

# **NEW I-69 INTERCHANGE AT 106<sup>TH</sup> STREET**

Federal Highway Administration and  
Indiana Department of Transportation

## **ENVIRONMENTAL ASSESSMENT**

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Des. No. 1298035

August 13, 2015



200 South Meridian Street  
Suite #330  
Indianapolis, IN 46225

**Indiana Department of Transportation**

County Hamilton

Route I-69 at 106<sup>th</sup> Street

Des. No. 1298035

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**FHWA-Indiana Environmental Document  
CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM  
GENERAL PROJECT INFORMATION**

**Road No./County:**

I-69/Hamilton County

**Designation Numbers:**

1298035

**Project Description/Termini:**

New interchange at I-69 and 106<sup>th</sup> Street. The limits of the proposed work along I-69 extend from approximately 2,400 feet south of to approximately 2,800 feet north of the 106<sup>th</sup> Street overpass. The limits of the proposed work along 106<sup>th</sup> Street extend from approximately 950 feet west of to approximately 1,350 feet east of the centerline of I-69.

After completing this form, I conclude that this project qualifies for the following type of Categorical Exclusion (FHWA must review/approve if Level 4 CE):

<input type="checkbox"/>	<b>Categorical Exclusion, Level 2</b> – The proposed action meets the criteria for Categorical Exclusion Manual Level 2 - table 1, CE Level Thresholds. Required Signatories: ESM (Environmental Scoping Manager)
<input type="checkbox"/>	<b>Categorical Exclusion, Level 3</b> – The proposed action meets the criteria for Categorical Exclusion Manual Level 3 - table 1, CE Level Thresholds. Required Signatories: ESM, ES (Environmental Services Division)
<input type="checkbox"/>	<b>Categorical Exclusion, Level 4</b> – The proposed action meets the criteria for Categorical Exclusion Manual Level 4 - table 1, CE Level Thresholds. Required Signatories: ESM, ES, FHWA
<input checked="" type="checkbox"/>	<b>Environmental Assessment (EA)</b> – EAs require a separate FONSI. Additional research and documentation is necessary to determine the effects on the environment. Required Signatories: ES, FHWA

Note: For documents prepared by or for Environmental Services Division, it is not necessary for the ESM of the district in which the project is located to release for public involvement or sign for approval.

**Release for Public Involvement**

  
ES Signature

8-18-15  
Date

  
FHWA Signature

8-19-2015  
Date

**Certification of Public Involvement**

Office of Public Involvement

Date

Note: Do not approve until after Section 106 public involvement and all other environmental requirements have been satisfied.

INDOT ES/District Env.  
Reviewer Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name and Organization of CE/EA Preparer: Dave Cleveland, Corradino, LLC

This is page 3 of 30    Project name: New I-69 Interchange at 106<sup>th</sup> Street in Fishers, IN    Date: August 13, 2015

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### Part I - PUBLIC INVOLVEMENT

Every Federal action requires some level of public involvement, providing for early and continuous opportunities throughout the project development process. The level of public involvement should be commensurate with the proposed action.

Does the project have a historic bridge processed under the Historic Bridges PA*?	<table border="1"><tr><td>Yes</td><td>No</td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Yes	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Yes	No				
<input type="checkbox"/>	<input checked="" type="checkbox"/>				
If No, then:					
Opportunity for a Public Hearing Required?	<table border="1"><tr><td>X</td><td><input type="checkbox"/></td></tr></table>	X	<input type="checkbox"/>		
X	<input type="checkbox"/>				

\*A public hearing is required for all historic bridges processed under the Historic Bridges Programmatic Agreement between INDOT, FHWA, SHPO, and the ACHP.

Discuss what public involvement activities (legal notices, letters to affected property owners and residents (i.e. notice of entry), meetings, special purpose meetings, newspaper articles, etc.) have occurred for this project.

Remarks:

**Notice of Survey Letter** - Notice of Survey Letters were mailed on May 28, 2013 to property owners located in the vicinity of the project area describing the proposed project and notifying them that project personnel may be entering their property to gather data for environmental analysis.

**Section 106 Consulting** - Public notice of the "No Historic Properties Affected" finding was advertised in the *Indianapolis Star* on May 2, 2015 with a 30-day comment period (Appendix F2). The 800.11(d) documentation was made available for public review at Corradino LLC's office at 200 South Meridian Street, Suite 330, Indianapolis, IN 46225. No comments were received by the public.

**Media** - Several articles related to this new interchange project have appeared in local newspapers. The *Indianapolis Star* chronicled plans for the new interchange in the December 17, 2012 edition, with a project update article published on May 8, 2014. Articles in the September 18, 2014 edition of the *Indianapolis Business Journal* and the June 17, 2014 and August 25, 2014 editions of the *Indianapolis Star* documented this new interchange project and chronicled efforts of private entities to relocate the potentially National Register of Historic Places (NRHP) eligible Flanagan-Kincaid House.

**Public Hearing** - The proposed project is being processed as an Environmental Assessment. Per the current *Indiana Department of Transportation (INDOT) Public Involvement Manual 2012*, Part 1, Section IV.C.4, a public hearing will be provided to the public. Upon release of the EA for public involvement, a legal advertisement will be placed in a local publication notifying the public of the EA's availability for review. The public will be provided a 30 day comment period.

#### Public Controversy on Environmental Grounds

Will the project involve substantial controversy concerning community and/or natural resource impacts?	<table border="1"><tr><td>Yes</td><td>No</td></tr><tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Yes	No	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Yes	No				
<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Remarks:

The only point of contention with members of the public was the potential impacts of the project on the Flanagan-Kincaid House. The Flanagan-Kincaid House, anticipated to be eligible for listing in the NRHP during the early stages of the consulting parties Section 106 coordination (Appendix F), was originally located along the south side of 106th Street, approximately 600 feet east of I-69. During project development, interchange alternatives were analyzed to construct the project without the need to acquire right-of-way from the historic boundary of the Flanagan-Kincaid House, in an effort to minimize any potential effects. Local preservation groups raised funds and orchestrated the relocation of the Flanagan-Kincaid House to a location a half mile to the north, October 4, 2014. FHWA and INDOT had no involvement in the relocation of the Flanagan-Kincaid House. In a letter dated October 22, 2014, the Indiana Department of Natural Resources - State Historic Preservation Officer (IDNR-SHPO) recommended that the Flanagan-Kincaid House not be considered eligible for NRHP listing, due to the relocation. The project is not anticipated to cause any other public controversy.

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### **Part II - General Project Identification, Description, and Design Information**

Sponsor of the Project: City of Fishers INDOT District: Greenfield

Local Name of the Facility: New I-69 Interchange at 106<sup>th</sup> Street, from approximately 950 feet west of to approximately 1,350 feet east of the centerline of I-69, in Fishers, IN

Funding Source (mark all that apply): Federal ☒ State ☒ Local ☒ Other\* ☐

\*If other is selected, please identify the funding source: \_\_\_\_\_

#### **PURPOSE AND NEED:**

*Describe the transportation problem that the project will address. The solution to the traffic problem should NOT be discussed in this section. (Refer to the CE Manual, Section IV.B.2. Purpose and Need)*

The purpose of the proposed project is to increase operational efficiency along the I-69 corridor in Fishers by:

1. Reducing congestion at the existing I-69 interchanges with 96<sup>th</sup> Street and 116<sup>th</sup> Street;
2. Improving traffic safety within the project study area; and
3. Providing direct access between I-69 and 106<sup>th</sup> Street to serve existing land uses and growth patterns.

The need of the proposed project is to address the existing capacity deficiencies of the existing roadway network and accommodate development and population growth within the study area. Specifically, the proposed project will address the following needs:

1. Reduce traffic congestion at the existing I-69 interchanges with 96<sup>th</sup> Street (Exit 203) and 116<sup>th</sup> Street (Exit 205), without creating unacceptable operations along 106<sup>th</sup> Street;
2. Enhance safety by reducing crash rates, via a more efficient transportation system, at the existing I-69 interchanges with 96<sup>th</sup> Street (Exit 203) and 116<sup>th</sup> Street (Exit 205), without creating unacceptable operations along 106<sup>th</sup> Street;
3. Provide for direct access between I-69 and the commercial and residential destinations along 106<sup>th</sup> Street; and
4. Provide a facility that supports the existing land uses, projected land uses, and general growth patterns along the 106<sup>th</sup> Street corridor.

#### Reduce Traffic Congestion

The detailed travel demand modeling and traffic capacity analysis, contained in the *Interchange Justification (IJ) Report* (Appendix G) prepared for this project, was based on an expansive study area that extends along I-69 from I-465 to 126<sup>th</sup> Street. While the immediate project area encompasses I-69, from 96<sup>th</sup> Street to 116<sup>th</sup> Street, and 106<sup>th</sup> Street, from Crosspoint Boulevard to USA Parkway, it was necessary to use the more expansive study area when developing the *IJ Report* in order to fully understand the project area's traffic operations, within the context of the larger study area.

Table 1 summarizes the capacity analysis results for the signalized intersections that comprise the I-69 interchanges with 96<sup>th</sup> Street and 116<sup>th</sup> Street, as well as the first signalized intersection to the east and west of each interchange. Level of Service (LOS) and average delay are reported for the year 2015 existing condition as well as the year 2035 No-Build condition. LOS is reported as "A" through "F" with LOS A representing uninhibited, free-flow conditions and LOS F representing gridlock. The point between LOS D and LOS E typically represents when a facility has reached its capacity, with congestion and queuing occurring more frequently as this threshold is exceeded. LOS E or greater results are highlighted in Table 1. Delay is measured in seconds and represents the anticipated average delay experienced by a motorist travelling through the intersection. The I-69 interchanges with 96<sup>th</sup> Street and 116<sup>th</sup> Street currently experience unacceptable levels of congestion and delay during peak periods, and capacity is anticipated to deteriorate even more in the future.

