

March 6, 2018

New Interchange

I-69 and 106th Street

Fishers, Indiana



Need



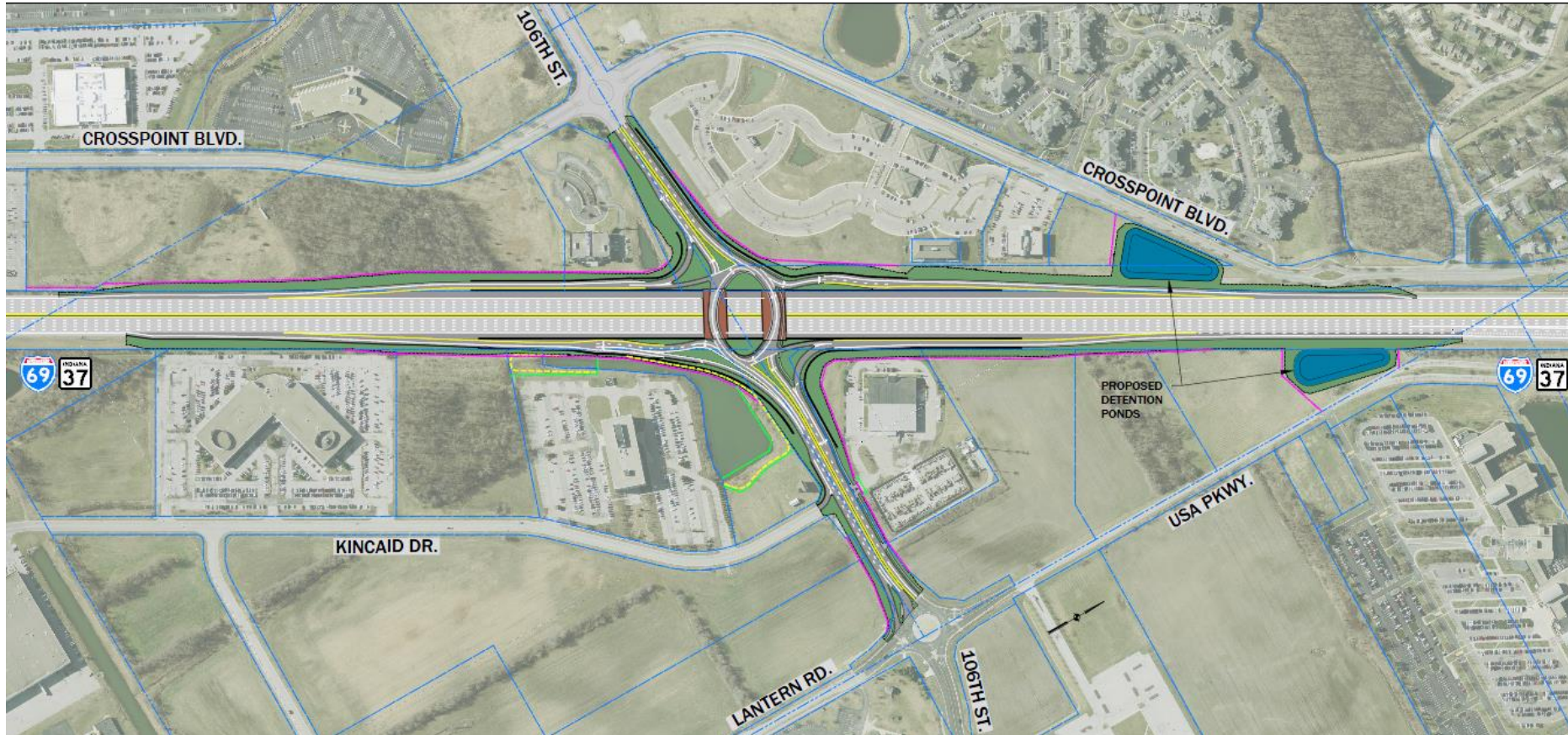
Why a new interchange?

- Identified in 1999 and 2008 Thoroughfare Plans
- Additional east/west corridor through Fishers
- Additional interstate access (grow commercial tax base)
- Heavy congestion at 96th and 116th
- Help defer improvements at other interchanges
- Provide additional options for emergency responders

Need



Why a new interchange?



Solution



How to start the project?

Traffic Study

- Confirm need
- Spacing of interchanges worked (barely)
- Little impact to interstate operations
- Improvement to adjacent interchanges

Funding

- INDOT approved with local support
- City of Fishers: \$8 million
- Hamilton County: \$2 million
- Overall budget: \$25 million

Solution



How to start the project?

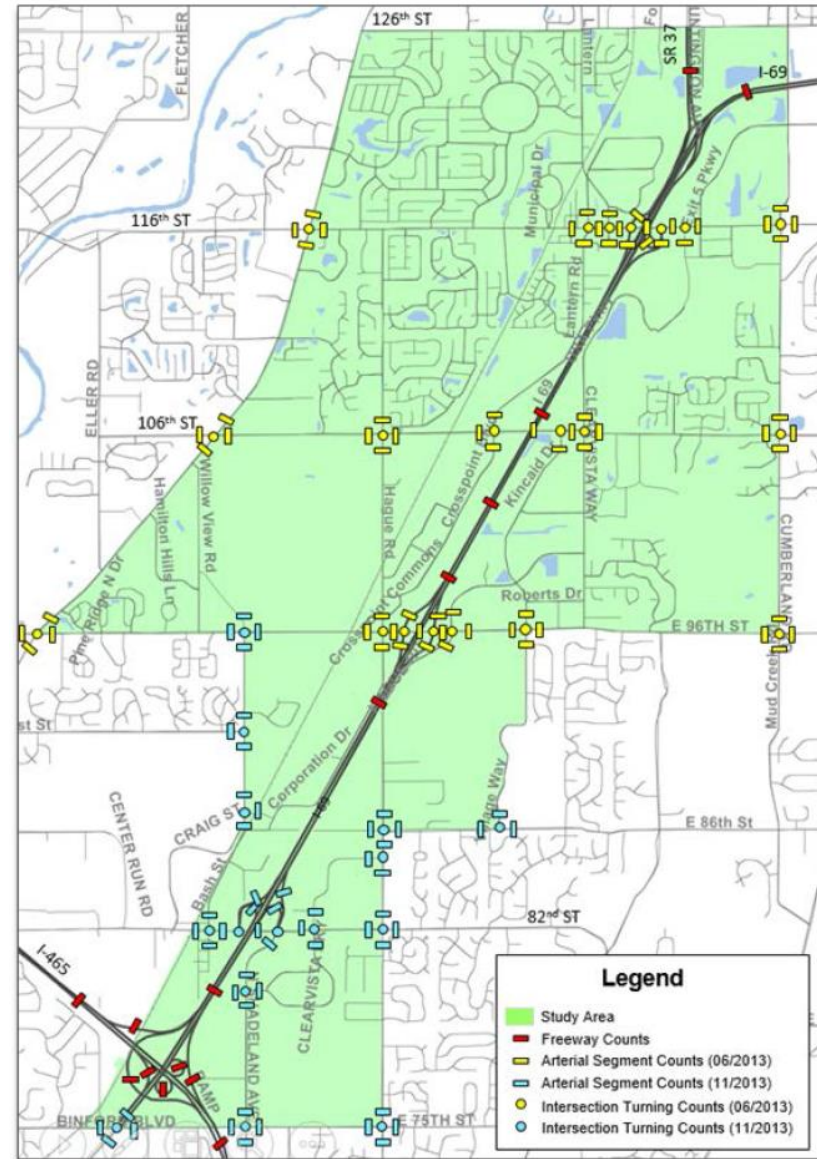
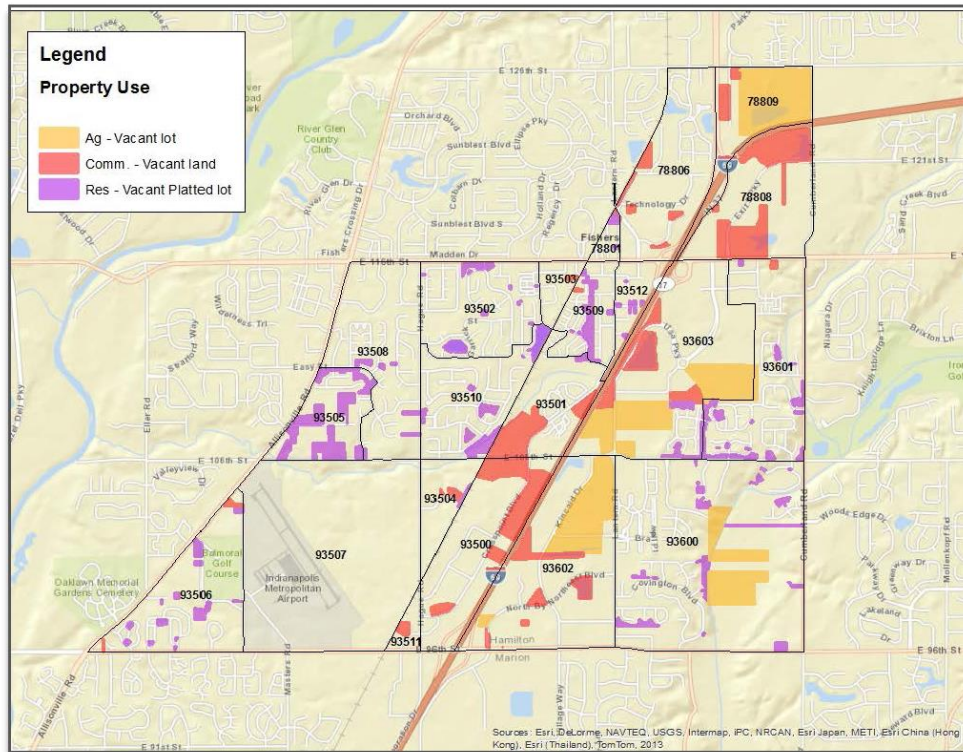


