



City of Perrysburg
SR 25 and I-475





ODOT District 2 | City of Perrysburg
DGL Consulting Engineers
The EDGE Group | E.S. Wagner



**SR 25 North of I-475
Average Daily Traffic**

2000	13,220
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13,220



**SR 25 South of I-475
Average Daily Traffic**

2000	18,220
------	--------

18,220





**SR 25 North of I-475
Average Daily Traffic**

2000	13,220
2006	13,430

**SR 25 South of I-475
Average Daily Traffic**

2000	18,220
2006	24,460



**SR 25 North of I-475
Average Daily Traffic**

2000	13,220
2006	13,430
2012	26,651

**SR 25 South of I-475
Average Daily Traffic**

2000	18,220
2006	24,460
2012	32,700



**SR 25 North of I-475
Average Daily Traffic**

2000	13,220
2006	13,430
2012	26,651
2014	26,784

**SR 25 South of I-475
Average Daily Traffic**

2000	18,220
2006	24,460
2012	32,700
2014	31,975



**SR 25 North of I-475
Average Daily Traffic**

2000	13,220
2006	13,430
2012	26,651
2014	26,784
2016	30,000

**SR 25 South of I-475
Average Daily Traffic**

2000	18,220
2006	24,460
2012	32,700
2014	31,975
2016	34,975



**SR 25 North of I-475
Average Daily Traffic**

2000	13,220
2006	13,430
2012	26,651
2014	26,784
2016	30,000
2018	32,072

**SR 25 South of I-475
Average Daily Traffic**

2000	18,220
2006	24,460
2012	32,700
2014	31,975
2016	34,975
2018	32,870



Former Traffic Conditions

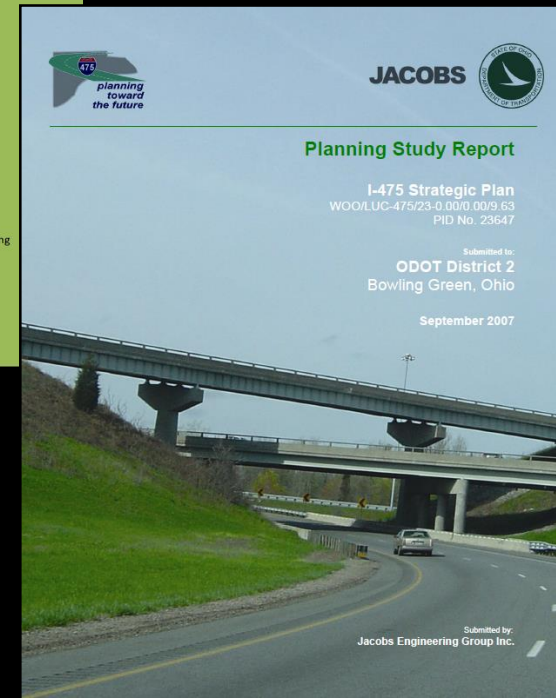
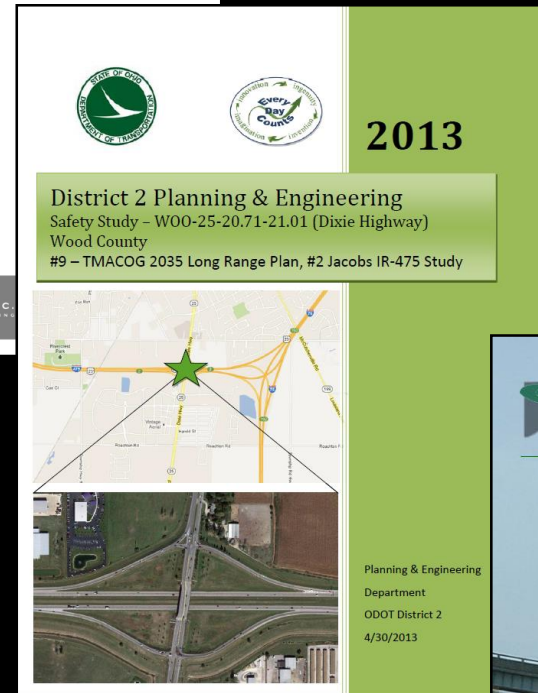
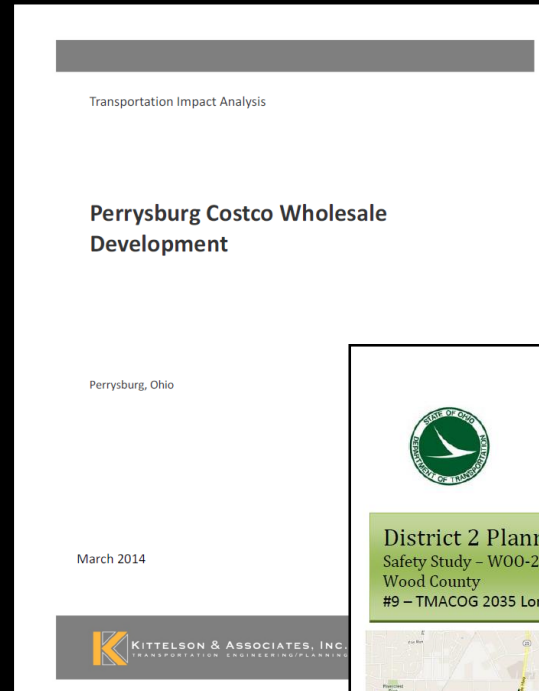


Impact and Modification Studies

I-475 Strategic Plan, Sept '07
Jacobs Engineering Group, Inc.

Safety Study – WOO-25-20.71-
21.01 (Dixie Highway), April '13
ODOT D2 Planning & Engineering

Perrysburg Costco Wholesale
Development, March '14
Kittelson & Associates, Inc.



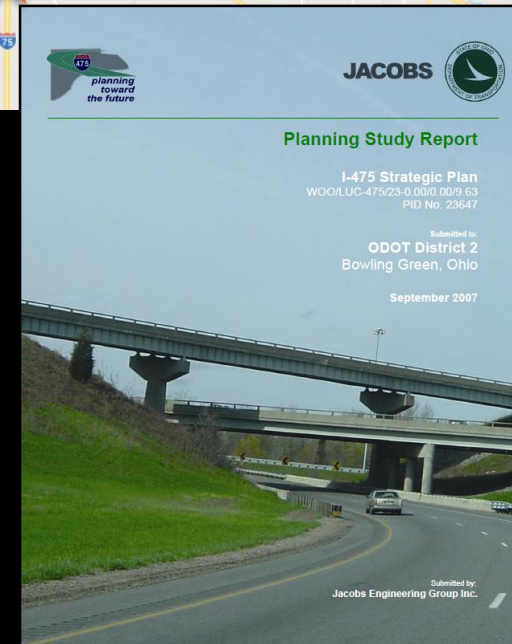
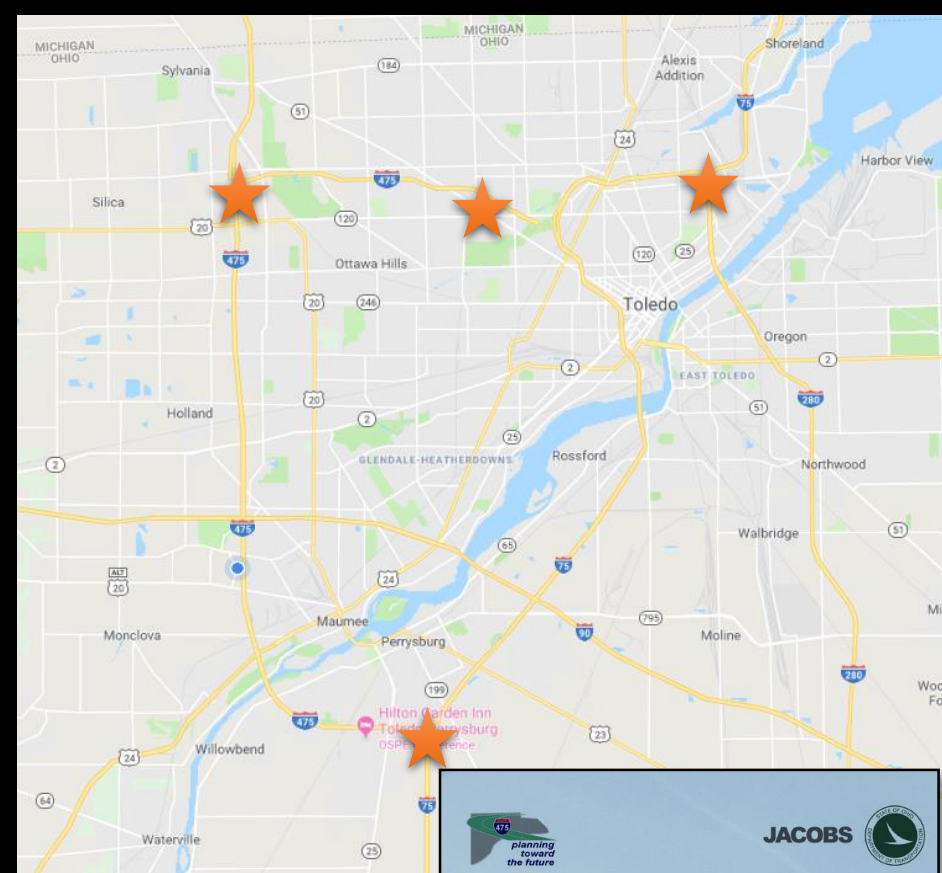
I-475 Strategic Plan