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**Table 1 - Adjacent Interchanges and Intersections – Capacity Analysis Summary**

		Existing (Year 2015)				No-Build (Year 2035)			
		AM		PM		AM		PM	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Intersection of 96 <sup>th</sup> Street With	Corporation Dr	C	21.4	C	25.0	C	29.3	D	35.8
	I-69 SB	C	21.0	C	22.1	C	27.7	C	33.6
	I-69 NB	B	17.4	F	93.8	C	24.5	F	176.9
	Hague Rd	C	22.1	D	36.7	C	25.7	E	57.6
Intersection of 116 <sup>th</sup> Street With	Commercial Dr	B	19.7	C	26.8	C	43.4	E	78.0
	I-69 SB	C	23.7	E	58.1	F	111.8	F	195.4
	I-69 NB	B	13.0	F	101.7	F	141.8	F	196.5
	USA Pkwy	B	14.7	E	65.5	C	20.2	F	207.4

Source: United Consulting and Corradino LLC, Interchange Justification Report, August 29, 2014.

## Enhance Safety

A safety analysis was performed to evaluate the proposed interchange's effect on safety. Historic crash data was reviewed along I-465, I-69, and SR 37 within the study area. Table 2 summarizes these crashes by location and provides a breakdown of crash severity and crash type.

**Table 2 - Crash Summary 2010-2012 (Crash Location and Severity)**

Location	Off-Road			Rear End			Side Swipe			Head On			Right Angle/Turn			Other/Unknown			Total	
	PD	PI	F	PD	PI	F	PD	PI	F	PD	PI	F	PD	PI	F	PD	PI	F		
I-465 Mainline	19	11	0	108	17	0	65	8	0	9	2	0	5	3	0	15	6	0	268	12%
I-69 Mainline	38	29	0	662	116	0	178	25	0	30	12	0	27	16	0	62	16	0	1211	54%
82nd St Interchange	1	1	0	86	18	0	23	3	0	1	2	0	12	4	0	32	7	0	190	8%
96th St Interchange	1	0	0	114	20	0	50	2	0	6	0	0	40	14	0	37	11	0	295	13%
106th St	3	2	0	7	2	0	7	0	0	1	0	0	7	1	0	8	2	0	40	2%
116th St Interchange	1	0	0	73	6	0	12	0	0	2	0	0	6	1	0	35	1	0	137	6%
US 37 Mainline	2	0	0	67	15	0	9	0	0	2	1	0	4	2	0	4	3	0	109	5%
<b>Total</b>	<b>65</b>	<b>43</b>	<b>0</b>	<b>1117</b>	<b>194</b>	<b>0</b>	<b>344</b>	<b>38</b>	<b>0</b>	<b>51</b>	<b>17</b>	<b>0</b>	<b>101</b>	<b>41</b>	<b>0</b>	<b>193</b>	<b>46</b>	<b>0</b>	<b>2250</b>	<b>100%</b>
<b>Percentage</b>	<b>5%</b>			<b>58%</b>			<b>17%</b>			<b>3%</b>			<b>6%</b>			<b>11%</b>			<b>100%</b>	

Source: United Consulting and Corradino LLC, Interchange Justification Report, August 29, 2014.

PD = Property Damage  
PI = Personal Injury  
F = Fatality

Table 2 illustrates that between 2010 and 2012, 268 crashes occurred along I-465 mainline, 1,211 crashes occurred along I-69 mainline, and 109 crashes occurred along SR 37 mainline within the study area. This safety analysis is based on crash data provided by INDOT that was retrieved from the *Automated Reporting Information Exchange System (ARIES)*. Over half of the crashes that occurred in the study area were rear end crashes, 58%. The next highest crash type was side swipe crashes at 17%. The high frequency of rear end crashes along I-69 is likely due to high traffic volumes and congestion, with vehicles forced to make abrupt stops. Side swipe crashes are typically caused by improper lane changes that typically occur when vehicles are entering or exiting the interstate. The low crash rate along 106<sup>th</sup> street is due to the fact that there is no existing interchange with merge and diverge ramps at this location.

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Table 3 differentiates by crash type and summarizes crashes per pavement condition and lighting condition. Over 75% of all crashes took place during dry, daylight conditions. Peak travel times are during the day, and high traffic volumes were likely the primary cause. Over 80% of rear end crashes occurred during dry, daylight conditions which shows that congestion was likely to blame for the majority of these crashes. The primary cause listed in the INDOT provided crash data was "following too closely."

**Table 3 - Crash Summary 2010-2012 (Crash Type and Condition)**

Condition	Off-Road		Rear End		Side Swipe		Head On		Right Angle/Turn		Other/Unknown		Total	
<b>Dry Pavement</b>	64	59%	1086	83%	316	83%	47	69%	100	70%	175	73%	1788	79%
<b>Wet/Ice/Snow/Water</b>	44	41%	225	17%	66	17%	21	31%	42	30%	64	27%	462	21%
<b>Total</b>	<b>108</b>	<b>100%</b>	<b>1311</b>	<b>100%</b>	<b>382</b>	<b>100%</b>	<b>68</b>	<b>100%</b>	<b>142</b>	<b>100%</b>	<b>239</b>	<b>100%</b>	<b>2250</b>	<b>100%</b>
<b>Daylight</b>	60	56%	1053	80%	288	75%	34	50%	112	79%	161	67%	1708	76%
<b>Dark/Dawn/Dusk</b>	48	44%	258	20%	94	25%	34	50%	30	21%	78	33%	542	24%
<b>Total</b>	<b>108</b>	<b>100%</b>	<b>1311</b>	<b>100%</b>	<b>382</b>	<b>100%</b>	<b>68</b>	<b>100%</b>	<b>142</b>	<b>100%</b>	<b>239</b>	<b>100%</b>	<b>2250</b>	<b>100%</b>

Source: United Consulting and Corradino LLC, Interchange Justification Report, August 29, 2014.

### Provide Direct Access

Currently, there is no direct access to or from I-69 at 106<sup>th</sup> Street. Access at this location is needed to support the existing traffic volumes as well as the anticipated future growth. Motorists currently use the I-69 interchanges at 96<sup>th</sup> Street or 116<sup>th</sup> Street to gain access to the 106<sup>th</sup> Street area; however, as previously noted, these existing interchanges currently experience congestion and delay during peak periods. The I-69 interchanges at 96<sup>th</sup> Street and 116<sup>th</sup> Street are not easily expanded since, for critical movements, they currently have dual right and left turn lanes on the ramps at the signalized ramp junctions, as well as dual lane left turn lanes on the bridges. Further expansion is cost prohibitive due to right-of-way impacts in these commercially developed areas.

### Support Land Uses and Growth Patterns

The City of Fishers has seen tremendous growth over the past three decades and is currently the 8<sup>th</sup> most populated community in Indiana. U.S. Census data reports that Fishers had an approximate population of 2,000 in 1980, 7,200 in 1990, and 77,000 in 2010. Growth has been both residential and commercial in nature. The area near the proposed 106<sup>th</sup> Street interchange, and in particular the existing platted and partially developed commercial office parks in the quadrants of the interchange, are currently experiencing development activity.

The Indianapolis Metropolitan Planning Organization's (MPO's) Travel Demand Model was used as the base for developing the traffic projections for the I-69 new interchange at 106<sup>th</sup> Street project. Land use analysis, contained in the *IJ Report* (Appendix G), was performed for the study area to generate realistic growth projections. These growth projections were then used to generate traffic projections for the project, for use in determining the necessary scope of work. A screening process was performed to identify developable parcels. The City of Fishers provided GIS shape files including zoning, floodplains, and aerial photography for use in the screening process. The first step in the screening process identified vacant parcels in the zoning shape file. The next step identified planned urban development (PUD) parcels in the zoning shape file. Aerial photography was then used to verify the status of all parcels. Any area within a floodplain was assumed undevelopable. Small parcels that serve as utility easements, driveways, etc. were assumed undevelopable. Protected parcel zonings, including open space, were assumed undevelopable. The *City of Fishers Downtown Illustrative Master Plan* includes specific plans for development that were incorporated in the analysis. Vacant parcels were then assumed to develop with similar uses and densities as the existing development. For example, the vacant ground in the southeast quadrant of the proposed I-69/106<sup>th</sup> Street interchange was assumed to develop with 3-story office buildings, with the same proportion of parking, infrastructure, storm water detention, etc., similar to the existing development on that site. Vacant parcels in residential areas were assumed to develop with residential with similar densities.

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### PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: HamiltonMunicipality: Fishers

#### Project Introduction

INDOT, with active support and financial sponsorship from the City of Fishers (Fishers) and Hamilton County, is proposing to construct a new interchange along I-69 at the 106<sup>th</sup> Street overpass near mile marker 204 in Hamilton County, Indiana. The project area is shown in Appendix

#### Limits of Proposed Work:

The limits of the proposed work along I-69 extends from approximately 2,400 feet south of to approximately 2,800 feet north of the 106<sup>th</sup> Street overpass resulting in a total distance of approximately 5,200 feet (1.0 mile).

The limits of the proposed work along 106<sup>th</sup> Street extends from the east leg of the Crosspoint Boulevard roundabout to the west leg of the USA Parkway roundabout. These limits correspond to a distance from approximately 950 feet west of to approximately 1,350 feet east of the centerline of I-69, resulting in a total distance of approximately 2,300 feet (0.44 mile).

Total Work Length: 1.44 Mile(s)Total Work Area: 34.4 Acre(s)

Is an Interchange Modification Study / Interchange Justification Study (IMS/IJS) required?  
If yes, when did the FHWA grant a conditional approval for this project?

Yes <sup>1</sup>	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
Date:	January 16, 2015

<sup>1</sup>If an IMS or IJS is required; a copy of the approved CE/EA document must be submitted to the FHWA with a request for final approval of the IMS/IJS.