Solution



Interstate Access Document

- Land Use
- Counts



Solution



Interchange Access Document

Modeling

- MPO TransCAD travel demand model
- Transmodeler Traffic Simulation Model
- Capacity Analysis (HCS and SIDRA)

Results

- Tight Diamond: \$31.3 million
- Single Point: \$36 million
- Roundabout: \$33.9 million
- Diverging Diamond: \$35 million

Solution



Selected Interchange

Oval Roundabout

- Roundabouts at Crosspoint and USA Parkway
- INDOT, FHWA Indiana, FHWA Resource Center
- Gateway feature for City
- Most cost effective roundabout option

Still Budget Concerns!!





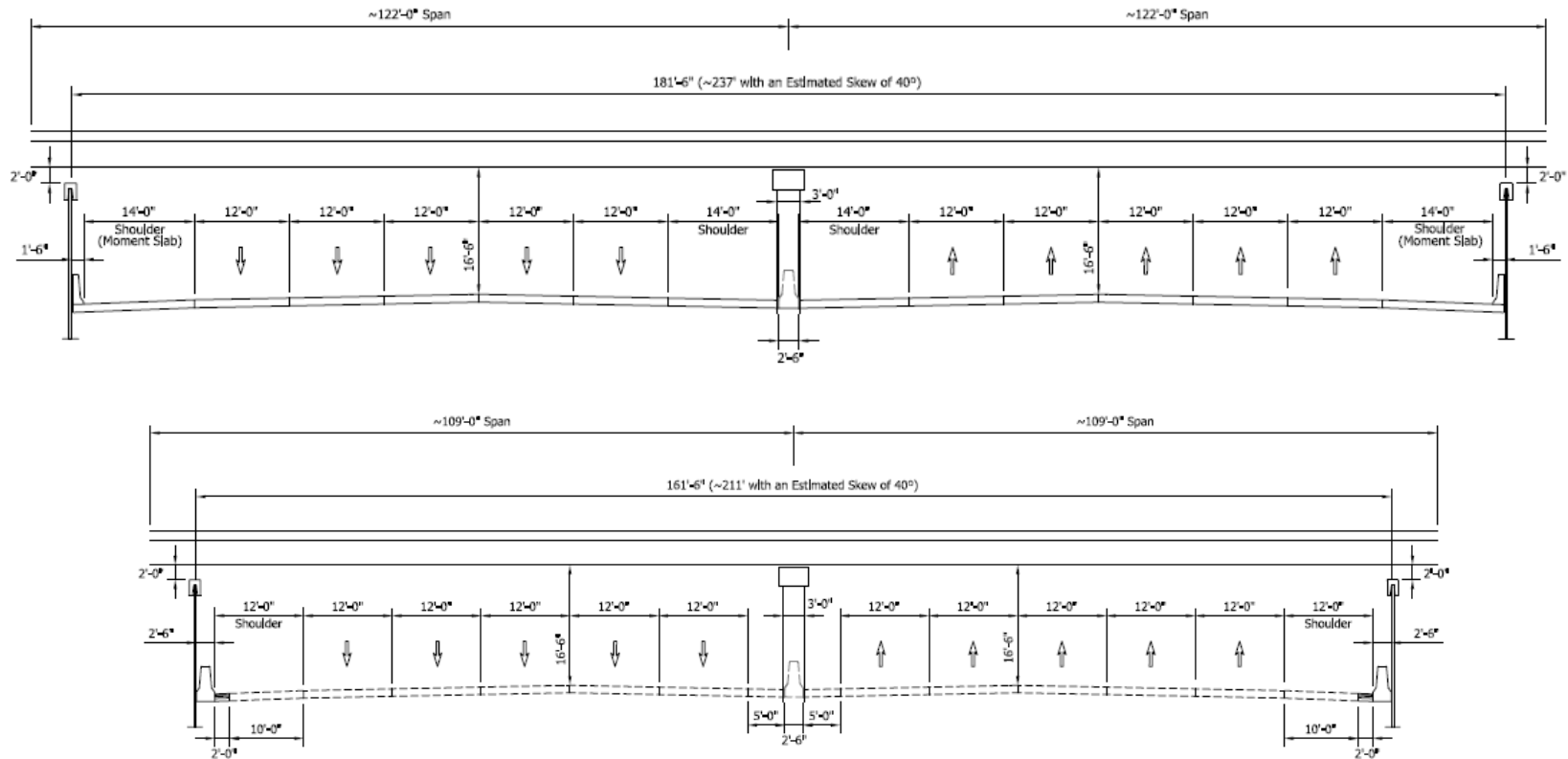


Cost Reduction



How to reduce costs?