Define an overall strategy for improvement of I-475/US-23 System

Steering Committee with 17 local organizations, agencies and government entities

A few major study areas:

- I-475/I-75 Systems Interchange in Wood County
- I-475/Douglas Road Interchange in Lucas County
- I-280/I-75 Systems Interchange in Lucas County
- I-475/US-23 Systems Interchange in Lucas County



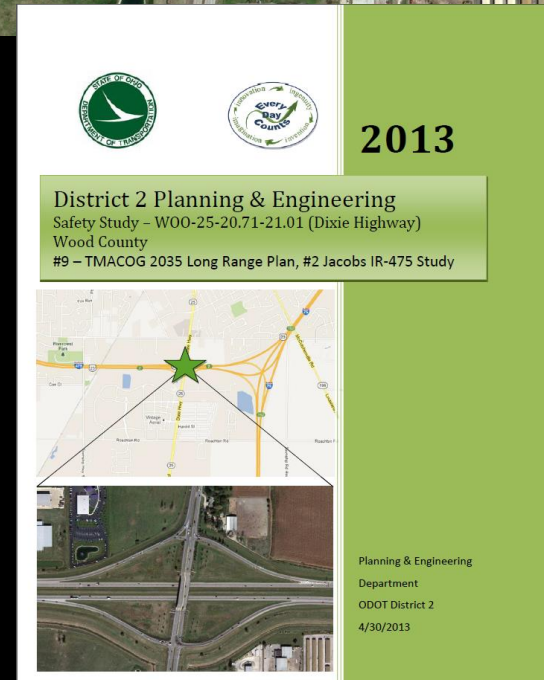
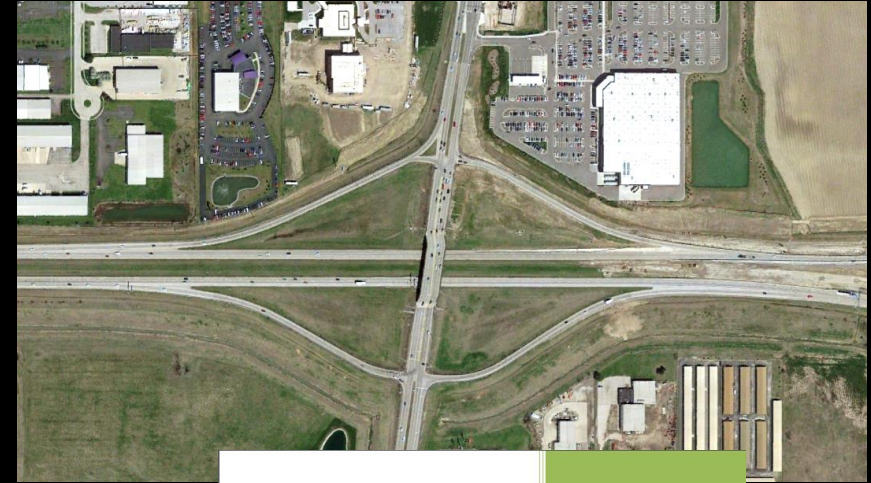
Safety Study

WOO-25-20.71-21.01 (Dixie Highway)

Evaluated the existing safety conditions and identify potential countermeasures

- Congestion causing ramp backups onto mainline I-475
- Left turns from SR-25 onto ramps backup through turn lanes
- No pedestrian facilities

182 crashes between Jan '09 – Dec '11



Five Proposed Alternatives

Diverging Diamond

Partial Cloverleaf

Displaced Left Turn

Roundabout

Existing – Keep Diamond
Interchange





Project Scope

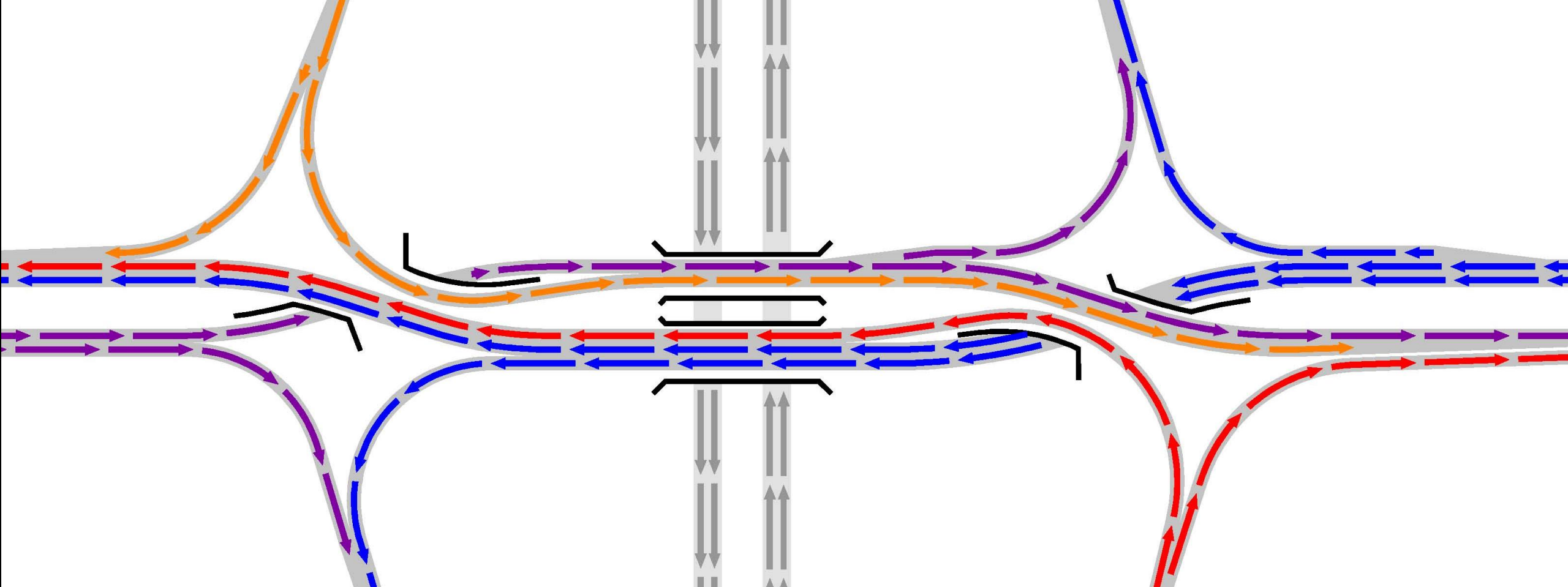
Modify existing interchange

Utilize existing structure

Successfully maintain traffic

Accommodate pedestrians & cyclists

Minimize right of way acquisitions



Diverging Diamond Interchange: a type of diamond interchange in which two directions of traffic on the non-freeway road cross to the opposite side on both sides of the bridge at the freeway.



