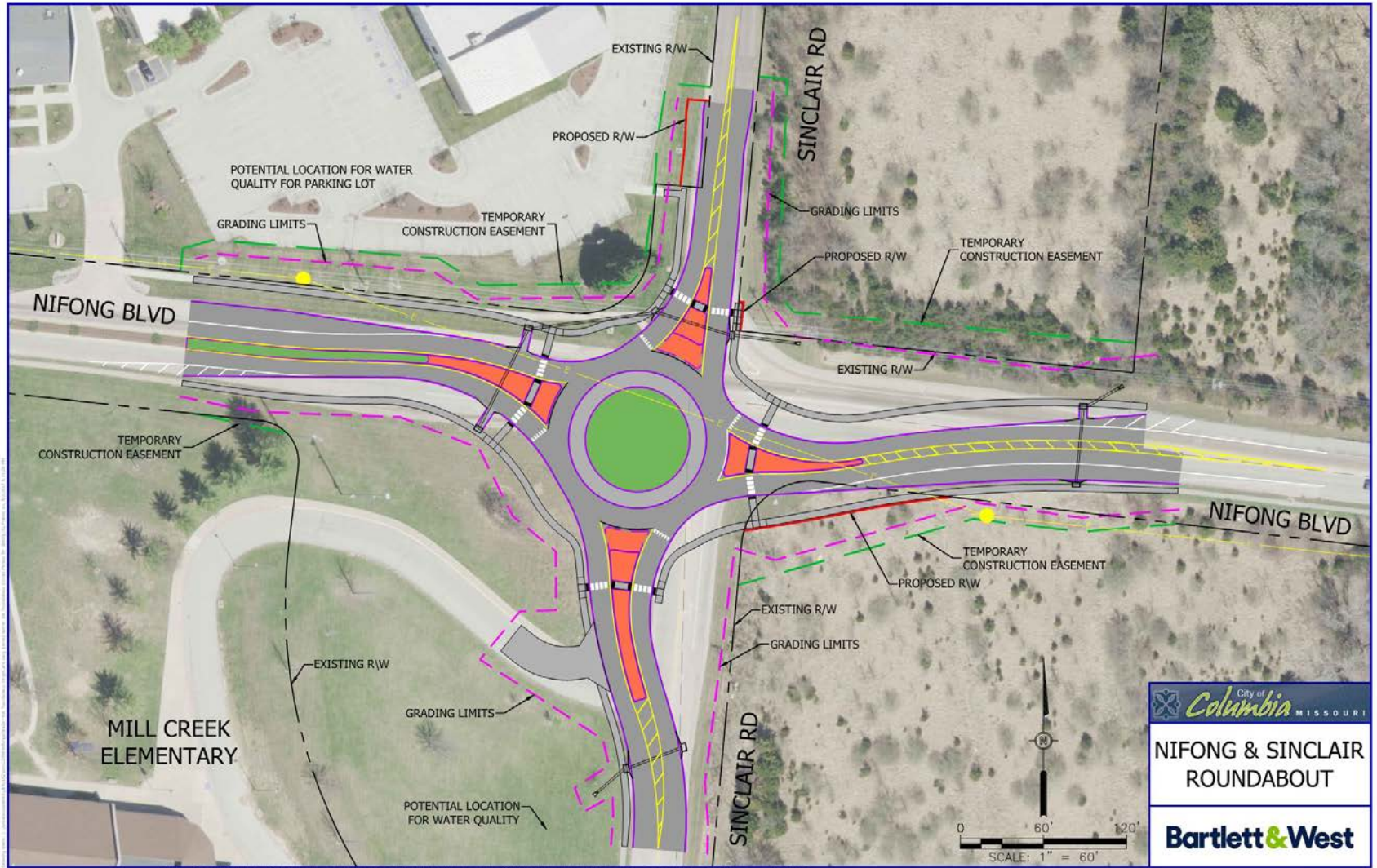


Expansion Costs

- **Single lane construction**
 - Removeable Aprons: \$1,161,000
 - Offset Sidewalks and Inlets: \$987,000
 - Cost Difference: \$174,000

- **Future expansion**
 - Truck apron removal: minimal
 - Additional lanes: \$193,000

Chosen Option



Takeaways

- Design for today, plan for the future
- Expand toward the outside
- Choose the method that works best for your site

Questions?