- Reduce span length over I-69

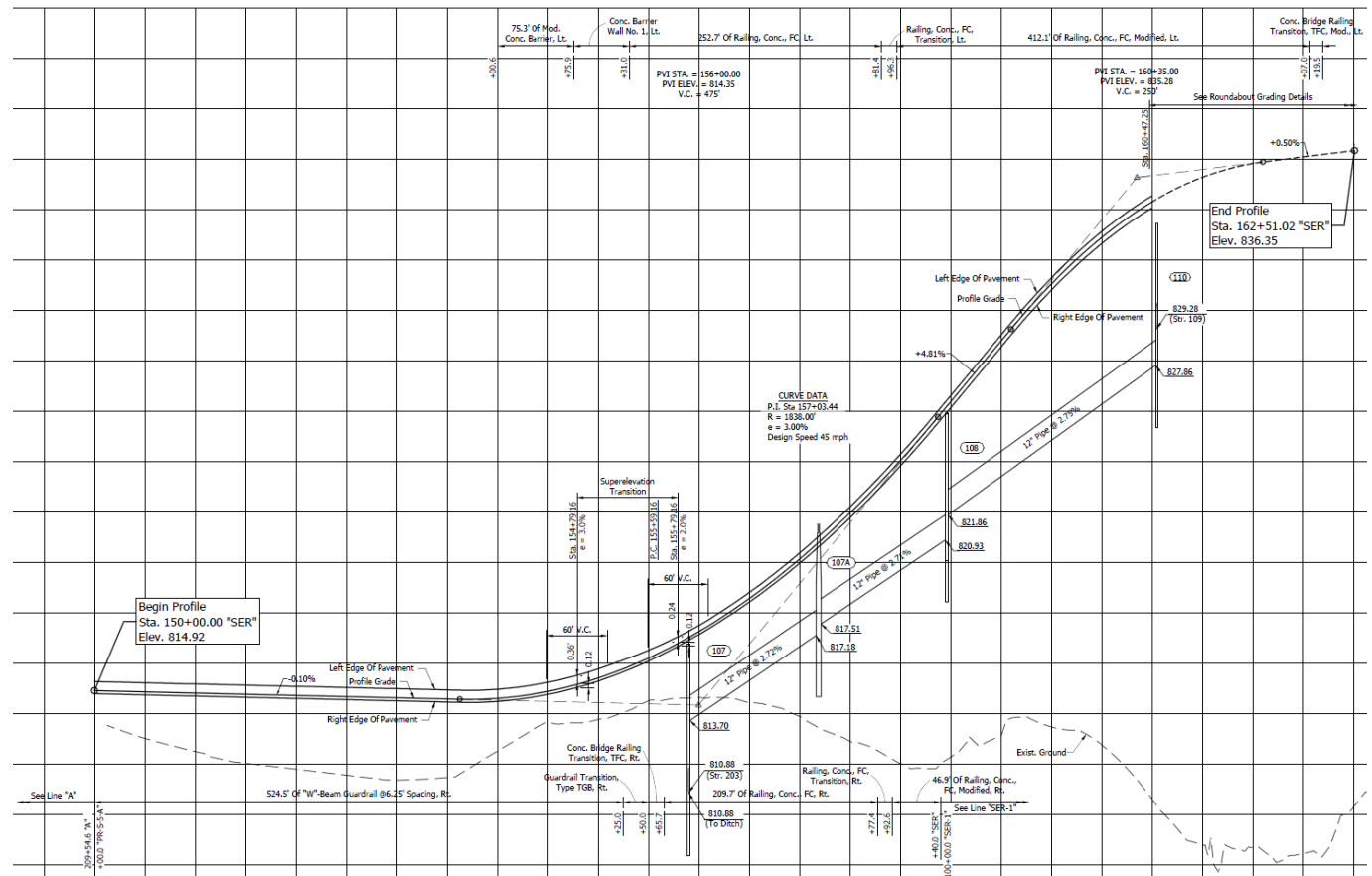


Cost Reduction



How to reduce costs?

- Maximize ramp grades

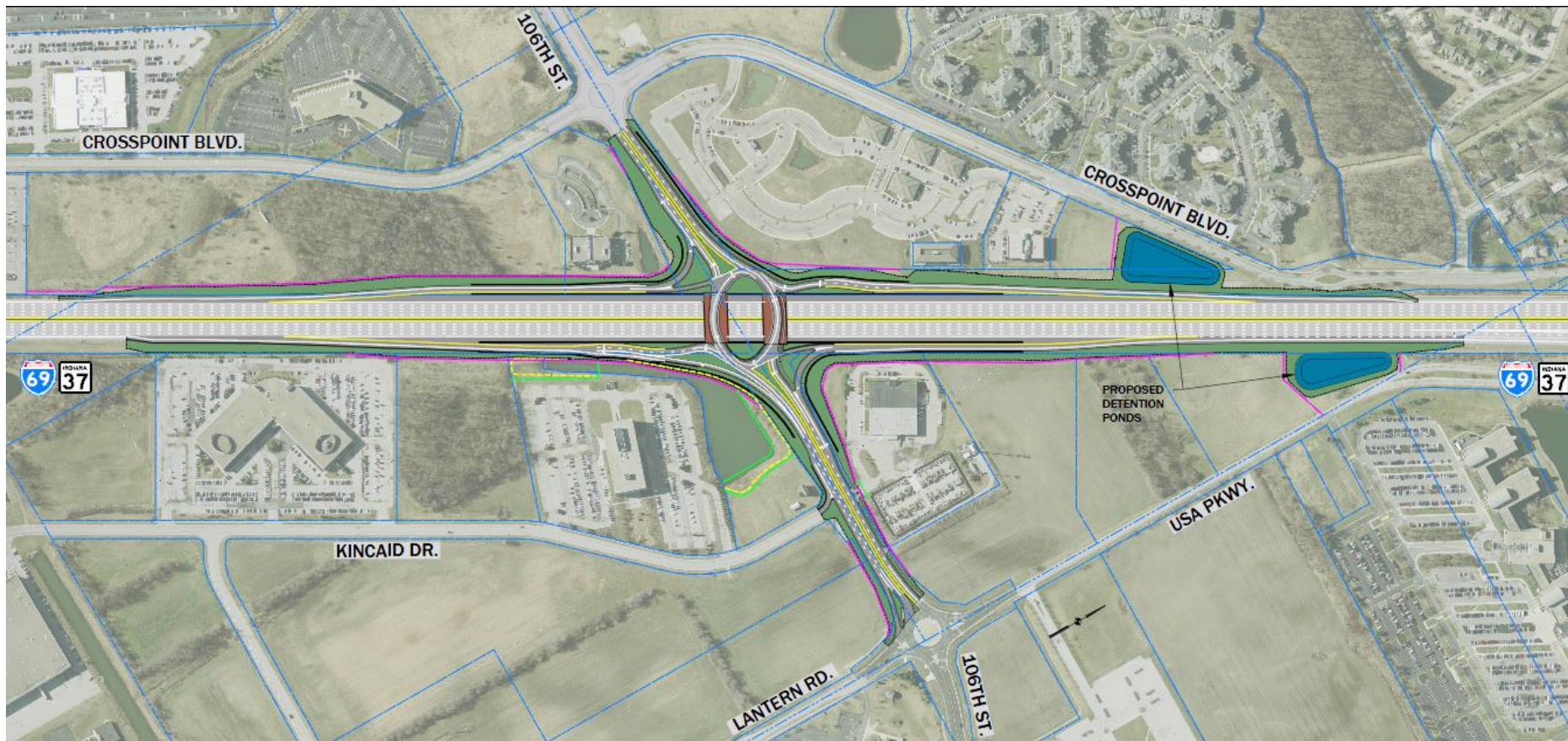


Cost Reduction



How to reduce costs?

- Reconfigure detention



Cost Reduction



How to reduce costs?

- Reduce ramp shoulders
- Tighten up bypass lane geometry
- Pedestrian Path on north side only
- 11 foot lanes on 106th Street
- Eliminate center curb
- Close 106th Street during construction

Budget reduced by \$3.0 million. Final costs \$30.9 million.


Inter-governmental agreement amended. INDOT and Fishers provided additional funding.

Cost Reduction



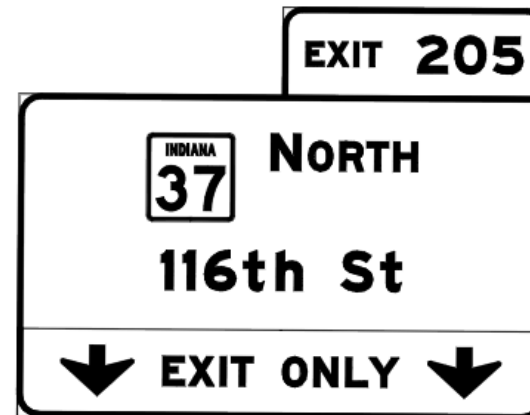
How to reduce costs?