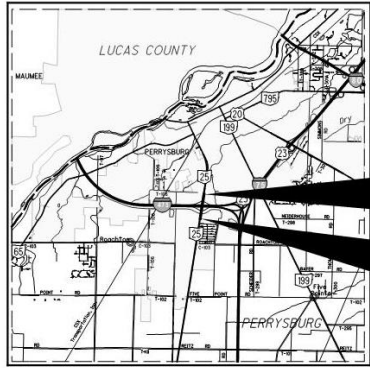
National Diverging Diamond Locations



Diverging Diamond Locations in Ohio



SR 25 and I-475



PORTION TO BE IMPROVED	-----
INTERSTATE HIGHWAY	-----
STATE & FEDERAL ROUTES	-----
COUNTY ROADS	-----
TOWNSHIP AND OTHER ROADS	-----

DESIGN DESIGNATION SR 25

CURRENT ADT (2015)	30770
DESIGN YEAR ADT (2033)	36525
DESIGN HOURLY VOLUME (2033)	3653
DIRECTIONAL DISTRIBUTION	50%
TRUCKS (24 HOUR B&C)	4%
DESIGN SPEED	VARIES (40-30 MPH)
LEGAL SPEED	40 MPH
DESIGN FUNCTIONAL CLASSIFICATION	MINOR ARTERIAL (URBAN)
NHS PROJECT	N/O

DESIGN EXCEPTIONS

HORIZONTAL ALIGNMENT (RAMPS A E-N, B S-E, C W-S & D N-W)	
SUPERELEVATION RATES (RAMPS A E-N, B S-E, C W-S & D N-W)	

APPROVAL DATES **SHEET NUMBERS**

6/16/2015	2-2
6/16/2015	237-244

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
WOO-25-20.70
PART 1
 CITY OF PERRYSBURG
 WOOD COUNTY

INDEX OF SHEETS

TITLE SHEET	1	CROSS SECTIONS - RAMP B N-E	163-180
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GENERAL NOTES	24-26	CROSS SECTIONS - RAMP C W-S	199-205
MAINTENANCE OF TRAFFIC	27-69, 69A, 70-75	CROSS SECTIONS - RAMP C W-N	206-212
GENERAL SUMMARY	76-79	CROSS SECTIONS - RAMP D S-W	213-231
SUB SUMMARY	80-84	CROSS SECTIONS - RAMP D N-W	232-241
PROJECT SITE PLAN	85-86	GRADING DETAILS	242-249
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PLAN AND PROFILE - RAMP A E-S	97-99	CONCRETE MEDIAN DETAIL	272-273
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PLAN AND PROFILE - RAMP B N-E	101-102	UNDERDRAIN DETAIL	275
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PLAN AND PROFILE - RAMP C W-S	106	TRAFFIC CONTROL	280-310
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PROJECT DESCRIPTION

IMPROVEMENT OF 0.44 MILES OF STATE ROUTE 25 BY WIDENING ROADWAY TO CONSTRUCT A DIVERGING DIAMOND INTERCHANGE. WORK ALSO INCLUDES LIGHTING AND AND TRAFFIC CONTROL (PAVEMENT MARKING, SIGNING AND SIGNALS).

PROJECT EARTH DISTURBED AREA = 18.9 ACRES

ESTIMATED CONTRACTOR EARTH DISTURBED AREA = 3.25 ACRES

NOTICE OF INTENT EARTH DISTURBED AREA = 22.15 ACRES

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2013 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVED THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 26, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

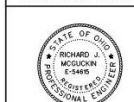
UNDERGROUND UTILITIES
 CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.

OHIO Utilities Protection SERVICE
 (Non-members must be called directly)
 OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE
1-800-925-0988

CALL BEFORE YOU DIG
1-800-362-2764

PLAN PREPARED BY:
 DGL CONSULTING ENGINEERS
 3455 BRIARFIELD BLVD - STE E
 MAUMEE, OH 43537
 419-535-1015

ENGINEERS SEAL:



SIGNED: [Signature]
 DATE: 4/29/2016

STANDARD CONSTRUCTION DRAWINGS

		STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS			
BP-2.1	7/17/15	HL-10.11	1/15/16	MGS-1.1	7/19/13	MT-95.41	7/18/14	TC-7.65	1/15/16	800	4/15/16
BP-2.2	7/18/16	HL-10.12	1/15/16	MGS-2.1	7/19/13	MT-98.29	7/19/13	TC-21.10	1/15/16	832	1/17/14
BP-3.1	7/18/14	HL-10.13	1/15/16	MGS-3.1	7/18/14	MT-100.00	1/15/16	TC-22.20	1/17/14	840	7/17/14
BP-3.1	7/19/13	HL-20.11	1/16/15	MGS-3.2	1/18/13	MT-101.70	1/17/14	TC-41.30	10/18/13	875	1/17/14
BP-6.1	7/19/13	HL-20.14	1/16/15	MGS-4.2	7/19/13	MT-101.90	7/17/15	TC-41.50	10/18/13		
BP-7.1	7/18/14	HL-30.11	1/15/16			MT-102.10	7/18/14	TC-42.10	10/18/13		
		HL-30.21	1/17/14	MH-L2	1/15/16	MT-102.20	7/18/14	TC-42.20	10/18/13		
CB-2.2	1/15/16	HL-30.22	1/17/14			MT-105.10	7/19/13	TC-51.11	1/15/16		
CB-2.3	1/15/16	HL-30.33	1/17/14	RM-3.1	7/19/13			TC-65.10	1/17/14		
DM-1.1	1/15/16	HL-30.41	7/18/14	RM-4.5	7/18/14	PCB-91	1/18/13	TC-65.11	7/18/14		
DM-1.2	1/18/13	HL-40.20	1/16/15	RM-5.2	1/17/14			TC-71.10	1/17/14		
DM-4.3	1/15/16	HL-60.11	1/15/16			VFF-1-90	7/17/15	TC-72.20	7/18/14		
DM-4.4	1/15/16	HL-60.31	7/17/15					TC-81.21	1/15/16		
F-2.1	7/19/13					SBR-1-13	1/17/14	TC-83.10	1/15/16		
F-3.3	7/19/13	HW-2.2	1/15/16					TC-83.20	1/15/16		
F-3.4	7/19/13							TC-85.20	1/15/16		