In the remarks box below, describe existing conditions, provide in detail the scope of work for the project, including the preferred alternative. Include a discussion of logical termini. Discuss any major issues for the project and how the project will improve safety or roadway deficiencies if these are issues.

#### Existing Conditions:

##### Interstate 69

The existing I-69 cross section in each direction consists of a five-foot paved inside shoulder, four 12-foot mainline thru lanes; a 12-foot auxiliary lane for merges and diverges to and from 96<sup>th</sup> Street and 116<sup>th</sup> Street, and a ten-foot paved outside shoulder. The posted speed of I-69 in the project area is 65 mph.

##### 106<sup>th</sup> Street

106<sup>th</sup> Street currently bridges over the interstate with no access to I-69. It is a two-lane road with an 11-foot wide thru lane and a four-foot wide (two-foot paved) shoulder in each direction. 106<sup>th</sup> Street is classified as a Minor Arterial with a posted speed limit of 40 mph. No pedestrian facilities currently exist along 106<sup>th</sup> Street within the project area. There is a recently constructed two-lane roundabout at the intersection of 106<sup>th</sup> Street with Crosspoint Boulevard/Lantern Road (west project limit). There is also a two-lane roundabout at the 106<sup>th</sup> Street intersection with USA Parkway/Lantern Road (east project limit). Prior to the construction of I-69, Lantern Road was a continuous north-south route; however, Lantern Road was bisected by I-69 and relocated so that Lantern Road currently exists on both sides of the interstate. In this report, the west intersection is referred to as Crosspoint Boulevard and the east intersection is referred to as USA Parkway.

#### Operation Indy Commute:

Construction was substantially complete in 2014 for the Operation Indy Commute (OIC) project, which was fully accounted for in the base and future year analysis in the *IJ Report*. The OIC project added a thru lane in the median for southbound I-

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69 and added an auxiliary lane between the 82<sup>nd</sup> Street and 116<sup>th</sup> Street interchanges for both northbound and southbound I-69. OIC also constructed braid ramp bridge structures at the I-69/SR 37 interchange, north of 116<sup>th</sup> Street. The OIC project provided significant traffic capacity improvements and reduced recurring commuting "bottlenecks" along I-69 between the I-465/I-69 interchange and the I-69/SR 37 interchange.

### Proposed Project Improvement:

The proposed project is a new I-69 interchange at the 106<sup>th</sup> Street overpass located within the City of Fishers in Hamilton County, Indiana. It is within the limits of the Indianapolis MPO, which is also a Transportation Management Area (TMA). Location maps for the proposed interchange can be found in Appendix A. The proposed interchange provides for all four turning movements to and from I-69. Project alternatives, including the Do Nothing Alternative, were analyzed based on their ability to meet the project's purpose and need. The preferred alternative is discussed in more detail in the following section. The other new interchange build alternatives, and why they were eliminated from further consideration, are discussed in the *Other Alternatives Considered* section of this document.

### Preferred Alternative: Roundabout Interchange

Roundabouts improve the travel time over all interchange alternatives by creating continuous flow of traffic. The Roundabout Alternative provides a continuous two-lane, oval-shaped roundabout centered over the I-69 centerline. Appendix B contains plans for the Roundabout Alternative. The northbound I-69 diverge ramp provides a three-lane approach (left, left/thru, and a separate right turn lane bypass for the northbound I-69 to eastbound 106<sup>th</sup> Street movement). The southbound I-69 diverge ramp provides a two-lane approach (left and left/thru/right). Eastbound 106<sup>th</sup> Street provides a three-lane approach (left/thru, thru, and a separate eastbound 106<sup>th</sup> Street to southbound I-69 right turn bypass lane). Westbound 106<sup>th</sup> Street provides a three-lane approach (left/thru, thru, and a separate westbound 106<sup>th</sup> Street to northbound I-69 right turn bypass lane).

The interchange contains two separate two-lane bridges over I-69, one to the south and the other to the north. The north bridge will provide a variable six foot to eight foot wide sidewalk along the north side of 106<sup>th</sup> Street for the entire project length, with crosswalks across 106<sup>th</sup> Street at Crosspoint Boulevard and USA Parkway.

The existing 106<sup>th</sup> Street structure over I-69 will be totally removed as part of this project and replaced with two one-way structures (south structure and north structure) as part of the preferred alternative. Construction along I-69 will include new bridge piers in the median and new bridge abutments to the outside of mainline I-69. No roadway work is proposed for existing mainline I-69, and all roadway work along I-69 will be limited to construction of the ramps for the new interchange.

The Roundabout Interchange will acquire 9.5 acres of permanent right-of-way and will impact 0.58 acre of wetlands. No impacts to floodplains, streams, forests, or endangered species are anticipated. The Roundabout Alternative does not require residential or commercial relocations.

#### Advantages:

- Creates an efficient interchange without traffic signal;
- Improves safety;
- Less severe collisions;
- Fewer conflict points due to central splitter island;
- Eliminates right angle and head on collisions; and,
- Eliminates virtually all delay during low-volume, non-peak hours of the day.

#### Disadvantages:

- Increases pedestrian delay since gaps are not artificially created by a traffic signal.

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### OTHER ALTERNATIVES CONSIDERED:

*Describe all discarded alternatives, including the Do-Nothing Alternative and an explanation of why each discarded alternative was not selected.*

#### No-Build Alternative: Do Nothing Alternative

The Do Nothing Alternative serves as a baseline for comparison for build alternatives. The Do Nothing Alternative does not meet the purpose and need for the project because it would not 1) reduce traffic congestion at the I-69 interchanges with 96<sup>th</sup> Street and 116<sup>th</sup> Street, 2) enhance safety in the study area, 3) provide direct access between I-69 and 106<sup>th</sup> Street, or 4) support land uses and growth patterns. The Do Nothing Alternative was eliminated because it does not satisfy purpose and need.

#### Build Alternative: Transportation Systems Management (TSM) Alternative

The TSM Alternatives strategies do not meet the purpose and need for the project because they would not 1) reduce traffic congestion at the I-69 interchanges with 96<sup>th</sup> Street and 116<sup>th</sup> Street, 2) enhance safety in the study area, 3) provide direct access between I-69 and 106<sup>th</sup> Street, or 4) support land uses and growth patterns. The TSM Alternatives were eliminated because they do not satisfy purpose and need. In 2003, a Record of Decision (ROD) was issued for the ConNECTIONS (Northeast Corridor Transportation) Study Environmental Impact Statement (EIS), which addressed the entire northeast quadrant of the Indianapolis TMA. The ConNECTIONS Study analyzed highway, transit, transportation systems management (TSM), and special use lanes. Since that time there has been continuous study of transit alternatives for the northeast corridor. TSM Alternatives of particular note include the following.

- High Occupancy Vehicle Lanes (HOV) – HOV lanes improve interstate capacity, and not necessarily interstate accessibility. The recent mainline I-69 improvements associated with the OIC project provide sufficient mainline capacity through year 2035. There are no dedicated HOV lanes along the I-69 corridor, northeast of Indianapolis.
- Ramp Metering – Ramp metering is most effective for limiting the flow of local network vehicles accessing the mainline interstate. As previously mentioned, mainline I-69 capacity is sufficient through year 2035. There is no need to meter traffic.
- Mass Transit – Various studies over the years have investigated the viability of mass transit along this northeast corridor. Fishers currently has a mass transit option in place, the Fishers Express bus system, which to downtown Indianapolis. Year 2013 ridership was low with an average of 96 one-way trips per day according to Indy Express Bus: <http://www.fishers.in.us/DocumentCenter/View/1665>.
- Improvement of Non-106<sup>th</sup> Street Facilities - Potential Design improvements were considered as part of the Policy Point #1 discussion in the *IJ Report*. Improvements to the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges and corridors was shown to be cost-prohibitive due to right-of-way constraints.

The TSM Alternatives were eliminated from further consideration because they do not meet the purpose and need of the project. TSM Alternatives do not reduce traffic congestion at the adjacent I-69 interchanges to the north and south, and the cost of improving these adjacent interchanges is prohibitive. TSM alternatives do not provide direct access between I-69 and 106<sup>th</sup> Street.

#### Non-Preferred New Interchange Build Alternatives:

In addition to the preferred alternative previously discussed, three additional new interchange alternatives were investigated: a tight diamond interchange, a single point urban interchange, and a divergent diamond interchange. All of these interchange alternatives meet each of element of the project purpose and need in similar fashion. All of the interchange alternatives are anticipated to draw a similar amount of traffic from the adjacent I-69 interchanges with 96<sup>th</sup> Street and 116<sup>th</sup> Street; therefore,

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they reduce congestion at those adjacent existing interchange areas to the same degree. All of the interchange configurations are anticipated to improve overall safety within the study area. Providing a new interchange at 106<sup>th</sup> Street would mitigate some of the existing and future operational challenges at the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges and help to reduce the number of crashes at the existing signalized ramp junctions and the I-69 mainline diverge points that result from challenged capacity and queuing. All three of the interchange alternatives could be designed to meet all American Association of State Highway and Transportation Officials (AASHTO) and *Indiana Design Manual* (IDM) standards. All three interchange alternatives would provide direct access to 106<sup>th</sup> Street and support existing and future land use in the area.