- Signage and CD without barrier

106th St	1/2
116th St  NORTH	1 1/4
Campus Pkwy	6 1/4
Southeastern Pkwy	



IGDO-5



IGDO-6



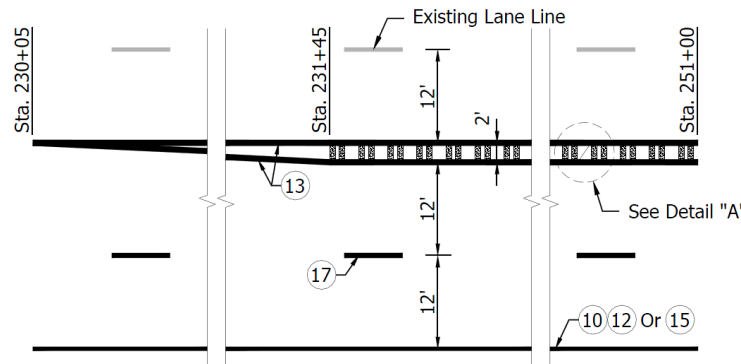
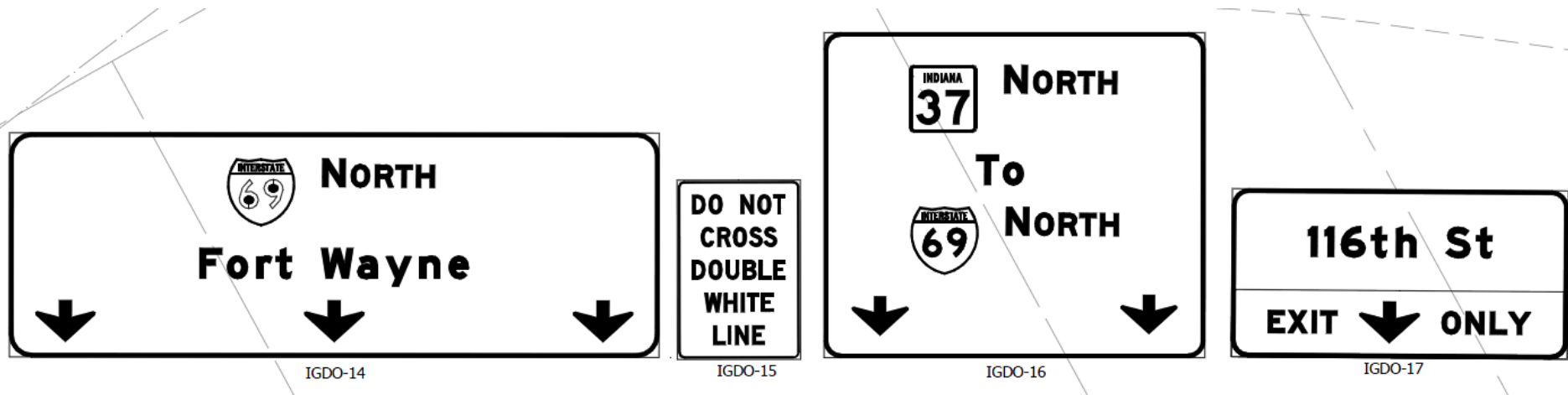
IGDO-7

Cost Reduction



How to reduce costs?

■ Signage and CD without barrier



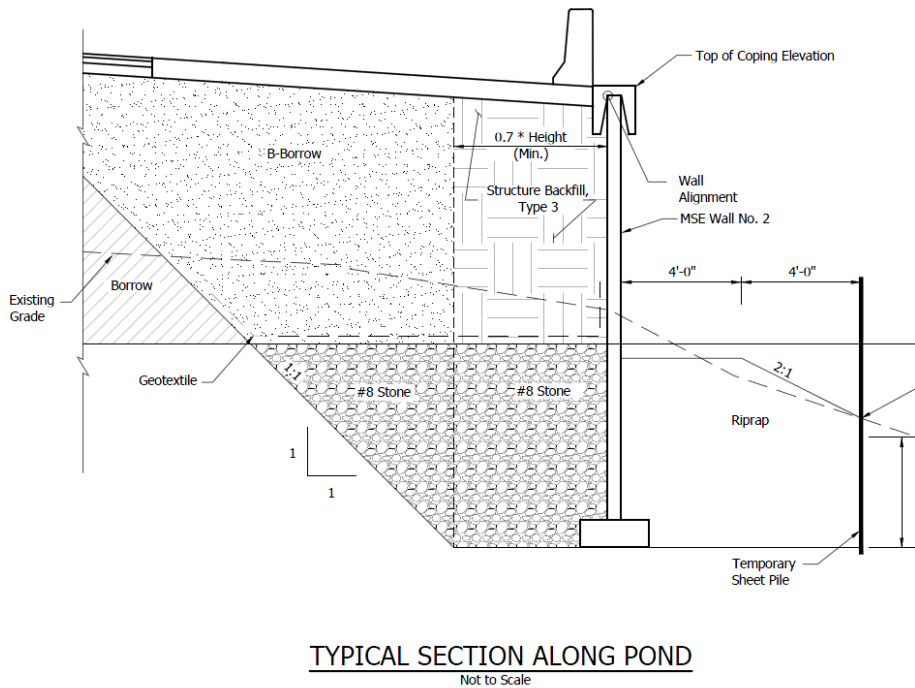
I-69 NB PAINTED CD

Challenges



What had to be overcome?

- Pond interaction w/ wall
- Pond mitigation



Challenges



What had to be overcome?

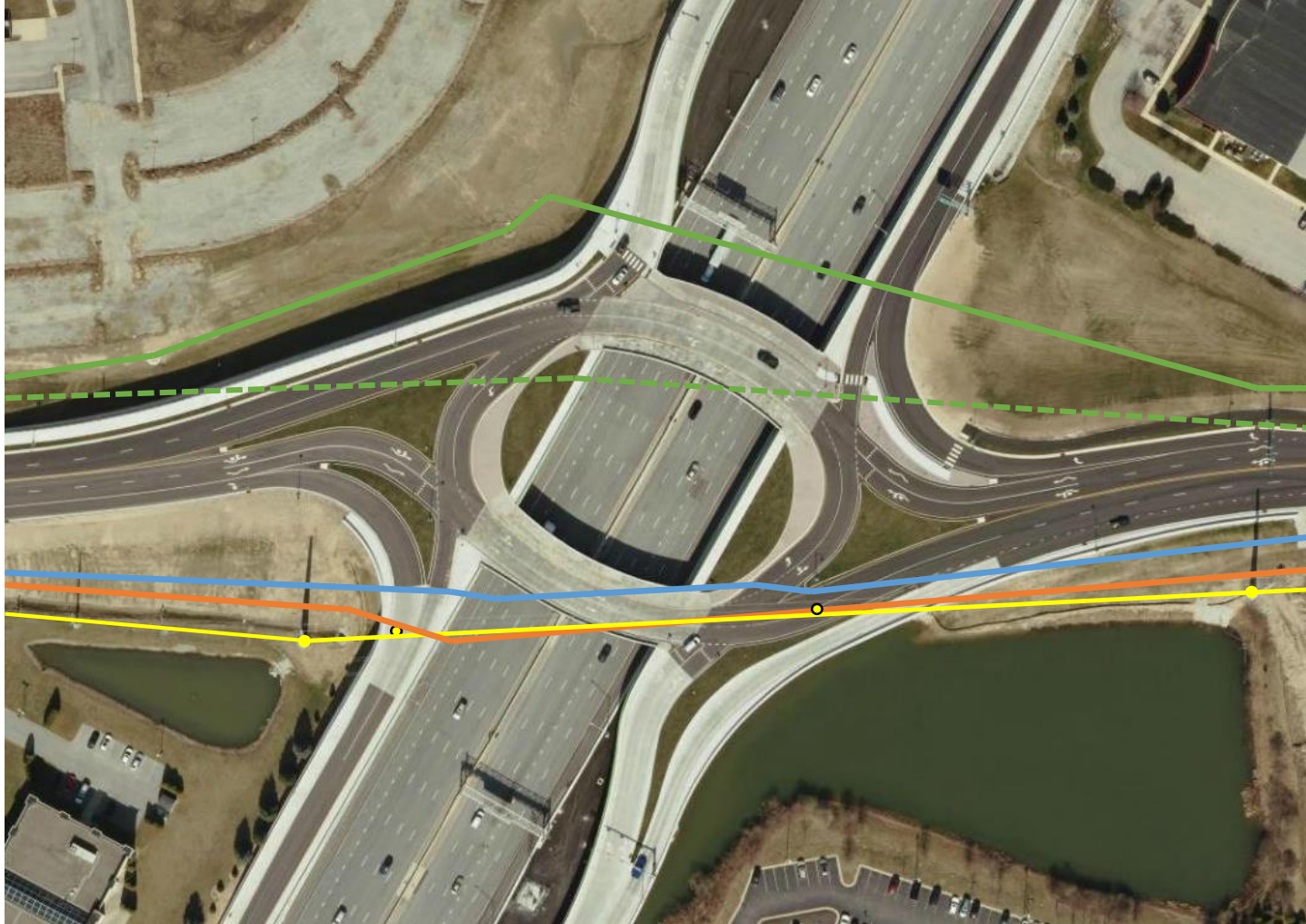
Utilities:

- Duke Transmission
- AT&T
- Water Main
- Sanitary Sewer Force Main Relocation

Challenges



What had to be overcome?



Challenges



What had to be overcome?

Utilities:

- Duke Transmission Line Relocation



Challenges



What had to be overcome?

Utilities:

- AT&T Duct in MSE Wall Fill

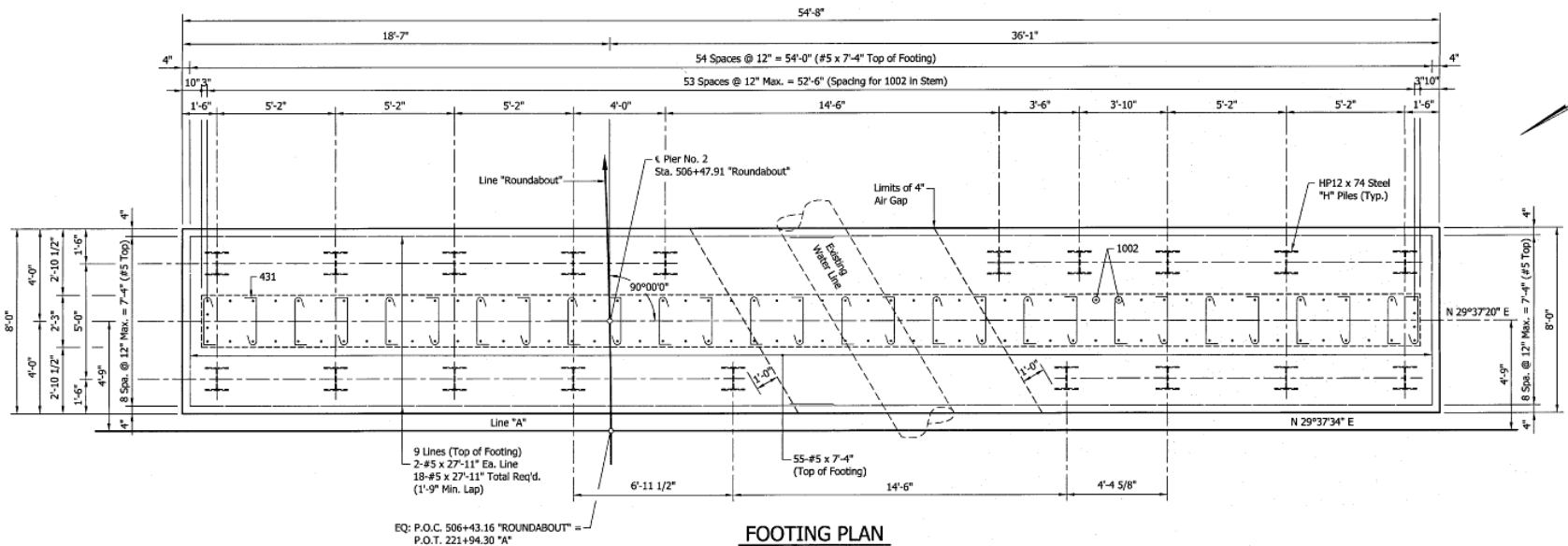


Challenges



What had to be overcome?

- Water Main Under Pier Foundation
 - Foundation designed so piles could be located around from the ex water main