SPECIAL PROVISIONS

WATERWAY PERMIT 8/18/16

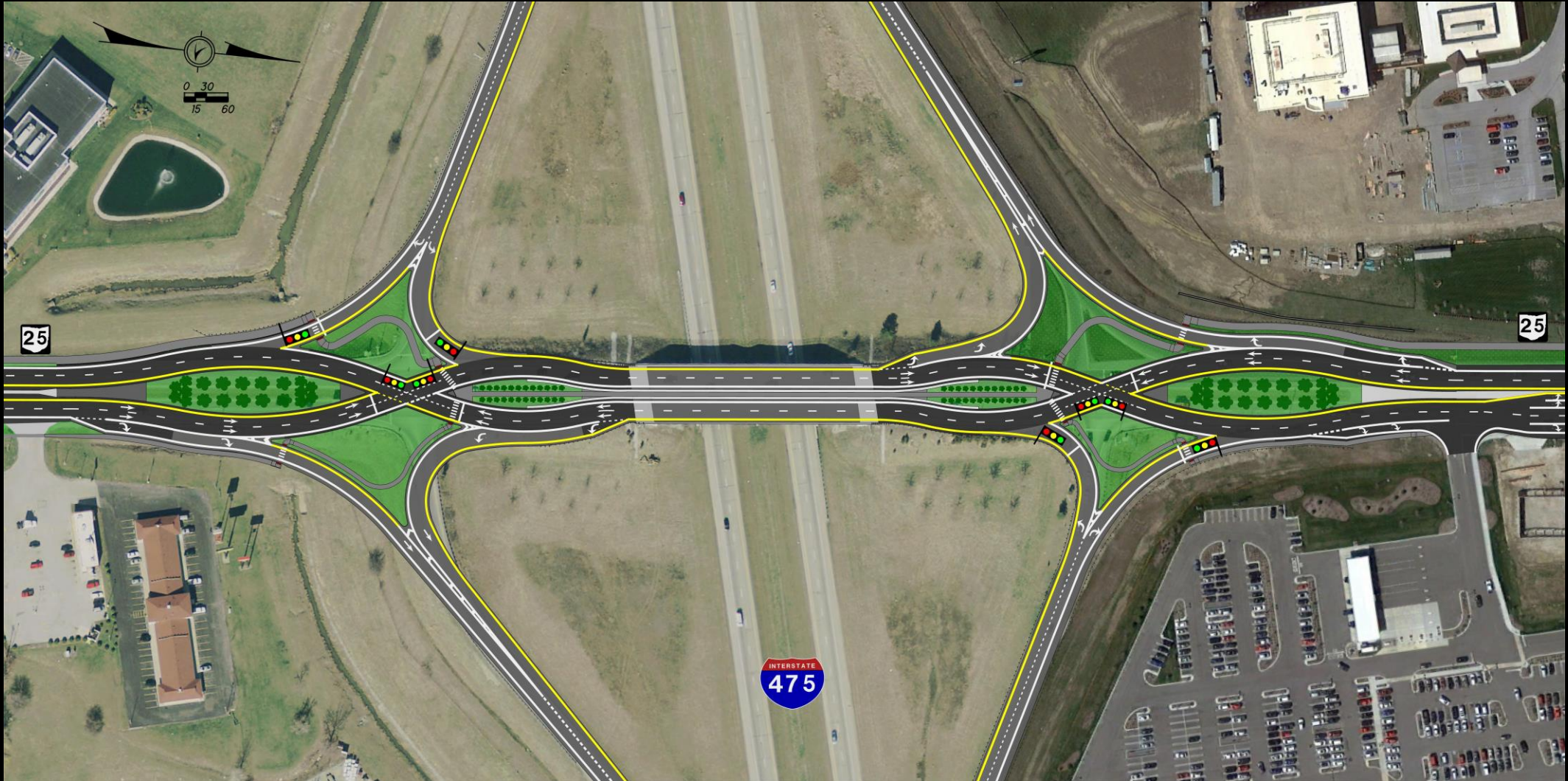
APPROVED _____
 DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
 DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

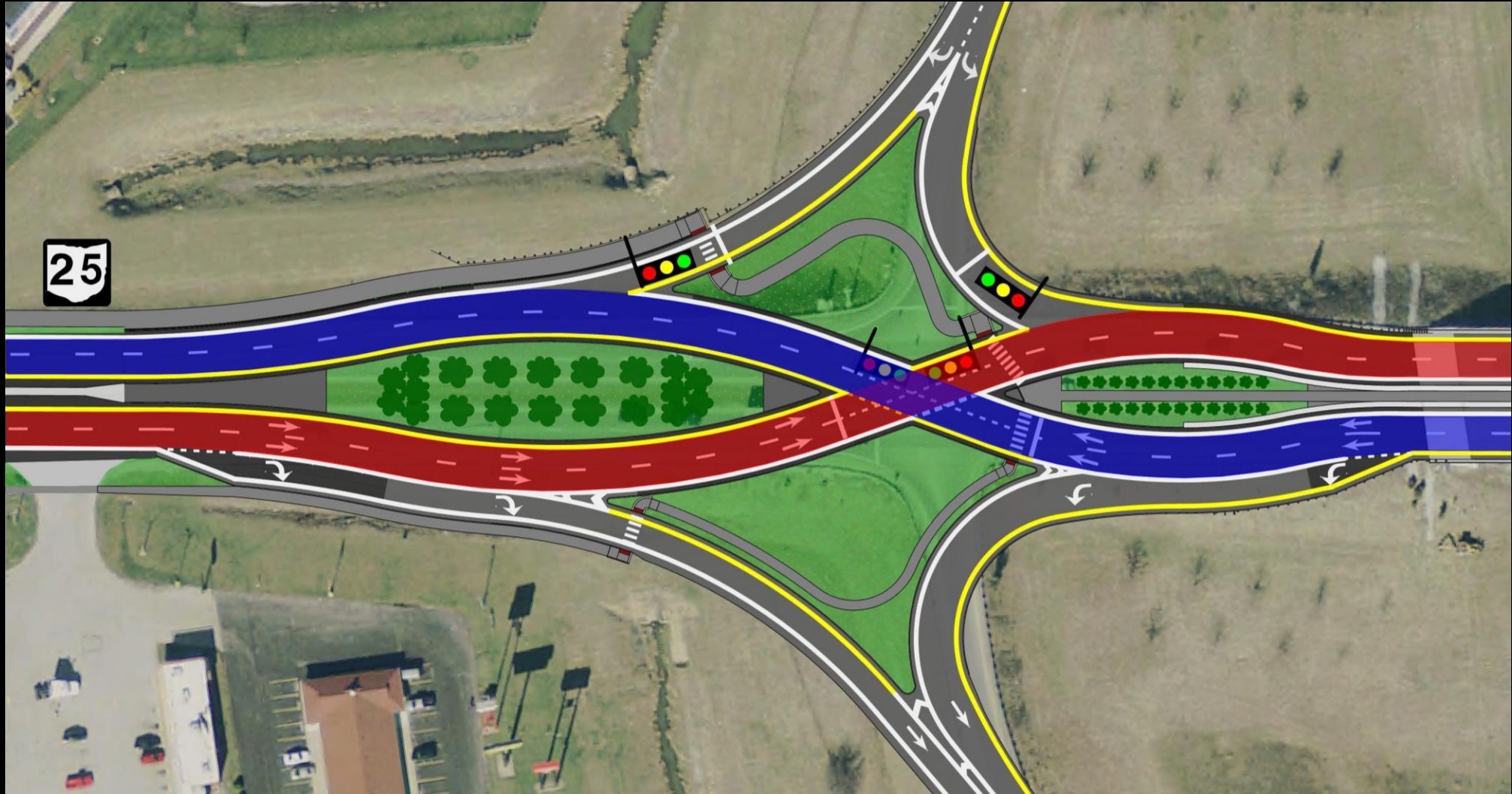
FEDERAL PROJECT NO. **E150 (188)**
 PID NO. **96249**
 CONSTRUCTION PROJECT NO. **NONE**
 RAILROAD INVOLVEMENT **NONE**
WOO-25-20.70
 1/345