The new interchange build alternatives have many similarities. They have similar project limits for both I-69 and 106<sup>th</sup> Street that match the project's logical termini of one existing I-69 interchange to the north of and south of the existing 106<sup>th</sup> Street overpass and one existing roundabout to the east of and west of I-69. None of the new interchange build alternatives adds lanes to, or requires extensive work on, mainline I-69. They all widen the existing two-lane 106<sup>th</sup> Street to four lanes (two in each direction) between Crosspoint Boulevard and I-69 and five lanes (three eastbound and two westbound) from I-69 to USA Parkway. All of the new interchange build alternatives close the existing full access to and from 106<sup>th</sup> Street at Kincaid Drive, replacing it with a right-in only on the south side of 106<sup>th</sup> Street and a right-in/right-out on the north side of 106<sup>th</sup> Street. They all provide a variable six foot to eight foot wide paved multi-use path along the north side of 106<sup>th</sup> Street for the entire project length, with crosswalks across 106<sup>th</sup> Street at Crosspoint Boulevard and USA Parkway. All of the new interchange build alternatives tie into the existing configuration of the east leg of the 106<sup>th</sup> Street/Crosspoint Boulevard roundabout and the existing configuration of the west leg of the 106<sup>th</sup> Street/USA Parkway roundabout while adding a new eastbound to southbound separate right turn bypass lane to the USA Parkway roundabout. The only differentiation among the new interchange build alternatives occurs within the interchange proper, as there are different ramp and intersection geometries associated with the different interchange alternatives. These differences in configuration create variation in cost, right-of-way impacts, traffic capacity within the interchange, ease of future expansion, and driver expectancy. These are the factors that were used to determine the preferred alternative among the new interchange build alternatives.

The three non-preferred new interchange alternatives have similar environmental impacts. Estimated costs vary by a couple million dollars among the alternatives. The primary area of differentiation between the preferred alternative and the other interchange alternatives is in the anticipated traffic operations within the actual interchange. The three interchange alternatives described below are not recommended because they do not perform as well as the preferred alternative from a traffic operations standpoint. Table 4, located in the section following the description of the three non-preferred interchange alternatives, compares the performance measures of all four of the new interchange alternatives.

### Build Alternative: Tight Diamond

When evaluating different interchange alternative types for this project, only urban interchanges were evaluated due to right-of-way constraints. The tight diamond interchange (TDI) is a variant of the standard diamond interchange and brings the ramp terminals closer together to reduce the right-of-way impact. This causes the two signals, typically associated with a traditional diamond interchange, to operate essentially as single signalized intersection. This compression does not allow for much storage on the bridge with nested left-turn bays; therefore additional lanes are required on the bridge.

#### Advantages:

- Leaves a small footprint;
- Utilizes simple bridge structure;
- Allows for closer outer road spacing;
- Lowers cost, due to reduced right-of-way and limited outer road reconstruction; and,
- Provides controlled pedestrian crossings by creating signal controls for all turning movements.

#### Disadvantages:

- Creates a wide bridge; and,
- Can create queuing and congestion due to the close spacing of the signalized ramp junctions.

The TDI was eliminated from further consideration because it is forecast to operate less efficiently than the preferred alternative, with approximately 7.3 and 1.6 times higher average delay per motorist for the design year AM and PM peak periods, respectively.

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### Build Alternative: Single Point Urban Interchange

For the traffic turning movement data developed for this project, the single point urban interchange (SPUI) improves traffic operations over the standard diamond interchange by combining the ramp terminal signals into a single signal. All left-turning movements are completed at this signal. It is recommended that SPUI's be built with dual left-turn lanes on the cross road even if this is not warranted by current traffic. This is due to the difficulty in expanding on the complex bridge required for a crossroad-over SPUI. In general, the SPUI requires less right-of-way than a traditional diamond interchange.

#### Advantages:

- Creates an efficient single signal;
- Utilizes right turns with free-flow movements;
- Increases capacity, decreases delay over standard diamond interchange, when left turning volumes are evenly split;
- Allows for tighter outer road spacing; and,
- Provides controlled pedestrian crossings by creating signal controls for all turning movements.

#### Disadvantages:

- Creates a large, complex bridge structure, which can be difficult to widen in the future;
- Widens intersection and reduces free-flow movements; and,
- Produces high cost.

The SPUI was eliminated from further consideration because it is forecast to operate less efficiently than the preferred alternative, with approximately 5.7 and 1.1 times higher average delay per motorist for the design year AM and PM peak periods, respectively. The SPUI costs \$2.1 million more than the preferred alternative.

### Build Alternative: Divergent Diamond Interchange

The divergent diamond interchange (DDI), also known as a double crossover diamond interchange, is a new interchange type to Indiana. The first DDI in Indiana was recently constructed at I-69 and SR 1 in Ft. Wayne, and another DDI is currently being constructed at I-65 and Worthsville Road near Greenwood, Indiana.

#### Advantages:

- Establishes efficient two phase signals;
- All exits from the interstate are made before reaching the 106<sup>th</sup> Street bridge;
- Increases capacity, decreases delay over standard diamond interchange, when left turning volumes are high;
- Creates fewer conflict points than standard diamond;
- Combines lanes for left-turn and through movements, thus narrowing bridge structure; and,
- Provides controlled pedestrian crossings by creating signal controls for all turning movements.

#### Disadvantages:

- Counterintuitive for drivers;
- Lower speed for through movements on 106<sup>th</sup> Street; and,
- Large footprint on either side of the interchange due to "bubbles" creating costly right-of-way impacts.

The DDI was eliminated from further consideration because it is forecast to operate less efficiently than the preferred alternative, with approximately 4.2 and 1.2 times higher average delay per motorist for the design year AM and PM peak periods, respectively. The DDI costs \$1.1 million more than the preferred alternative.

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**Table 4 – Summary of New Interchange Build Alternatives**

		Roundabout (Preferred)	Tight Diamond	SPUI	DDI
Traffic Operations (P&N)	2035 Peak Hour Capacity Results (average delay)	AM: 5.8 seconds PM: 28.7 seconds	AM: 42.4 seconds PM: 45.5 seconds	AM: 33.3 seconds PM: 33.0 seconds	AM East: 29.7 sec. AM West: 19.2 sec. PM East: 44.3 sec. PM West: 24.8 sec.
	24 Hour Operations	Will operate with little to no delay off peak	Signal timings can be optimized during off-peak hours, but delay is unavoidable	Signal timings can be optimized during off-peak hours, but delay is unavoidable	Signal timings can be optimized during off-peak hours, but delay is unavoidable
	Reduces 96 <sup>th</sup> & 116 <sup>th</sup> Congestion	Yes	Yes	Yes	Yes
Safety (P&N)	Enhanced Via Imp. Traffic Operations	Yes	Yes	Yes	Yes
Access (P&N)	Direct Between I-69 and 106 <sup>th</sup> Street	Yes	Yes	Yes	Yes
Growth (P&N)	Supports Existing & Projected Land Use	Yes	Yes	Yes	Yes
Environmental Impacts	New Permanent ROW (acres)	9.5	9.0	10.7	10.1
	Wetlands (acres)	0.63	0.52	0.69	0.73
	Floodplain (acres)	0.0	0.0	0.0	0.0
	Streams (linear feet)	0.0	0.0	0.0	0.0
	Farmlands (acres)	0.0	0.0	0.0	0.0
	Relocations	0	0	1* (commercial)	0*
Cost	Total Cost	\$33.9 million	\$31.3 million	\$36.0 million	\$35.0 Million
Other	Future Bridge Expansion	Widened relatively easily to provide third lane thru roundabout	Widened relatively easily in the future. Signal timings can be adjusted easily	Difficult and costly to expand	Similar to SPUI, difficult and costly to expand
	Driver Expectancy	Medium: Local familiarity with roundabouts and Keystone corridor	High: Common interchange configuration	Medium: Familiarity with two I-465 SPUI's	Low: First 2 DDI's in Indiana currently under construction

\* These interchange alternatives impact two development-ready commercial building pads in the northwest quadrant.

**The Do Nothing Alternative is not feasible, prudent or practicable because (Mark all that apply):**

It would not correct existing capacity deficiencies;

It would not correct existing safety hazards;

It would not correct the existing roadway geometric deficiencies;

It would not correct existing deteriorated conditions and maintenance problems; or

It would result in serious impacts to the motoring public and general welfare of the economy.

Other (It does not fulfill the purpose and need of the project and does not improve non-motorized connectivity)

X
X
X

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## ROADWAY CHARACTER:

### Interstate 69

Functional Classification: Principal Arterial (Interstate)  
 Current ADT: 118,000 (2015) Design Year ADT: 156,000 (2035)  
 Design Hour Volume (DHV): 7,600 Truck Percentage (%): 10.8  
 Designed Speed (mph): 65 Legal Speed (mph): 65

	Existing	Proposed
Number of Lanes:	10	10
Type of Lanes:	Vehicular – 5 NB, 5 SB	Vehicular – 5 NB, 5 SB
Pavement Width:	120 ft.	120 ft.
Shoulder Width:	Outside 10 ft. Inside 5	Outside 10 ft. Inside 5
Median Width:	Barrier Rail ft.	Barrier Rail ft.
Sidewalk Width:	NA ft.	NA ft.

Setting: ☒ Urban ☐ Suburban ☐ Rural  
 Topography: ☒ Level ☐ Rolling ☐ Hilly

### 106<sup>th</sup> Street

Functional Classification: 106<sup>th</sup> Street - urban minor arterial  
 Current ADT: 24,000 (2015) Design Year ADT: 37,000 (2035)  
 Design Hour Volume (DHV): 4,300 Truck Percentage (%): 1.6  
 Designed Speed (mph): 40 Legal Speed (mph): 40

Number of Lanes:	2	4 west of I-69, 5 east of I-69
Type of Lanes:	Thru	2 thru lanes in each direction with an EB to SB right turn lane east of I-69
Pavement Width:	22 ft.	48 (west) ft. 55 (east)
Shoulder Width:	2 ft.	Curb and gutter ft.
Median Width:	NA ft.	4 ft.
Sidewalk Width:	NA ft.	6 to 8 (north side only) ft.

If the proposed action has multiple roadways, this section should be filled out for each roadway.

## DESIGN CRITERIA FOR BRIDGES:

Structure/NBI Number(s): I-69-3-5309A Sufficiency Rating: NA – to be demolished  
 (Rating, Source of Information)

	Existing	Proposed (South Bridge)
Bridge Type: (South Bridge)	Continuous Composite Steel Plate Beam	Continuous Composite Steel Plate Girder
Number of Spans:	4	2
Weight Restrictions:	None ton	None ton
Height Restrictions:	15'-7" ft.	17 ft.
Curb to Curb Width:	42 ft.	32 ft.
Outside to Outside Width:	46 ft.	53.5 ft.
Shoulder Width:	10 ft.	Apron (varies) ft.
Length of Channel Work:		N/A ft.