Roundabout



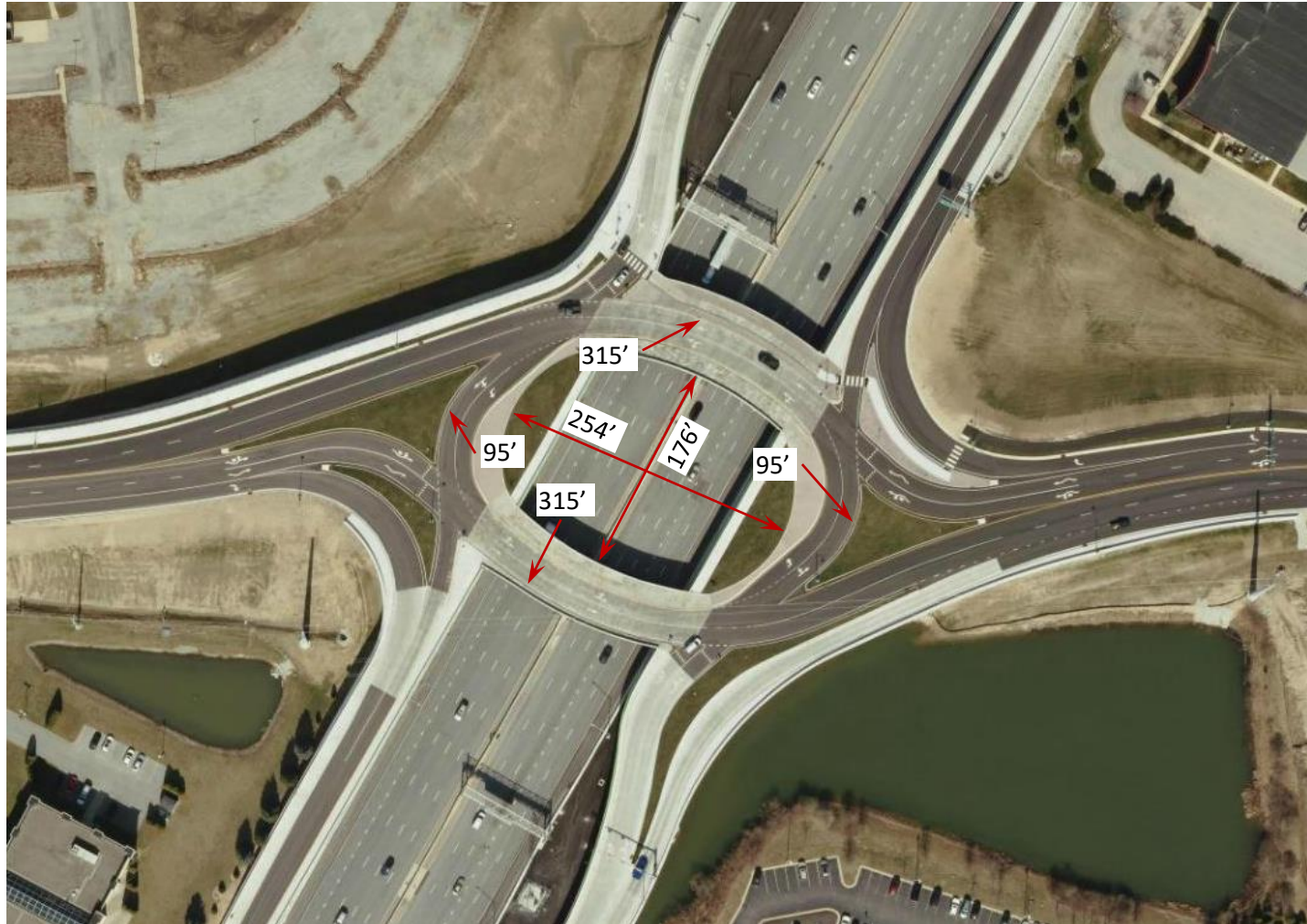
Orientation and Design Considerations



Roundabout



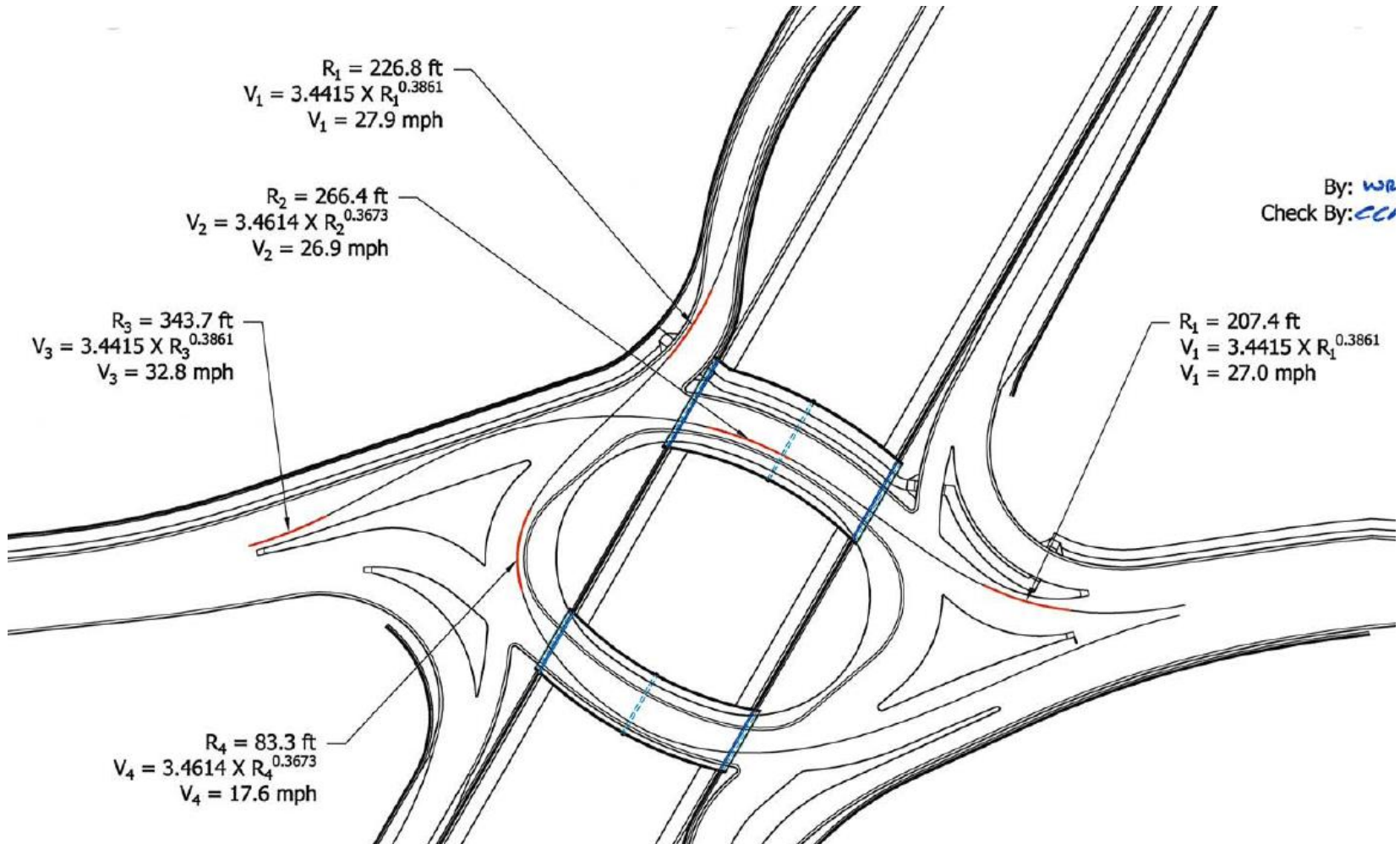
Dimensions



Roundabout



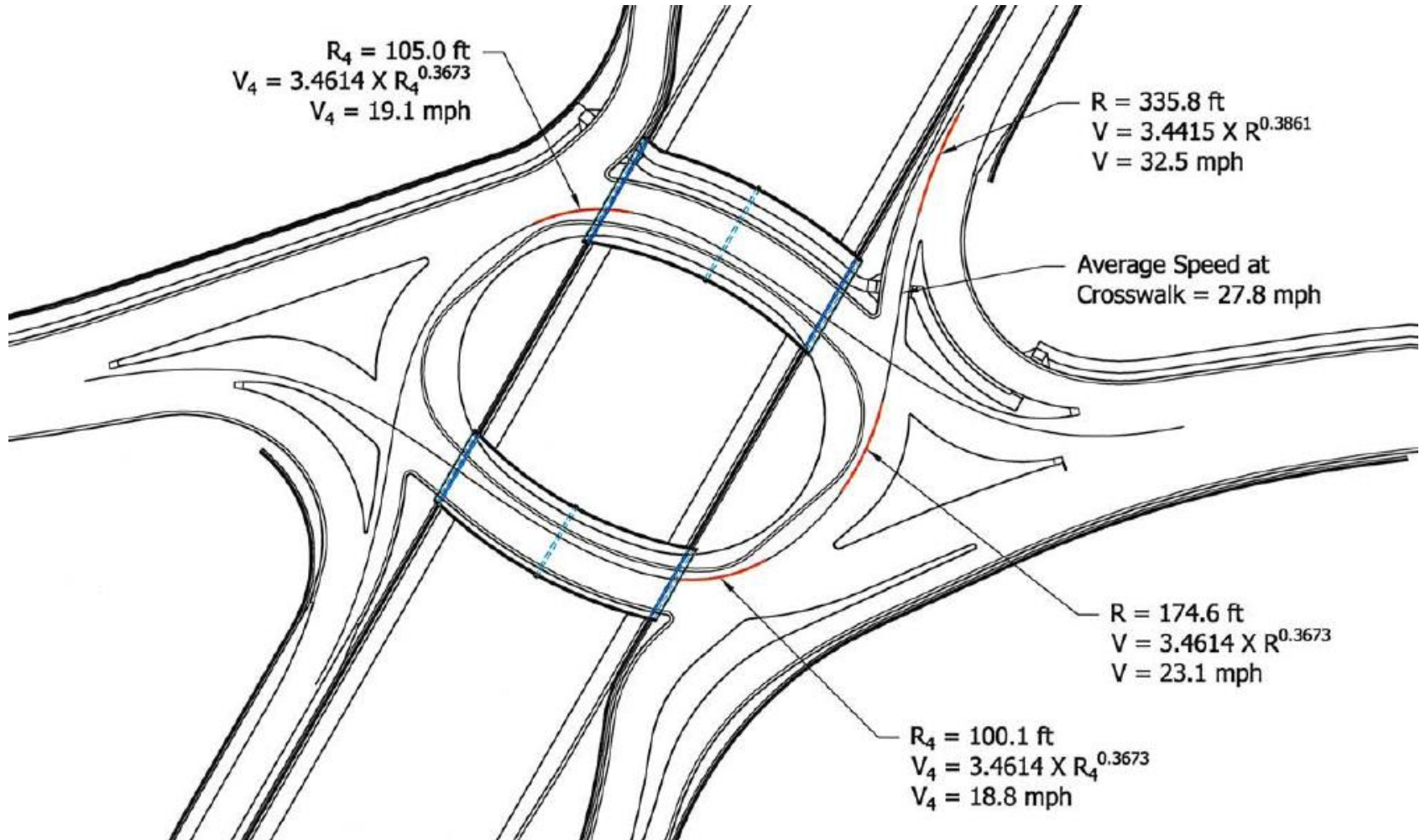
Fastest Path



Roundabout



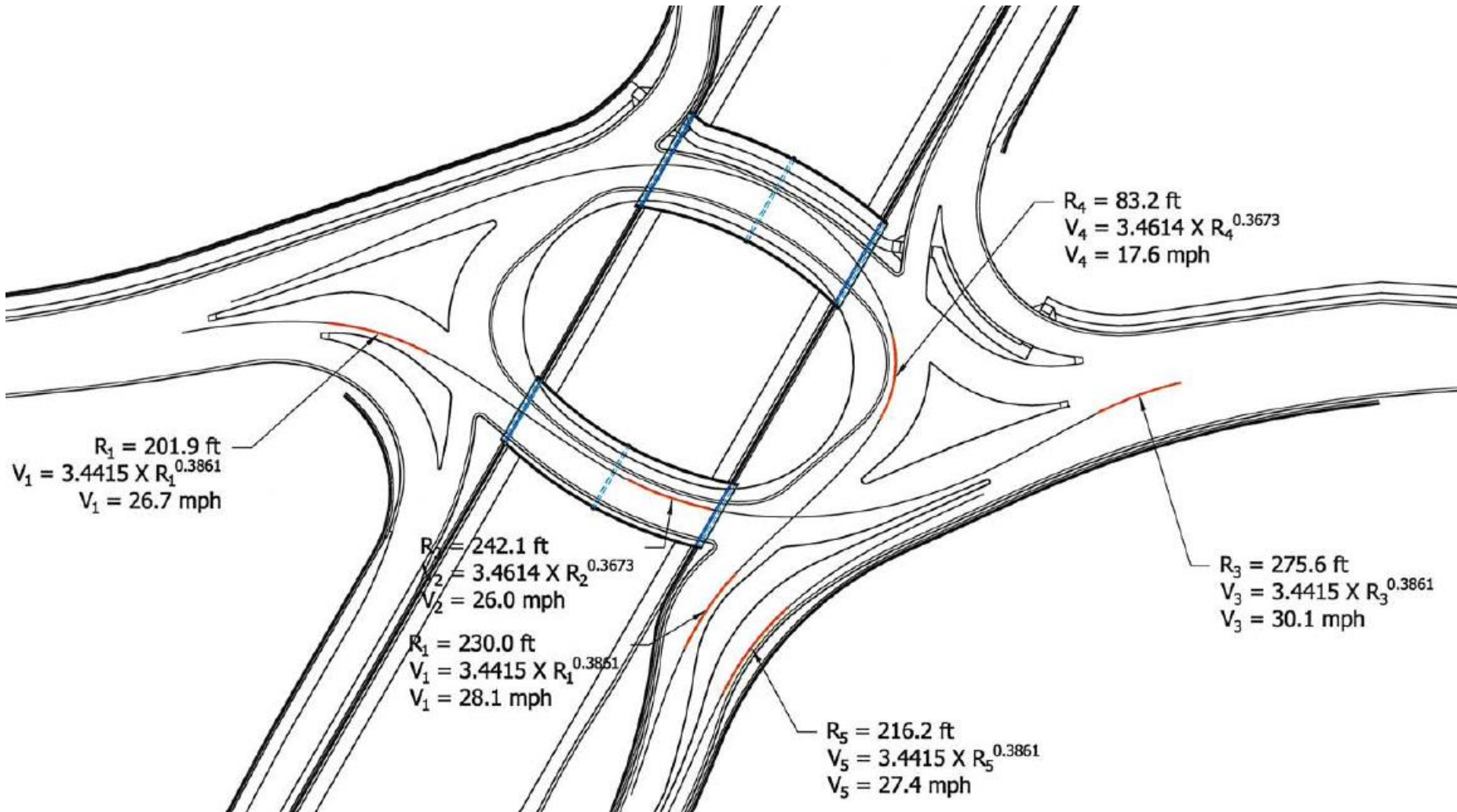