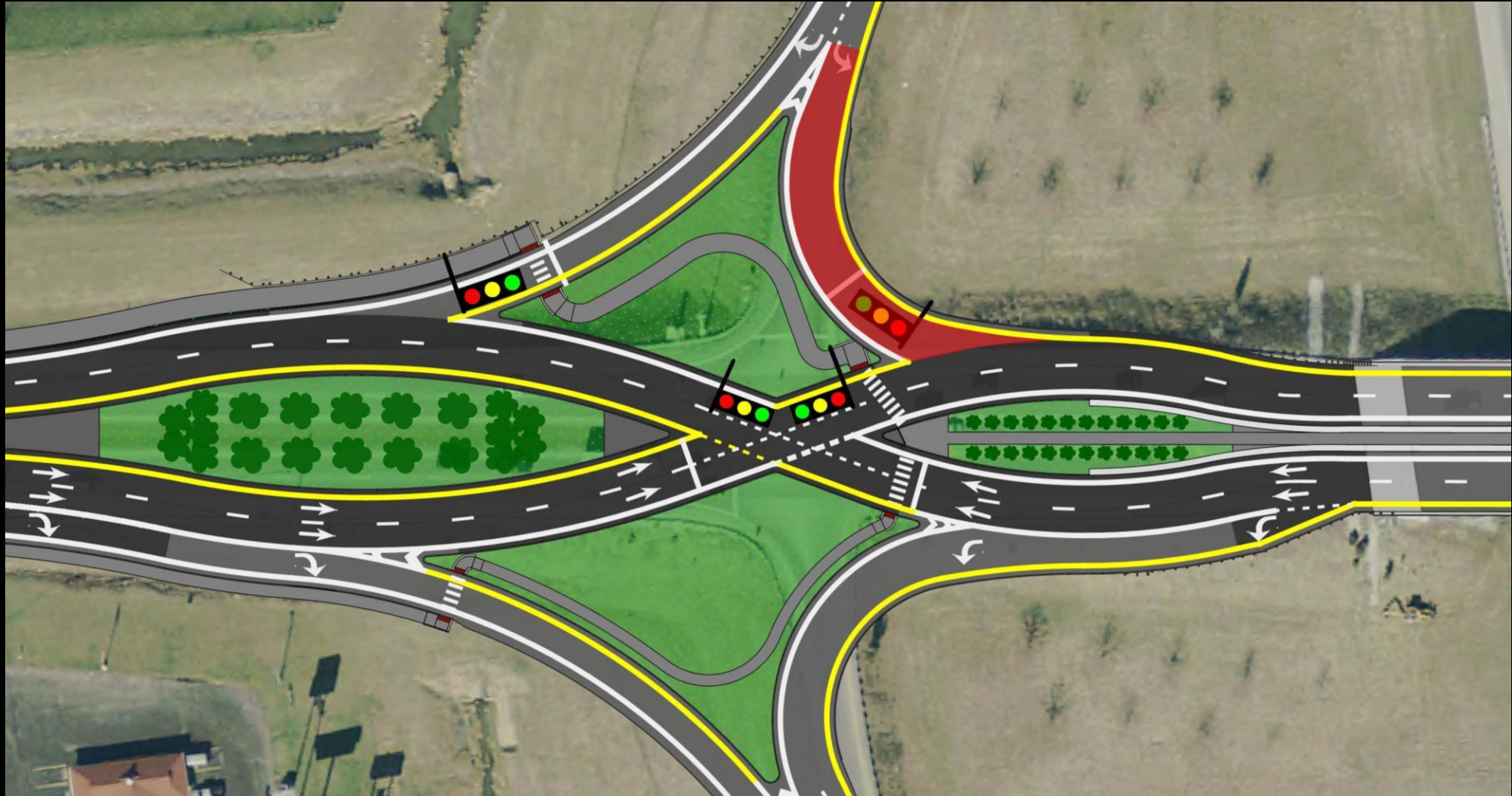
DDI & Key Design Concepts



Through Movements at Crossover

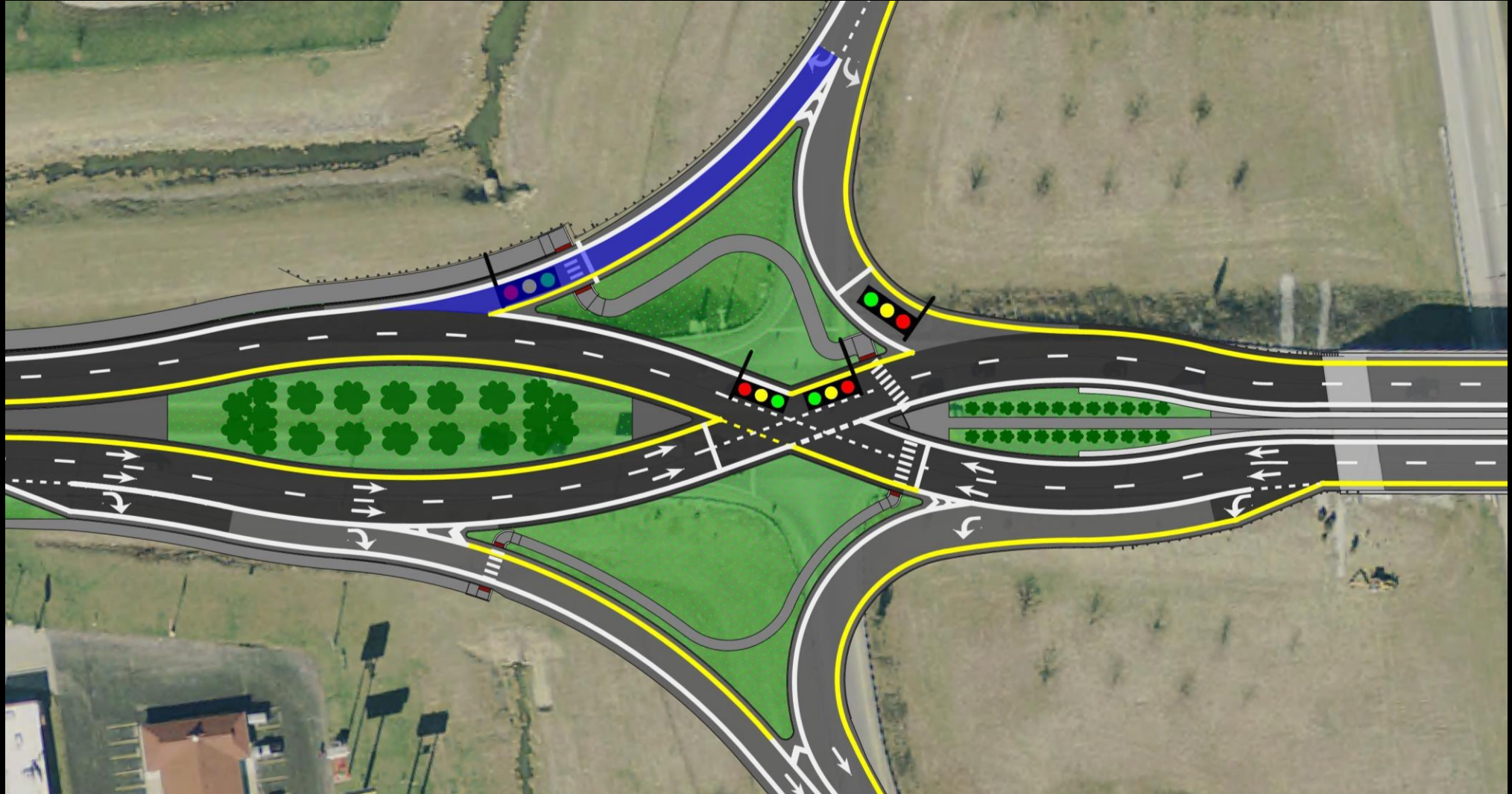