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	Existing		Proposed (North Bridge)	
Bridge Type: (North Bridge)	Continuous Composite Steel Plate Beam		Continuous Composite Steel Plate Girder	
Number of Spans:	4		2	
Weight Restrictions:	None	ton	None	ton
Height Restrictions:	13.5	ft.	17	ft.
Curb to Curb Width:	44	ft.	32	ft.
Outside to Outside Width:	46	ft.	72	ft.
Shoulder Width:	10	ft.	Apron (varies) Includes 6 to 8 sidewalk	ft.
Length of Channel Work:			N/A	ft.

*Describe bridges and structures; provide specific location information for small structures.*

Remarks:

The existing bridge was constructed in 1969 and rehabilitated in 1996. The bridge is four span (36'-5", 99'-2", 99'-2", and 36'-5") and has a skew of 31 degrees. The structure will be totally removed as part of this project and replaced with two one-way structures (south structure and north structure) as part of the construction of the roundabout interchange. The proposed north and south bridges will have two spans (84'-6" and 84'-6") with a radial skew. The south bridge will not accommodate pedestrian traffic; however, the north bridge will carry a 6 to 8 foot variable width sidewalk.

Will the structure be rehabilitated or replaced as part of the project?

Yes  
☒

No  
☐

N/A  
☐

*If the proposed action has multiple bridges or small structures, this section should be filled out for each structure.*

## MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

Is a temporary bridge proposed?

Yes

No

Is a temporary roadway proposed?

Will the project involve the use of a detour or require a ramp closure? (describe in remarks)

Provisions will be made for access by local traffic and so posted.

Provisions will be made for through-traffic dependent businesses.

Provisions will be made to accommodate any local special events or festivals.

Will the proposed MOT substantially change the environmental consequences of the action?

Is there substantial controversy associated with the proposed method for MOT?

X
X
X
X

X
X
X
X

Remarks:

Traffic will be maintained on existing roads and the 106<sup>th</sup> Street overpass until a time when the existing overpass bridge structure is demolished. At that time, an official Hague Road/96<sup>th</sup> Street/Lantern Road detour route will be signed and will redirect motorists approximately 1 mile to the south (Appendix C4). With the large amount of local traffic in the area, it is anticipated that some motorists will decide to take an unofficial detour route to the north to 116<sup>th</sup> Street. Provisions will be made to maintain access to any adjacent business along 106<sup>th</sup> Street, within the construction zone, that does not already have additional access from a source other than 106<sup>th</sup> Street. The project team will continue to coordinate with the City of Fishers Engineering Department and the Hamilton County Highway Department during design and construction so that local special events can be accommodated as much as feasible.

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County HamiltonRoute I-69 at 106<sup>th</sup> StreetDes. No. 1298035**ESTIMATED PROJECT COST AND SCHEDULE:**Engineering: \$ 900,000 (2016) Right-of-Way: \$ 2,690,000 (2016) Construction: \$ 30,000,000 (2016)Anticipated Start Date of Construction: March 2016Date project incorporated into STIP July 1, 2015 (Appendix K – incorporated by reference into the STIP)Is the project in an MPO Area? 

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>

If yes,  
Name of MPO Indianapolis Metropolitan Planning Organization (MPO)Location of Project in TIP Electronic search of Des. No. 1298035 (Appendix K)Date of incorporation by reference into the STIP July 1, 2015**RIGHT-OF-WAY:**

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0.00	0.00
Commercial	8.49	1.70
Agricultural	0.41	0.00
Forest	0.00	0.00
Wetlands	0.62	0.01
Other: Old Rail right-of-way	0.00	0.00
TOTAL	9.52	1.71

*Describe both Permanent and Temporary right-of-way and describe their current use. Typical and Maximum right-of-way widths (existing and proposed) should also be discussed. Any advance acquisition or reacquisition, either known or suspected, and their impacts on the environmental analysis should be discussed.*

Remarks:

The preferred alternative will require a total of 9.52 acres of permanent right-of-way, 8.49 acres from existing commercial land, 0.41 acre from existing agricultural land, and 0.62 acre from wetlands (Note: wetland total includes 0.16 acres of right-of-way from the open water portion of the existing detention basin in the southeast quadrant of the interchange). The permanent right-of-way will not result in any relocations; however, it does encroach into developable ground in all four quadrants of the interchange. The preferred alternative will require a total of 1.71 acres of temporary right-of-way, 1.70 acres from existing commercial land, and 0.01 acre from the wetland fringe along the existing detention basin in the southeast quadrant of the interchange. The temporary right-of-way will be used to expand the existing detention basin in the southeast quadrant of the interchange. Appendix B displays the right-of-way.

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## Part III – Identification and Evaluation of Impacts of the Proposed Action

### SECTION A – ECOLOGICAL RESOURCES

	<u>Presence</u>	<u>Impacts</u>	
		<u>Yes</u>	<u>No</u>
<b>Streams, Rivers, Watercourses &amp; Jurisdictional Ditches</b>			
Federal Wild and Scenic Rivers			
State Natural, Scenic or Recreational Rivers			
Nationwide Rivers Inventory (NRI) listed			
Outstanding Rivers List for Indiana			
Navigable Waterways			

Remarks:

Information for waters and wetland resources are from two sources: 1) the previously approved June 2012 *OIC Waters of the U.S. Report* and 2) field checks performed by a qualified professional at Corradino on October 24, 2013 and September 10, 2014.

Cheeeney Creek is located approximately 1,650 feet to the northwest of the 106<sup>th</sup> Street overpass of I-69. It flows to the southwest for a short distance and then eventually to the west. The proposed project improvements will not impact the creek. There are roadside ditches and storm drainage in the project area, but none show ordinary high water marks or significant nexus with jurisdictional waters.

	<u>Presence</u>	<u>Impacts</u>	
		<u>Yes</u>	<u>No</u>
<b>Other Surface Waters</b>			
Reservoirs			
Lakes			
Farm Ponds			
Detention Basins	<b>X</b>	<b>X</b>	
Storm Water Management Facilities			
Other: _____			

Remarks:

The detention basin in the southeast quadrant of the interchange will be impacted by the I-69 northbound diverge ramp onto 106<sup>th</sup> Street. The ramp will be built using retaining walls to minimize the footprint. Approximately 0.16 acre of the basin will be filled in, and there will be a new edge for the basin. The proposed basin impacts can be seen in Appendix B for the preferred alternative. This basin connects to a ditch to the south, which is outside the project area. The ditch exhibits an ordinary high water mark, but drains into an underground storm drainage system.

	<u>Presence</u>	<u>Impacts</u>	
		<u>Yes</u>	<u>No</u>
<b>Wetlands</b>	<b>X</b>	<b>X</b>	

Total wetland area: 2.91 acre(s)      Total wetland area impacted: 0.63 acre(s)

(If a determination has not been made for non-isolated/isolated wetlands, fill in the total wetland area impacted above.)

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Wetland	Classification	Total Size (Acres)	Impacted Acres	Comments
C	PEM	0.14	0.14	Emergent ditch wetland in northeast quadrant.
D	PEM	0.12	0.12	Emergent wetland in southwest quadrant.
F	PEM	0.12	0.12	Emergent ditch wetland in southeast quadrant.
G	PEM	0.32	0.09	Emergent wetland along fringe of detention basin in southeast quadrant.
Open Water Pond	PUB	2.21	0.16	Open water portion of the detention basin in southeast quadrant.

## Documentation

## ES Approval Dates

### Wetlands (Mark all that apply)

Wetland Determination  
Wetland Delineation  
USACE Isolated Waters Determination  
Mitigation Plan

X
X

August 10, 2015
August 10, 2015

### Improvements that will not result in any wetland impacts are not practicable because such avoidance would result in (Mark all that apply and explain):

Substantial adverse impacts to adjacent homes, business or other improved properties;  
Substantially increased project costs;  
Unique engineering, traffic, maintenance, or safety problems;  
Substantial adverse social, economic, or environmental impacts, or  
The project not meeting the identified needs.

X
X
X
X

Measures to avoid, minimize, and mitigate wetland impacts need to be discussed in the remarks box.

Remarks:

Wetland delineation for the recently completed *OIC Waters of the U.S. Report* was restricted to the existing I-69 footprint since that project did not acquire additional right-of-way. Relevant excerpts from the *OIC Waters of the U.S. Report* are contained in the appendix of the subject 106<sup>th</sup> Street New Interchange at I-69 project's *Waters of the U.S. Report* (Appendix H). Appendix H contains supplemental information gathered by Corradino LLC during October 24, 2013 and September 10, 2014 field visits and includes data sheets for extending the OIC wetlands outside of the existing I-69 right-of-way, photographs, and aerial mapping.

No National Wetland Inventory wetlands are present, but there are two storm water detention basins in the immediate area of the interchange, just outside the existing right-of-way. The larger basin, referred to as Wetland G and Open Water Pond in the preceding table, is in the southeast quadrant and the smaller basin is in the southwest quadrant. Both are Palustrine, Unconsolidated Bottom with mud substrate (PUB3). A mix of vegetation characteristic of both wetland and upland areas are present. The larger basin is expected to be impacted on its western border, while the smaller is outside the proposed right-of-way.

Impacts to the larger basin have been minimized to the extent practical. Three other emergent wetlands, referred to as Wetlands C, D, and F in the preceding table, have been delineated through field review of the proposed right-of-way area. Wetlands C, D and F will be impacted in their entirety.