Fastest Path



Roundabout



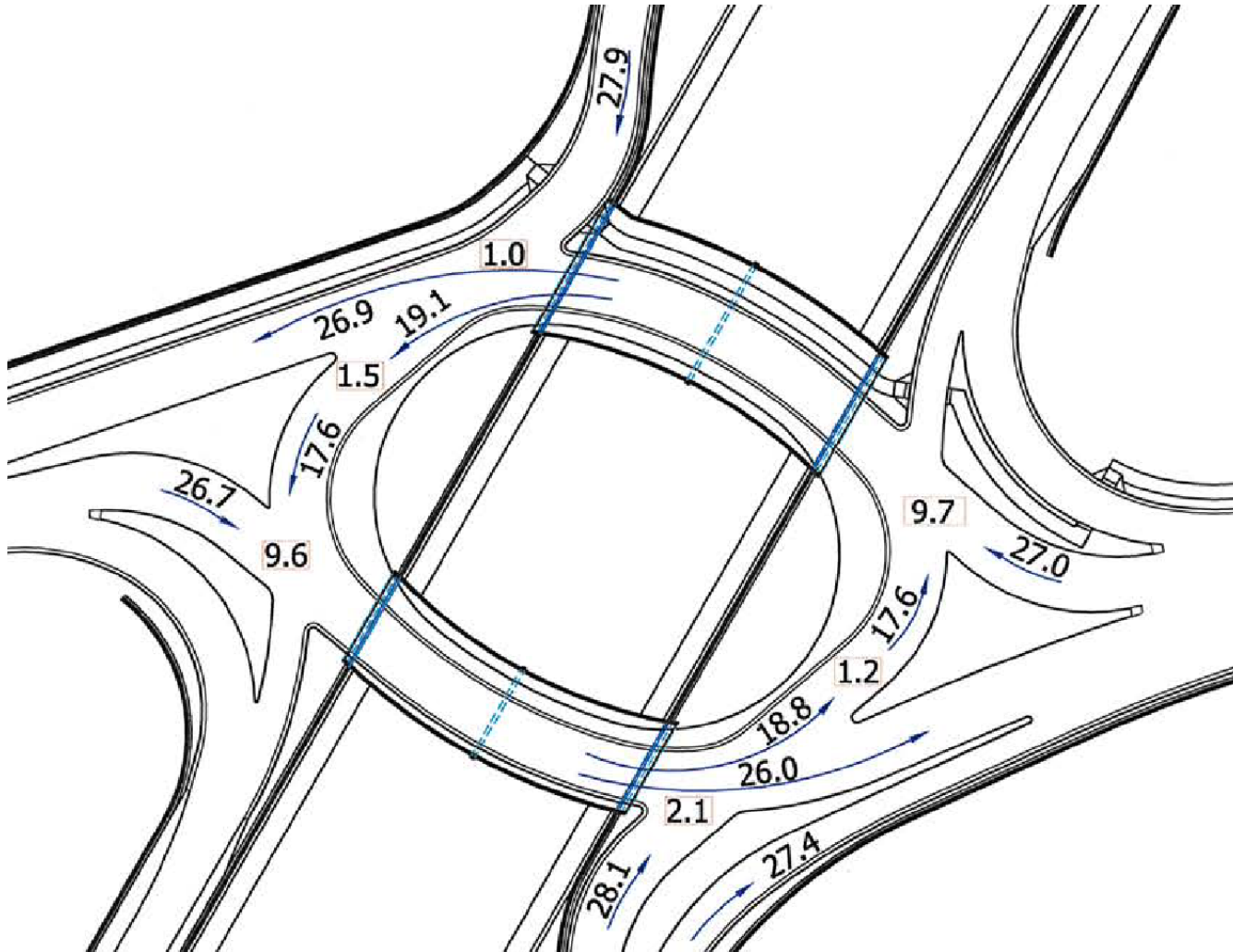
Fastest Path



Roundabout



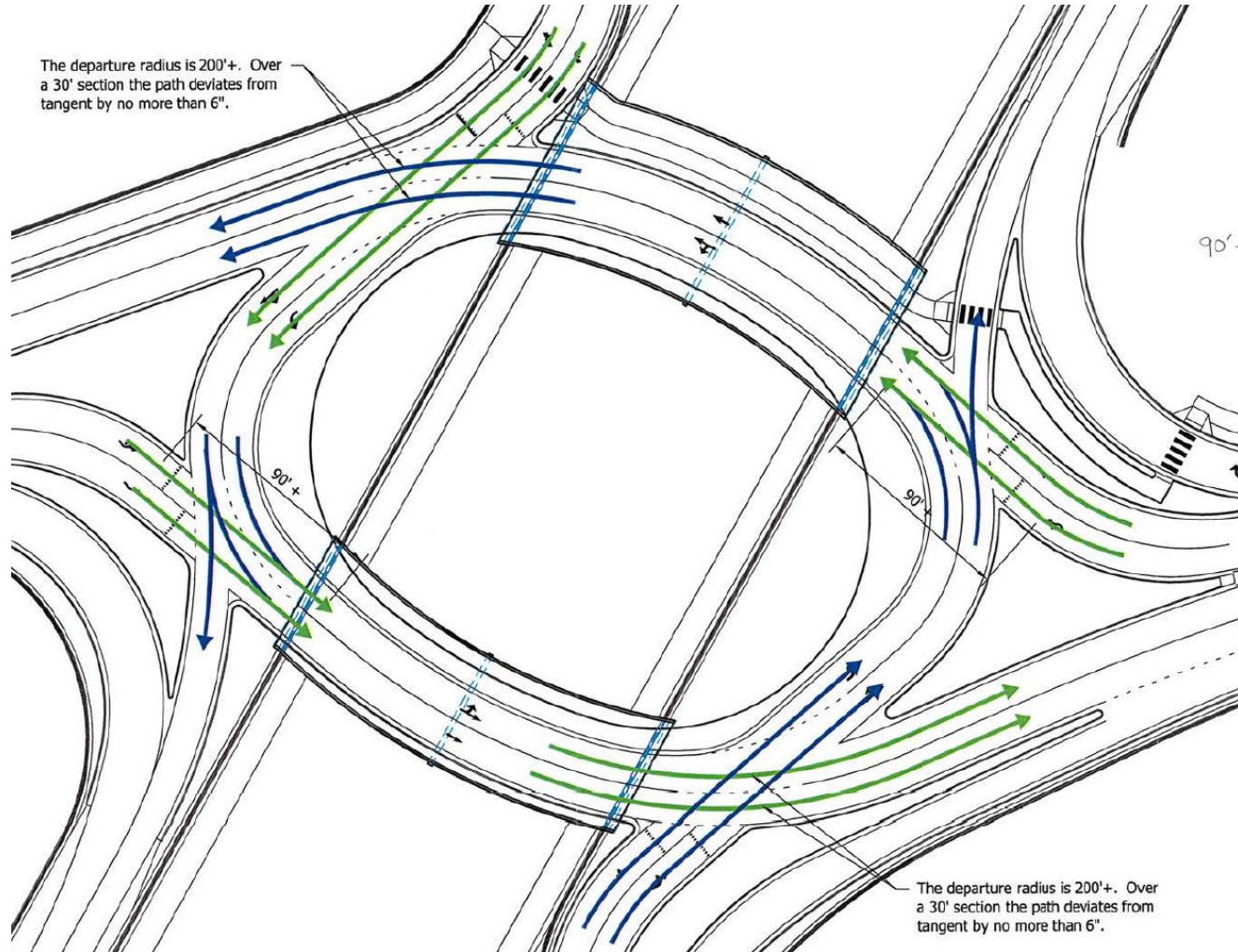
Speed differential



Roundabout



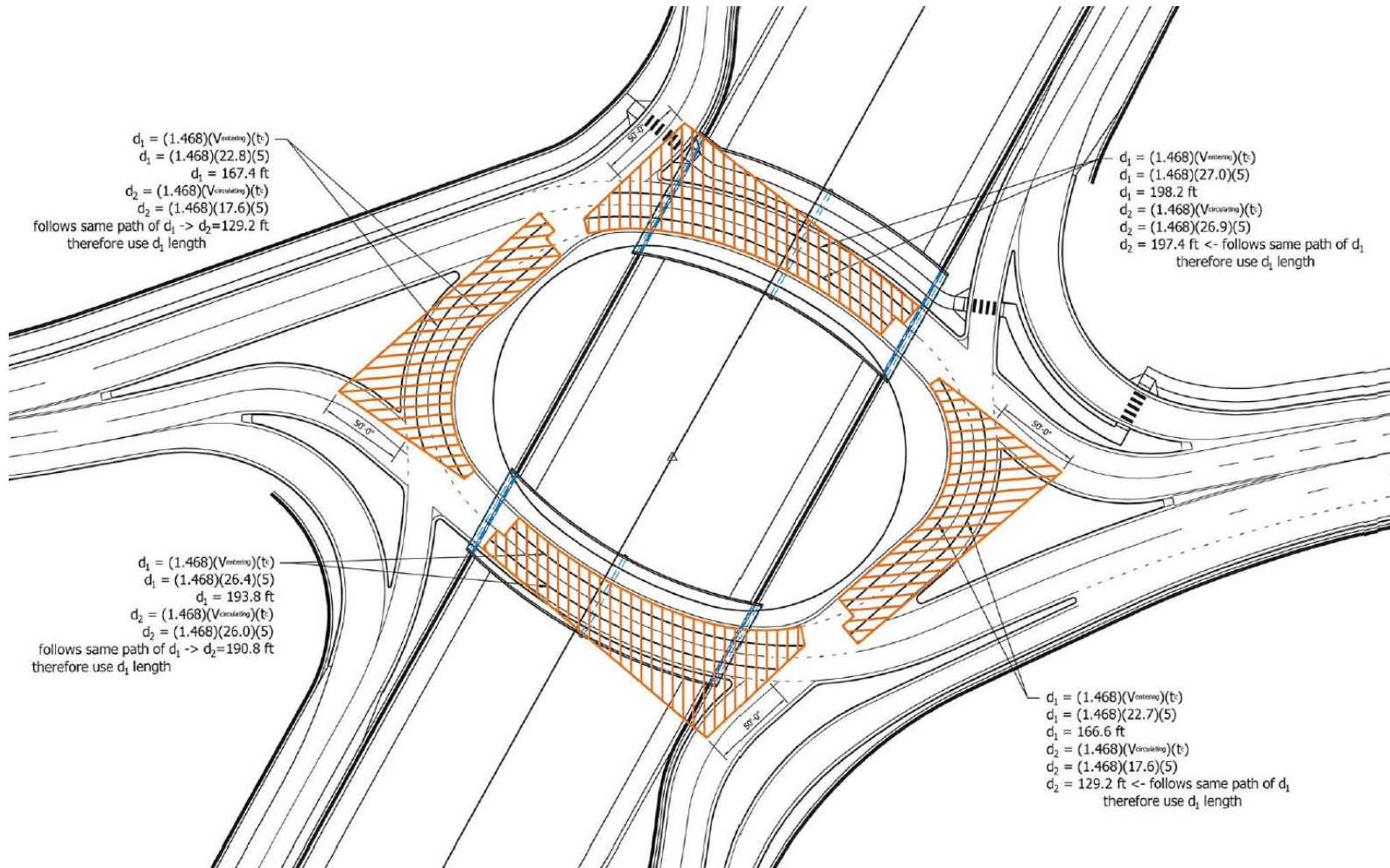
Path overlap



Roundabout



Sight distance



Operation



How does it work? – Only 3 accidents in 15 months of operation



Operation



I-69 and 106th Street

In Operation

Thank You!

For additional questions, please contact:

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FISHERS

EST. 1872