Left Turns at Exit Ramp

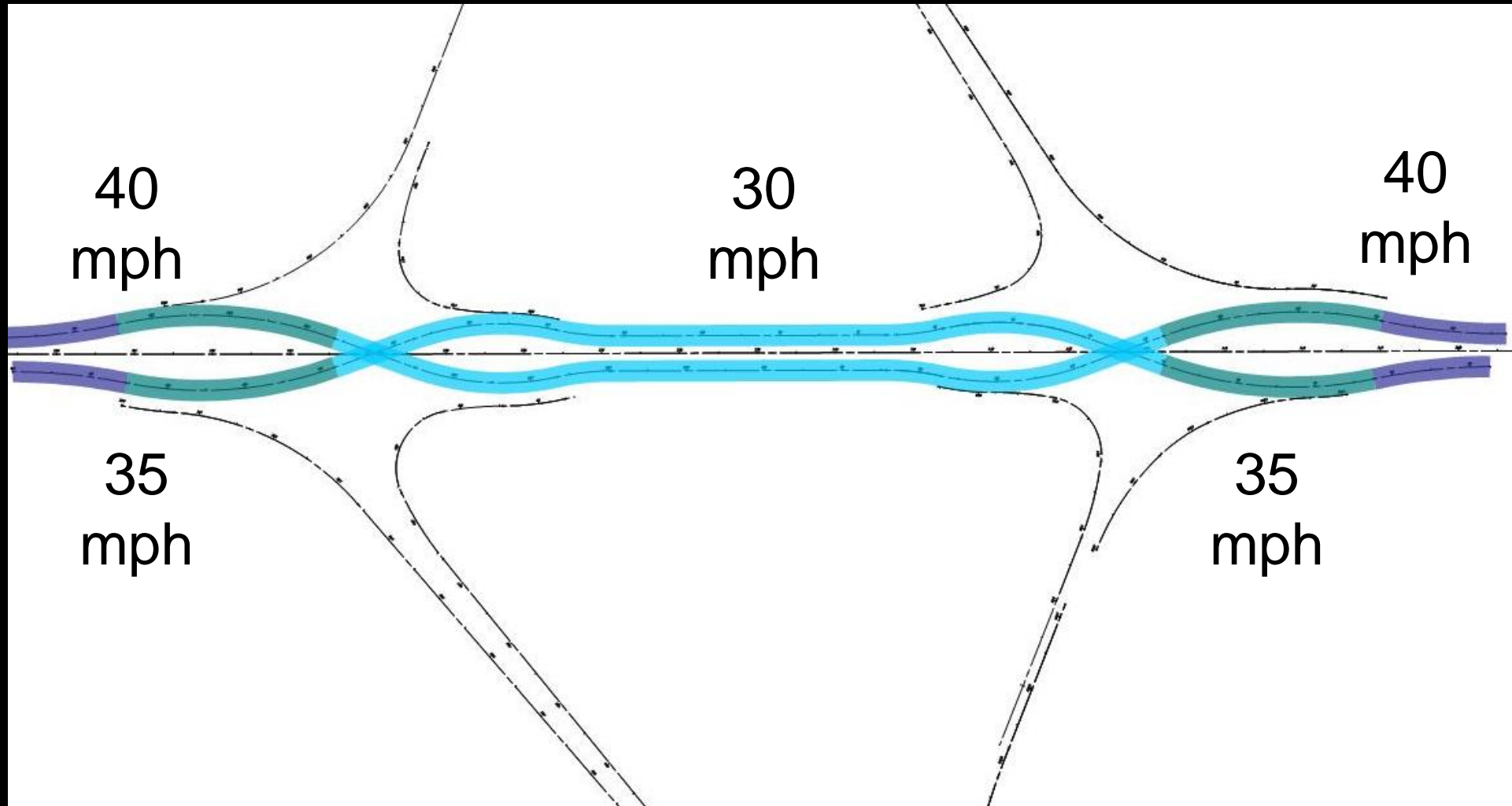




Right Turns at Exit Ramp

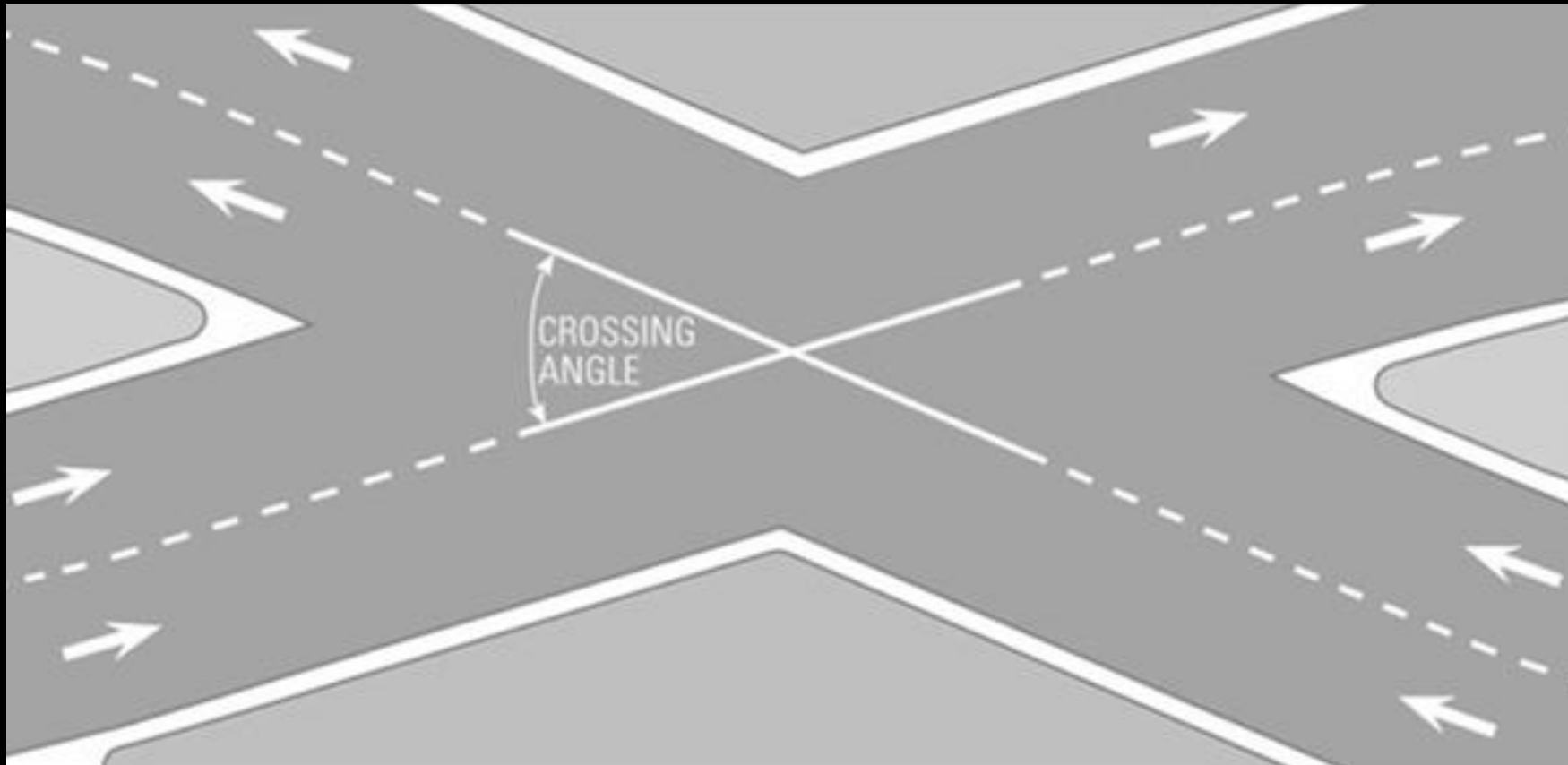


Design Speed (25 ~ 35 mph)