In response to early coordination (Appendix D), IDNR's Department of Fish and Wildlife commented that "the tight diamond alternative appears to have the fewest impacts to existing and proposed infrastructure and resources, including the two existing storm water detention basins in the southwest and southeast quadrants." IDNR also stated that while formal approval by the IDNR Division of Water is not required for this project, IDNR recommends "contacting and coordinating with the Indiana Department of Environmental Management (IDEM) 401 program and also the US Army Corps of Engineers (USACE) 404 program." The U.S. Fish and

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Wildlife Service (USFWS) commented that the agency has "no objections to the project as currently proposed", and similar to IDNR, USFWS also recommended coordination with the IDEM 401 program and the USACE 404 program. IDEM noted the requirement to obtain a Section 401 Water Quality Certification in the event that a Section 404 wetlands permit is required from USACE and noted that, even if impacted wetlands and waterbodies are determined to be isolated, as State Isolated Wetland permit may be required from IDEM's Office of Water Quality.

Mitigation of impacted wetlands will be determined during the design and permitting process. The previously discussed Table 4 summarizes the anticipated wetland impacts for the four new interchange build alternatives. Impacts range from 0.52 acre for the TDI to 0.73 acre for the DDI. The preferred alternative has a wetland impact of 0.58 acre, a mere 0.11 acre more than the least impactful alternative. The only alternatives with fewer impacts were the avoidance alternative "No Build", which does not meet the purpose and need of the project, and the Tight Diamond Alternative with 0.52 acre of impact. Retaining walls are proposed for all of the interchange alternatives to reduce the project footprint and minimize impacts.

	<u>Presence</u>	<u>Impacts</u>	<u>Yes</u>	<u>No</u>
<b>Terrestrial Habitat</b>				
Unique or High Quality Habitat				

Use the remarks box to identify each type of habitat and the acres impacted (i.e. forested, grassland, farmland, lawn, etc).

Remarks:

Land use in and near the project is primarily commercial. Dominant vegetation is lawn type plants (*Digitaria*, *Trifolium repens*, *Festuca*, *Schedonorus*, *Poa*, *Plantago major*, etc.). Some of this vegetation will be replaced with hard surface from the addition of ramps along I-69 and the widening of 106<sup>th</sup> Street. A narrow fringe of scrub occurs around the detention basin and the slopes to the 106<sup>th</sup> Street Bridge. These areas consist of common shrubs such as dogwood and invasive honeysuckle. Significant or valuable terrestrial habitat will not be affected by the project.

If there are high incidences of animal movements observed in the project area, or if bridges and other areas appear to be the sole corridor for animal movement, consideration of utilizing wildlife crossings should be taken.

## Karst

Is the proposed project located within or adjacent to the potential Karst Area of Indiana?  
Are karst features located within or adjacent to the footprint of the proposed project?

<u>Yes</u>	<u>No</u>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

If yes, will the project impact any of these karst features?

Use the remarks box to identify any karst features within the project area. (Karst investigation must comply with the Karst MOU, dated October 13, 1993)

Remarks:

The project is located in Hamilton County, which is outside of the designated karst area of Indiana as identified in October 13, 1993 Memorandum of Understanding (MOU) between INDOT, the IDNR, IDEM, and the United States Fish and Wildlife Service (USFWS). No karst features are known to exist within or adjacent to the proposed project area.

	<u>Presence</u>	<u>Impacts</u>	<u>Yes</u>	<u>No</u>
<b>Threatened or Endangered Species</b>				
Within the known range of any federal species				
Any critical habitat identified within project area				
Federal species found in project area (based upon informal consultation)				
State species found in project area (based upon consultation with IDNR)				

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Is Section 7 formal consultation required for this action? **Yes**  
☐ **No**  
☒

Remarks:

The Indiana Natural Heritage Data Center was checked during early coordination (Appendix D), and there are no ETR species or significant areas documented within 0.5 mile of the project area. All of the state of Indiana is within the range of the federally endangered Indiana bat (*Myotis sodalis*).

IDNR was coordinated with for this project on August 13, 2014 (see Appendix D, page 5). IDNR responded that there are no plant or animal species listed as state or federally threatened, endangered, or rare in the project vicinity. IDNR noted that the Tight Diamond Alternative has the least impacts to resources, while the SPUI Alternative and the DDI Alternative have the highest impacts; however, IDNR did not make a recommendation regarding preferred interchange type.

USFWS was coordinated with for this project on August 19, 2014 (see Appendix D, page 10). USFWS stated the agency has no objections to the project as currently proposed.

## SECTION B – OTHER RESOURCES

### Drinking Water Resources

Wellhead Protection Area  
Public Water System(s)  
Residential Well(s)  
Source Water Protection Area(s)  
Sole Source Aquifer (SSA)

#### Presence

X

#### Impacts

Yes	No
X	

If a SSA is present, answer the following:

Is the Project in the St. Joseph Aquifer System?  
Is the FHWA/EPA SSA MOU Applicable?  
Initial Groundwater Assessment Required?  
Detailed Groundwater Assessment Required?

#### Yes


#### No


Remarks:

The project is not located within the St. Joseph Aquifer System, the only legally designated sole source aquifer in Indiana. Per the Indiana Department of Environmental Management's Wellhead Proximity Determinator website (<http://idemmaps.idem.in.gov/whpa/>) accessed on July 22, 2014 by Corradino, LLC, the project is not located within a Wellhead Protection Area. In response to early coordination (Appendix D), IDEM's Ground Water Section determined that "the site is not located within a Wellhead Protection Area."

The project may impact existing water lines owned by Citizens Energy Group. Utility coordination will occur during the design and construction phase to aid in any relocation of the water utility.

### Flood Plains

Longitudinal Encroachment  
Transverse Encroachment  
Project located within a regulated floodplain  
Homes located in floodplain within 1000' up/downstream from project

#### Presence


#### Impacts

Yes	No

Discuss impacts according to classification system described in the "Procedural Manual for Preparing Environmental Studies".

Remarks:

The project does not encroach upon a regulatory floodplain as determined from available FEMA flood plain maps (Appendix E, page 9). Therefore, it does not fall within the guidelines for the implementation of 23 CFR 650, 23 CFR 771, and 44 CFR.

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	<u>Presence</u>	<u>Impacts</u>	
		<u>Yes</u>	<u>No</u>
<b>Farmland</b>			
Agricultural Lands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prime Farmland (per NRCS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Total Points (from Section VII of CPA-106/AD-1006\*                       
*\*If 160 or greater, see CE Manual for guidance.*

See CE Manual for guidance to determine which NRCS form is appropriate for your project.

Remarks: 

The Natural Resources Conservation Service (NRCS) was coordinated with for this project on August 19, 2014 (see Appendix D, page 8). NRCS responded that the project will not cause a conversion of prime farmland. None of the land within the project limits meets the definition of farmland under the Farmland Protection Policy Act (FPPA). The requirements of the FPPA do not apply to this project.

## SECTION C – CULTURAL RESOURCES

	<u>Category</u>	<u>Type</u>	<u>INDOT Approval Dates</u>	<u>N/A</u>
Minor Projects PA Clearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Eligible and/or Listed Resource Present

#### Results of Research

Archaeology	<input type="checkbox"/>
NRHP Buildings/Site(s)	<input type="checkbox"/>
NRHP District(s)	<input type="checkbox"/>
NRHP Bridge(s)	<input type="checkbox"/>

#### Project Effect

No Historic Properties Affected ☒ No Adverse Effect ☐ Adverse Effect ☐

### Documentation Prepared\*

**Documentation** (mark all that apply)

		<u>ES/FHWA Approval Date(s)</u>	<u>SHPO Approval Date(s)</u>
Historic Properties Short Report	<input type="checkbox"/>		
Historic Property Report	<input checked="" type="checkbox"/>	July 17, 2013	October 4, 2013
Archaeological Records Check/ Review	<input checked="" type="checkbox"/>	July 11, 2013	August 16, 2013
Archaeological Phase Ia Survey Report	<input type="checkbox"/>		
Archaeological Phase Ic Survey Report	<input type="checkbox"/>		
Archaeological Phase II Investigation Report	<input type="checkbox"/>		
Archaeological Phase III Data Recovery	<input type="checkbox"/>		
APE, Eligibility and Effect Determination	<input checked="" type="checkbox"/>	April 10, 2015	May 11, 2015
800.11 Documentation	<input checked="" type="checkbox"/>	April 10, 2015	May 11, 2015

See Appendix F for 800.11(d) documentation.

Memorandum of Agreement (MOA) ☐

**MOA Signature Dates** (List all signatories)

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*Describe all efforts to document cultural resources, including a detailed summary of the Section 106 process, using the categories outlined in the remarks box. The completion of the Section 106 process requires that a Legal Notice be published in local newspapers. Please indicate the publication date, name of paper(s) and the comment period deadline. Likewise include any further Section 106 work which must be completed at a later date, such as mitigation or deep trenching.*

Remarks:

**Area of Potential Effect (APE):**

Due to the nature of the proposed work, the Area of Potential Effect (APE) for this project generally encompasses the properties immediately adjacent to the project limits that have a viewshed of the project (Appendix F3, Pages 12 to 14). The APE limits, for above-ground resources, has been defined as approximately 2,930 feet north and 3,120 feet south of the center point of 106th Street over I-69, and approximately 1,950 feet west and 2,720 feet east of the center point of 106th Street over I-69. The archaeological APE has been defined as the project footprint.

**Consulting Parties Invitations and Meeting:**

FHWA, IDNR-SHPO, and INDOT Cultural Resources Office (CRO) are automatic Section 106 consulting parties. Invitations to become consulting parties and participate in a September 19, 2013 consulting parties meeting were sent by Corradino, LLC to the following:

- Hamilton County Highway Department;
- Hamilton County Commissioners Office;
- Fishers Town Council;
- Hamilton County Historian;
- Historic Landmarks Foundation; and,
- Kincaid Developers, Inc. (property owner).