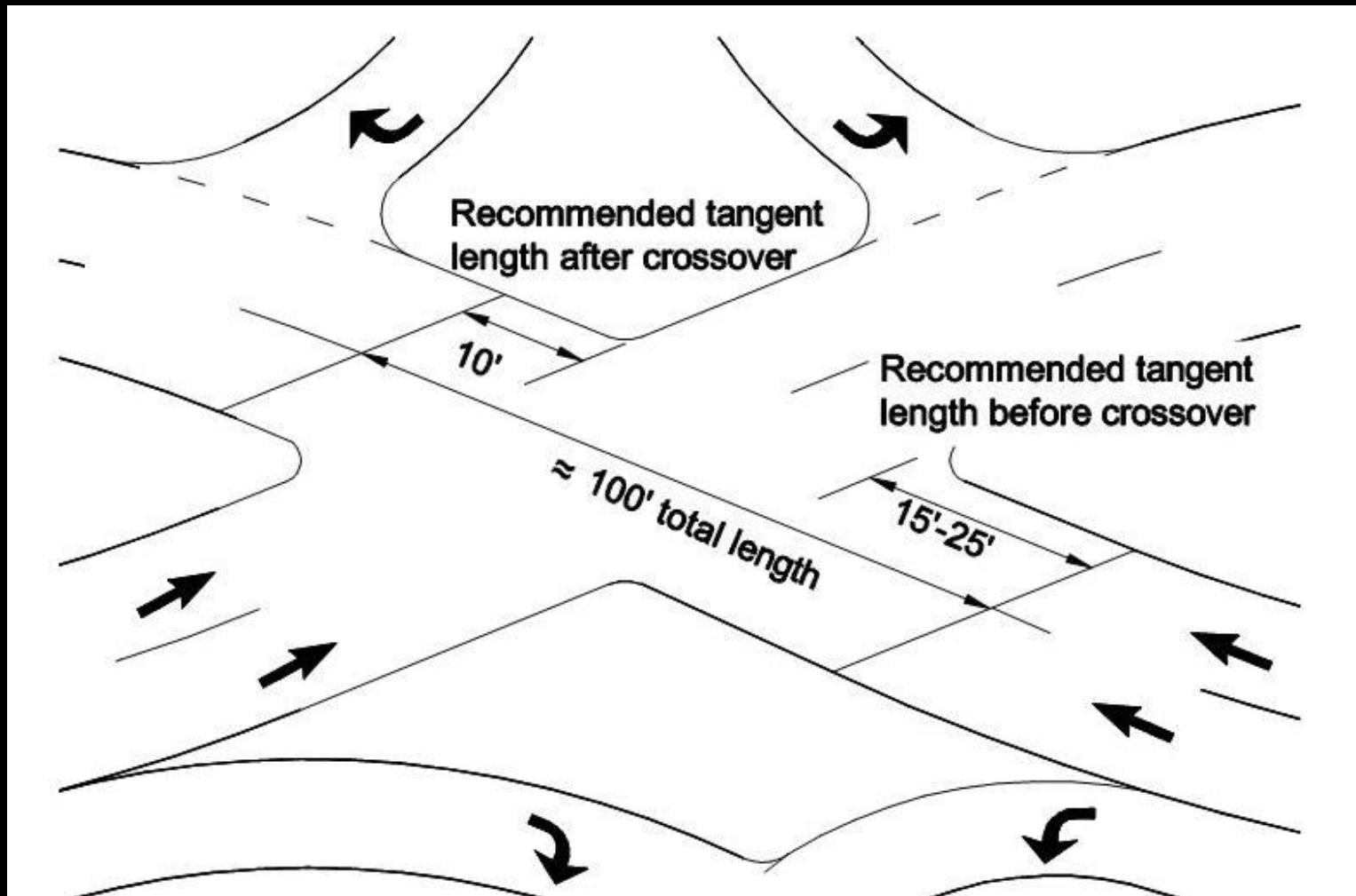


Crossover Angle

Typically 30 to 60 degrees



Crossover Tangent



\$7.9 Million Construction Value





Construction Benefits

Construction began Aug '17

Maintained 2-way traffic

Exit ramps closed

Open to traffic Oct '17



Public Outreach

Multiple public meetings throughout design process

Educational videos on ODOT's website

Public meeting held before opening to traffic

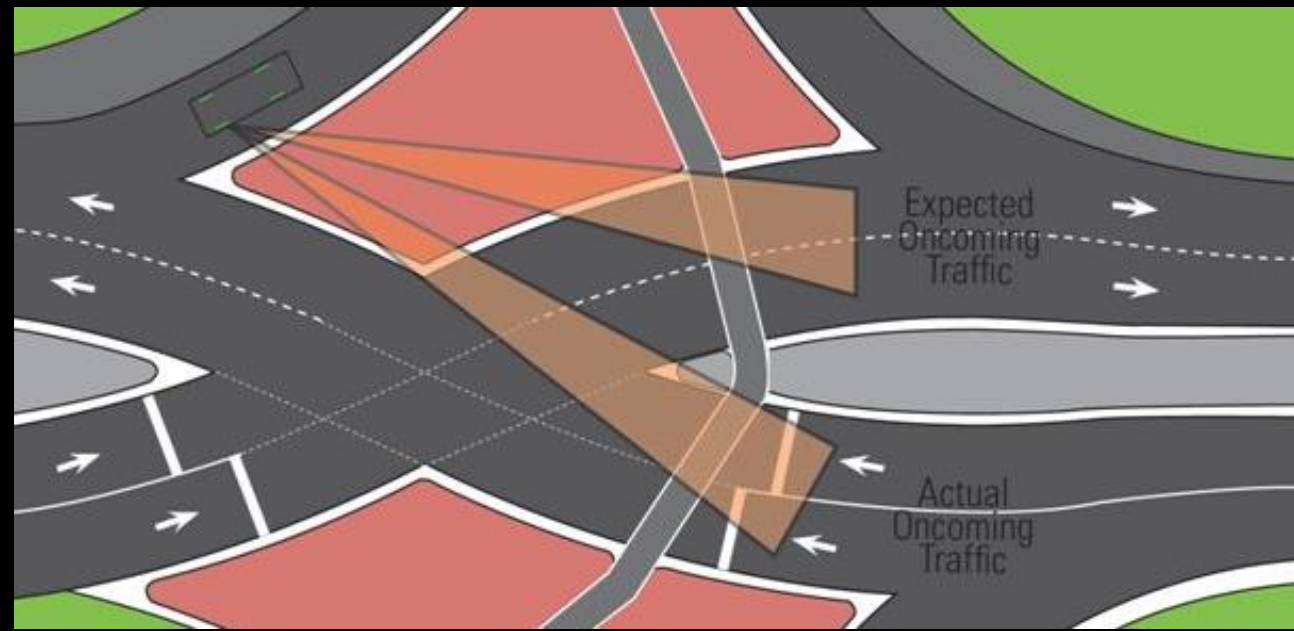
Local news stations pushes



Geometric Benefits

Better sight distance at turns

Wrong way entry to ramps
extremely difficult



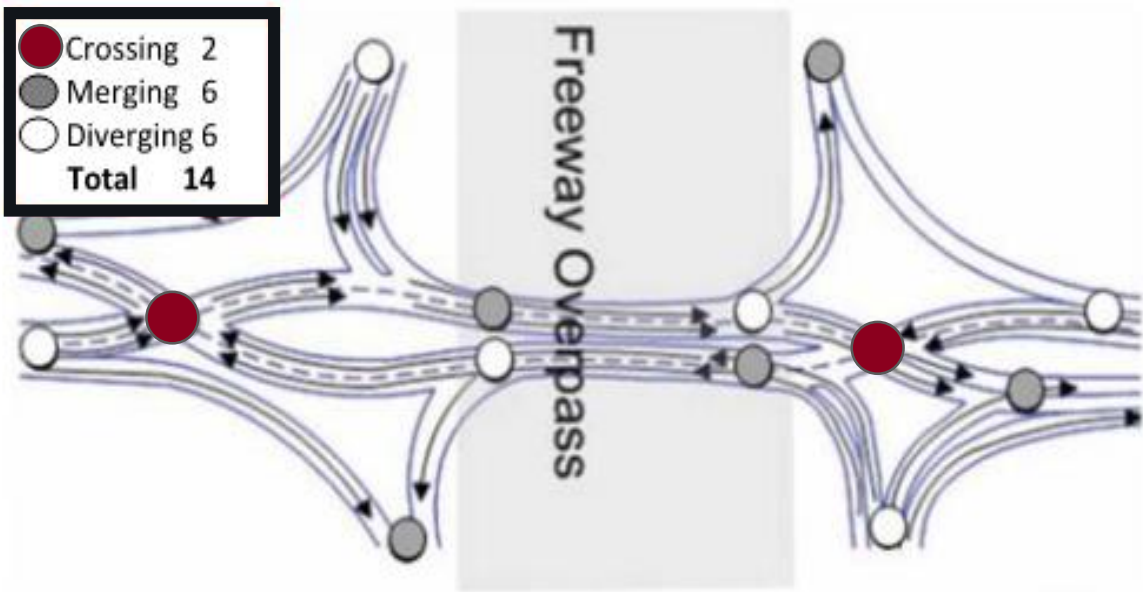
Operations Benefits

Reduces queuing on highway

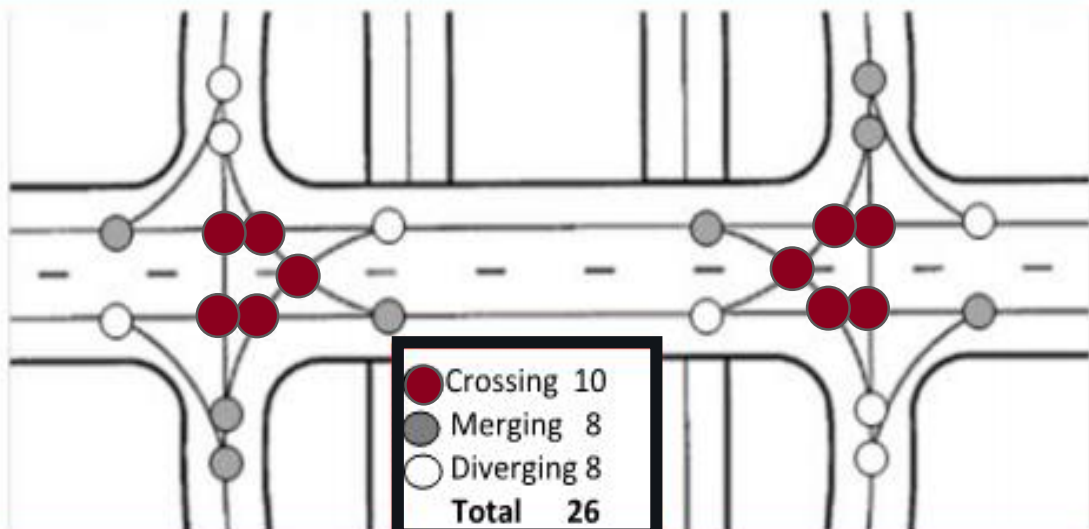
Improves efficiency & capacity with two-phase signals

Eliminates left turn phases to get traffic to I-475





Diverging Diamond Interchange – Conflict Points