The consulting parties meeting was held on-site on September 19, 2013 and was attended by INDOT CRO, FHWA, IDNR-SHPO, Corradino, H&H Associates, Hamilton County Historian's office, and Kincaid Developers (Appendix F3, page 34). The Archeological Short Report and the HPR were provided to meeting participants ahead of time. Consensus was reached regarding the APE and eligibility.

**Archaeology:**

As one of the project's cultural resources qualified professionals, Weintraut and Associates prepared the Archaeological Short Report on July 17, 2013 (Appendix F3, page 26). Through a combination of literature search and limited Phase 1a reconnaissance, the Archaeological Short Report found no archaeological resources. This document was reviewed by the INDOT Cultural Resources Office (CRO) and approved on July 11, 2013. The Archaeological Short Report was submitted to IDNR-SHPO on July 17, 2013. IDNR-SHPO concurred with the Archeological Short Report on August 16, 2013.

**Historic Properties:**

As one of the project's cultural resources qualified professionals, H&H Associates LLC prepared the HPR on August 16, 2013 (Appendix F3, page 24). INDOT CRO reviewed and approved the HPR on July 17, 2013. The Flanagan-Kincaid House, originally thought to likely be eligible for listing in the National Register of Historic Places (NRHP) as discussed in the September 19, 2013 consulting parties meeting, was relocated from its original position in the southwest corner of the 106th Street/Kincaid Drive intersection to its current location along the east side of I-69, approximately 2,000 feet north of 106<sup>th</sup> Street. Interchange alternatives were being analyzed to conduct construction without requiring property from the historic boundary of the Flanagan-Kincaid House when preservation groups, without any coordination or consultation with the project team including INDOT and FHWA, raised funding and orchestrated the relocation of the structure. The new location is outside of the project right-of-way but still within the APE. This move was conducted on October 4, 2014. In a letter dated October 22, 2014, IDNR-SHPO communicated the agency's position that the new location and orientation of the Flanagan-Kincaid house eliminates its eligibility for listing in the NRHP.

**Effect Finding and 800.11(f) Documentation:** INDOT CRO signed, on behalf of FHWA, the APE and Eligibility Determinations and the "No Historic Properties Affected" Finding on April 10, 2015 (Appendix F3, page 2). Corradino LLC distributed the Effect Finding and 800.11(d) Documentation on April 30, 2015 to FHWA, IDNR-SHPO, and the consulting parties that chose to participate in the consultation process, requesting written comment within 30 days. IDNR-SHPO responded with a concurrence letter on May 11, 2015. No other comments were received from consulting parties.

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**Public Involvement:**

Public notice of the "No Historic Properties Affected" Finding and the 800.11(d) Documentation was advertised in the *Indianapolis Star* on May 2, 2015, with a 30-day comment period (Appendix F2). The 800.11(d) documentation was made available for public review and comment at Corradino LLC's downtown Indianapolis office. No responses to the legal add were received. The Section 106 process has been completed and the responsibilities of the FHWA under Section 106 have been fulfilled.

## SECTION D – SECTION 4(f) RESOURCES/ SECTION 6(f) RESOURCES

**Section 4(f) Involvement** (mark all that apply)

**Parks & Other Recreational Land**

Publicly owned park  
Publicly owned recreation area  
Other (school, state/national forest, bikeway, etc.)

**Presence**


**Use**

Yes	No

**Evaluations**

**Prepared**

Programmatic Section 4(f)\*  
"De minimis" Impact\*  
Individual Section 4(f)


**FHWA**  
**Approval date**

--

**Wildlife & Waterfowl Refuges**

National Wildlife Refuge  
National Natural Landmark  
State Wildlife Area  
State Nature Preserve

**Presence**


**Use**

Yes	No

**Evaluations**

**Prepared**

Programmatic Section 4(f)\*  
"De minimis" Impact\*  
Individual Section 4(f)


**FHWA**  
**Approval date**

--

**Historic Properties**

Sites eligible and/or listed on the NRHP

**Presence**

--

**Use**

Yes	No

**Evaluations**

**Prepared**

Programmatic Section 4(f)\*  
"De minimis" Impact\*  
Individual Section 4(f)


**FHWA**  
**Approval date**

--

*\*FHWA approval of the environmental document also serves as approval of any Section 4f Programmatic and/or De minimis evaluation(s) discussed below.*

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Discuss Programmatic Section 4(f) and "de minimis" Section 4(f) impacts in the remarks box below. Individual Section 4(f) documentation must be separate Draft and Final documents. For further discussions on Programmatic, "de minimis" and Individual Section 4(f) evaluations please refer to the "Procedural Manual for the Preparation of Environmental Studies". Discuss proposed alternatives that satisfy the requirements of Section 4(f).

Remarks:

Cheeeney Creek Natural Area is located approximately 1,500 feet northwest of the project area and extends northeast from there. The address is 11030 Fishers Pointe Boulevard. Due to the limited nature of construction and the project right-of-way, no impacts are anticipated to the Cheeeney Creek Natural Area.

Four existing trails and two planned trails are within a half-mile. None will be impacted by the project. The Cheeeney Creek Natural Area Trail is a natural trail approximately 2,000 feet northwest of the reference point. An asphalt trail connects Cheeeney Creek Natural Area to 106<sup>th</sup> Street approximately 1,000 feet to the west of the 106<sup>th</sup> Street overpass of I-69. Another asphalt trail extends 1,500 feet east of the reference point along the south side of 106<sup>th</sup> Street connecting Lantern Road and Muir Lane. There is an asphalt trail 1,500 feet to the east of the reference point running from 106<sup>th</sup> Street to the south. A planned asphalt trail along the south side of 106<sup>th</sup> Street will connect Hague Road and Lantern Road west of the project. Finally, a second planned asphalt trail will connect Cheeeney Creek and Lantern Road along the north side of 106<sup>th</sup> street. These planned asphalt trails are separate projects from the new I-69 interchange at 106<sup>th</sup> Street project.

Although it is not listed as a named recreational facility, there is a baseball diamond along the east side of I-69, approximately 1,600 feet north of 106<sup>th</sup> Street. This is a privately owned property and is not open for public use. The minimal strip of right-of-way that will be acquired from this parcel along I-69 will not impact the ball diamond.

No 4(f) property impacts will result as a part of this project.

**Section 6(f) Involvement****Presence****Use****Yes****No****Section 6(f) Property**☐☐☐

Discuss proposed alternatives that satisfy the requirements of Section 6(f). Discuss any Section 6(f) involvement.

Remarks:

No Section 6(f) resources are affected, as determined by property ownership records obtained through the Hamilton County Geographic Information System (GIS), or land records searches completed during preliminary design. The National Parks Service (NPS) website was searched by Corradino on June 23, 2015 to determine if any Land and Water Conservation Fund (LWCF) sites exist in proximity to the project area (Appendix D, Page 22). No LWCF sites exist in proximity to the project area.

**SECTION E – AIR QUALITY****Air Quality****Conformity Status of the Project**

Is the project in an air quality non-attainment or maintenance area?

☒☐

If YES, then:

Is the project in the most current MPO TIP?

☒☐

Is the project exempt from conformity?

☐☒

If the project is NOT exempt from conformity, then:

Is the project in the Transportation Plan (TP)?

☒☐

Is a hot spot analysis required (CO/PM)?

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Level of MSAT Analysis required?

Level 1a ☐ Level 1b ☒ Level 2 ☐ Level 3 ☐ Level 4 ☐ Level 5 ☐

Remarks:

This project is located in Hamilton County. Hamilton County was previously a maintenance area for Ozone. The 1997 Ozone standard has since been revoked, and a maintenance plan is no longer required. Hamilton County is currently a maintenance area for PM2.5.

The project is located in the Indianapolis MPO Transportation Improvement Program (TIP) for years 2016 to 2019. The project was incorporated into the Statewide Transportation Improvement Program (STIP), for years 2016 to 2019, on July 1, 2015. Appendix K contains the relevant TIP and STIP excerpts.

Regarding the conformity procedures of 40 CFR Part 93, FHWA organized an inter-agency PM2.5 project-level consultation meeting for several large-scale Indiana construction projects. The subject new I-69 Interchange at 106<sup>th</sup> Street was included in this discussion. Participants included FHWA, United States Environmental Protection Agency (USEPA), INDOT, and IDEM. The inter-agency consultation group concurred that the new I-69 interchange at 106<sup>th</sup> Street is not a project of air quality concern and does not require a quantitative hotspot analysis. Appendix L contains the meeting invitation, presentation materials, and the minutes of the September 18, 2014 meeting.

This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative.

USEPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

### SECTION F – NOISE

#### Noise

Yes

No

Is a noise analysis required in accordance with FHWA regulations and INDOT's traffic noise policy?

☒☐

No

Yes/ Date

#### ES Review of Noise Analysis

May 8, 2015

Remarks:

The northwest quadrant of the proposed interchange was analyzed separately in the previously approved *I-69 Expansion Design Projects Traffic Noise Impact Analysis* (October 2014, Des. #s 1383332, 1383336). Noise barrier was determined to not be reasonable and feasible in that report. INDOT Environmental Services (ES) provided technical sufficiency for that report.

The *Noise Study Report: I-69 New Interchange at 106th Street, Hamilton County* (Des. #: 1298035) was prepared by Corradino LLC for this project on May 7, 2015 and is contained in Appendix I. It was prepared in accordance with 23 CFR 772 and the INDOT's *Traffic Noise Policy*. The purpose of this project is to add an exit in Fishers and improve access, while relieving traffic demand on the interchanges

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to the south and north. This traffic noise analysis identified nine receptors within the project area including six Category E receptors (Office, Business), two Category C receptors (Church, School), and one Category F (Retail). Three Category E receptors would experience a noise impact in the design year by approaching the NAC for Category E.

Two new office buildings built since this project was started, the Roche office building and the Flanagan-Kincaid House (assumed future office use) at its new location, will experience noise levels higher than the applicable 71 dBA office criterion. These isolated locations cannot be reasonably mitigated. This conclusion is based upon preliminary design costs and assumes that no substantial changes will be made during final design.