Conventional Diamond Interchange – Conflict Points

Safety Benefits

Fewer conflict points

Reduced Speed

5-50% crash reductions

60 crashes/year before

38 crashes/year after



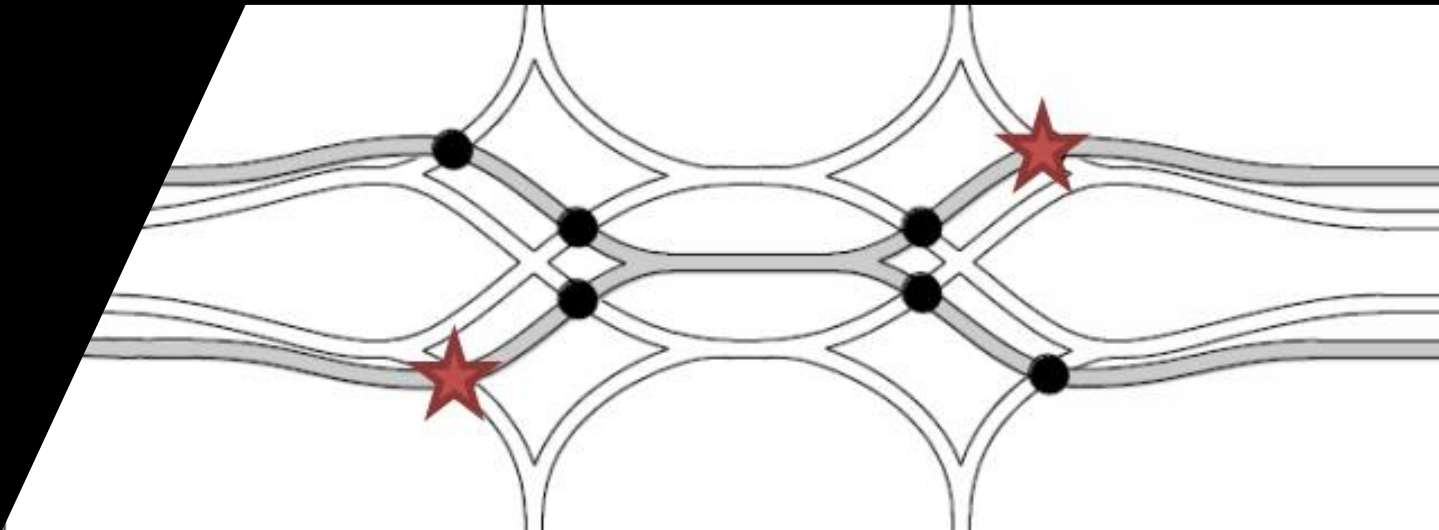
Pedestrian Safety Benefits

Pedestrian and bicyclist access

10' multi-use path

6' walk

Signalized exit ramps





Project Challenges

Costco access

Pedestrian accessibility

Overhead sign placement

Limited ROW

Inside ramp radii

Place DDI signals within a coordinated signal system





Lessons Learned

Continuous left turn onto the Interstate

Ramp width & striping

Landscaping





Results

DGL and ODOT still
monitoring progress

Early data shows crash
reduction

Public opinion extremely
positive



Awards

America's Transportation Awards
Operations Excellence Small Category

ACEC Ohio Award

Outstanding Engineering Excellence

ASCE

Northwest Ohio Project of the Year