Based on the studies thus far accomplished, the State of Indiana has not identified any locations where noise abatement is likely. Noise abatement at these locations is based upon preliminary design costs and design criteria. Noise abatement has been not been found to be feasible or reasonable at this location. A reevaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is feasible and reasonable, the abatement measures might be provided. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project's final design and the public involvement processes.

### SECTION G – COMMUNITY IMPACTS

#### Regional, Community & Neighborhood Factors

Will the proposed action comply with the local/regional development patterns for the area?

Yes

No

☒

☐

Will the proposed action result in substantial impacts to community cohesion?

☐

☒

Will the proposed action result in substantial impacts to local tax base or property values?

☐

☒

Will construction activities impact community events (festivals, fairs, etc.)?

☐

☒

Does the community have an approved ADA transition plan?

☒

☐

If No, are steps being made to advance the community's transition plan?

☐

☐

Does the project comply with the transition plan? (explain in the remarks box)

☒

☐

Remarks:

No significant economic or community impacts are expected as a result of this project. The proposed 6 to 8 foot variable width sidewalk along the north side of 106<sup>th</sup> Street, as well as all curb ramps and cross walks associated with signalized intersections and roundabouts for this project, will be designed to be compliant with the most recent standards set forth in the Americans with Disabilities Act (ADA).

#### Indirect and Cumulative Impacts

Yes

No

Will the proposed action result in substantial indirect or cumulative impacts?

☐

☒

Remarks:

This project will not result in indirect or cumulative impacts. The majority of the open ground along the 106<sup>th</sup> Street corridor in Fishers is already zoned and/or platted for development. All four quadrants of the new I-69 interchange at 106<sup>th</sup> Street have platted commercial subdivisions, and construction of new office buildings is currently underway.

#### Public Facilities & Services

Yes

No

Will the proposed action result in substantial impacts on health and educational facilities, public and private utilities, emergency services, religious institutions, airports, public transportation or pedestrian and bicycle facilities? *Discuss how the maintenance of traffic will affect public facilities and services.*

☐

☒

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**Remarks:**

The project will not negatively impact health and educational facilities, public private utilities, emergency services, religious institutions, airports, or public transportation. School corporations, hospitals, public transportation, and emergency service units will be coordinated with prior to construction. Traffic will be maintained on existing roads and the 106<sup>th</sup> Street overpass until a time when the existing overpass bridge structure is demolished. At that time, an official local detour route will be signed. Provisions will be made to maintain access to any adjacent business along 106<sup>th</sup> Street within the construction zone that does not already have additional access from a source other than 106<sup>th</sup> Street. The existing land uses within the project area are commercial/office in nature and, unlike many commercial/retail businesses such as gas stations, supermarkets, and restaurants, commercial/office businesses do not depend on drive-by traffic for their viability. Commercial/office businesses can better withstand some of the inconvenience that could come from construction activities.

**Environmental Justice (EJ) (Presidential EO 12898)**

During the development of the project were EJ issues identified?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Does the project require an EJ analysis?

If YES, then:

Are any EJ populations located within the project area?

<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Will the project result in adversely high or disproportionate impacts to EJ populations?

**Remarks:**

All Environmental Assessment level documents require an Environmental Justice (EJ) analysis. An EJ concern is considered any impact that would have a disproportionately high and adverse effect on an environmental justice population. For EJ analysis, the reference community is typically a county, city, or town that contains the project and is called the community of comparison (COC). The community that overlaps the project limits is called the affected community (AC). Affected communities which are more than 50 percent minority or low-income are automatically EJ populations. For all other affected communities, an EJ population exists if the low-income population or minority population is 125 percent of the COC.

The project area falls within census tract 1108.10 within Hamilton County, and this census tract was considered the AC. The information below compares the data for the AC to the COC, using 2012 American Community Survey 5-year average data. The AC has lower percentages of minority and low-income populations than the COC, which contains 13.7% minority population and 4.7% low-income population, so there is no disproportionately high and adverse impact to populations of EJ concern. Additionally, no local impacts to households, such as relocations, are anticipated for this project (Appendix J).

	Community of Comparison – Hamilton County	Affected Community – Census Tract 1108.10
Minority	13.7 %	10.3 %
Low-income	4.7%	4.2%

The project will individually and collectively improve local transportation and safety and bring those facilities to be improved into compliance with the Americans with Disabilities Act.

**Relocation of People, Businesses or Farms**

Will the proposed action result in the relocation of people, businesses or farms?

Is a Business Information Survey (BIS) required?

Is a Conceptual Stage Relocation Study (CSRS) required?

Has utility relocation coordination been initiated for this project?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Number of relocations:      Residences: 0      Businesses: 0      Farms: 0      Other: 0

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If a BIS or CSRS is required, discuss the results in the remarks box.

Remarks: No relocations of people, businesses, or farms will take place as a result of this project. Utility coordination and relocation is on-going as final design progresses for this project.

## SECTION H – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

### Hazardous Materials & Regulated Substances (Mark all that apply)

Red Flag Investigation

Phase I Environmental Site Assessment (Phase I ESA)

Phase II Environmental Site Assessment (Phase II ESA)

Design/Specifications for Remediation required?

### Documentation

X

**No      Yes/ Date**

**ES Review of Investigations**

October 2, 2013

Include a summary of findings for each investigation.

Remarks: The Red Flag Investigation (Appendix E) was completed on September 19, 2013 by Corradino, LLC and was approved by INDOT ES on October 2, 2013. No brownfield sites, waste sites, underground storage tanks, or sites of Hazmat concern were identified within ½ mile radius of the project. Further investigation for hazardous materials is not required at this time.

## SECTION I – PERMITS CHECKLIST

**Permits** (mark all that apply)

**Likely Required**

### Army Corps of Engineers (404/Section10 Permit)

Individual Permit (IP)

Nationwide Permit (NWP)

Regional General Permit (RGP)

Pre-Construction Notification (PCN)

Other

Wetland Mitigation required

Stream Mitigation required


### IDEM

Section 401 WQC

Isolated Wetlands determination

Rule 5

Other

Wetland Mitigation required

Stream Mitigation required

X
X
X

### IDNR

Construction in a Floodway

Navigable Waterway Permit

Lake Preservation Permit

Other

Mitigation Required


### US Coast Guard Section 9 Bridge Permit

**Others (Please discuss in the remarks box below)**

X
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Des. No. 1298035

Remarks:

A Rule 5 Permit will be required since disturbance of more than an acre of property is expected. No jurisdictional waters are impacted by this project; therefore, no USACE 404 permitting is required. The project will impact approximately 0.63 acre of isolated wetland resulting in the need for an IDEM 401 Individual Permit. A drainage permit from Hamilton County will be required. A Federal Aviation Administration (FAA) Tall-Structure Permit will be required due to the project's proximity to the Indianapolis Metropolitan Airport in Fishers. It is the responsibility of the designer to obtain all permits required for the project.

### SECTION J- ENVIRONMENTAL COMMITMENTS

*The following information should be provided below: List all commitments, name of agency/organization requesting the commitment(s), and indicating which are firm and which are for further consideration. The commitments should be numbered.*

Remarks:

#### Firm

1. If any contaminated soils are discovered during this project, they may be subject to disposal as hazardous waste. Please contact the OLQ at 317-308-3103 to obtain information on proper disposal procedures. (IDEM)
2. If any potential hazardous materials are discovered during construction the IDEM Spill Line should be notified with details of the discovery within 24 hours. INDOT Environmental Services, Hazardous Materials Unit should then be contacted. (INDOT ES)
3. If PCBs are found at this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding management of any PCB wastes from this site. (IDEM )
4. If permanent or temporary right-of-way amounts change, INDOT Environmental Services will be contacted immediately. (INDOT ES)
5. Any work in a wetland area within INDOT's right-of-way or in borrow/waste areas is prohibited unless specifically allowed in the US Army Corps of Engineers or IDEM permit. (INDOT ES)
6. If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al.) and State Law (IC 14-21-1) require that work must stop immediately and that the discovery must be reported to the Division of Historic Preservation and Archaeology in the Indiana Department of Natural Resources within 2 business days. (IDNR-SHPO)
7. The Indianapolis Metropolitan Airport is located 7300 feet southwest of the project. If any permanent structures or equipment (including cranes) utilized for the project penetrates the 100:1 slope from the airport, FAA Form 7460 (Notice of Proposed Construction or Alteration) must be filed. For assistance contact Marcus Dial, INDOT Office of Aviation, 317-232-1494 (INDOT)
8. If the project involves the installation or removal of an underground storage tank, or involves contamination from an underground storage tank, you must contact the IDEM Underground Storage Tank program at 317/308-3039. (IDEM)

#### For Consideration

9. Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion. (IDNR)
10. Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30. (IDNR)
11. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized. (IDNR)
12. Seed and protect all disturbed streambanks and slopes that are 3:1 or steeper with erosion control blankets (follow manufacturer's recommendations for selection and installation); seed and apply

## Indiana Department of Transportation

County Hamilton

Route I-69 at 106<sup>th</sup> Street

Des. No. 1298035

mulch on all other disturbed areas. (IDNR)

13. The physical disturbance of the stream and riparian vegetation, especially large trees overhanging any affected water bodies should be limited to only that which is absolutely necessary to complete the project. (IDEM)
14. Reasonable precautions must be taken to minimize fugitive dust emissions from construction and demolition activities. (IDEM)

### SECTION K- EARLY COORDINATION

*Please list the date coordination was sent and all agencies that were contacted as a part of the development of this Environmental Study. Also, include the date of their response or indicate that no response was received. INDOT and FHWA are automatically considered early coordination participants and should only be listed if a response is received.*

Remarks:

An Early Coordination Letter with accompanying graphics was sent out June 6, 2014. A date in the table below means a response was received. All early coordination documentation is contained in Appendix D. No coordinating agencies reported any concern with the project or the preferred alternative.

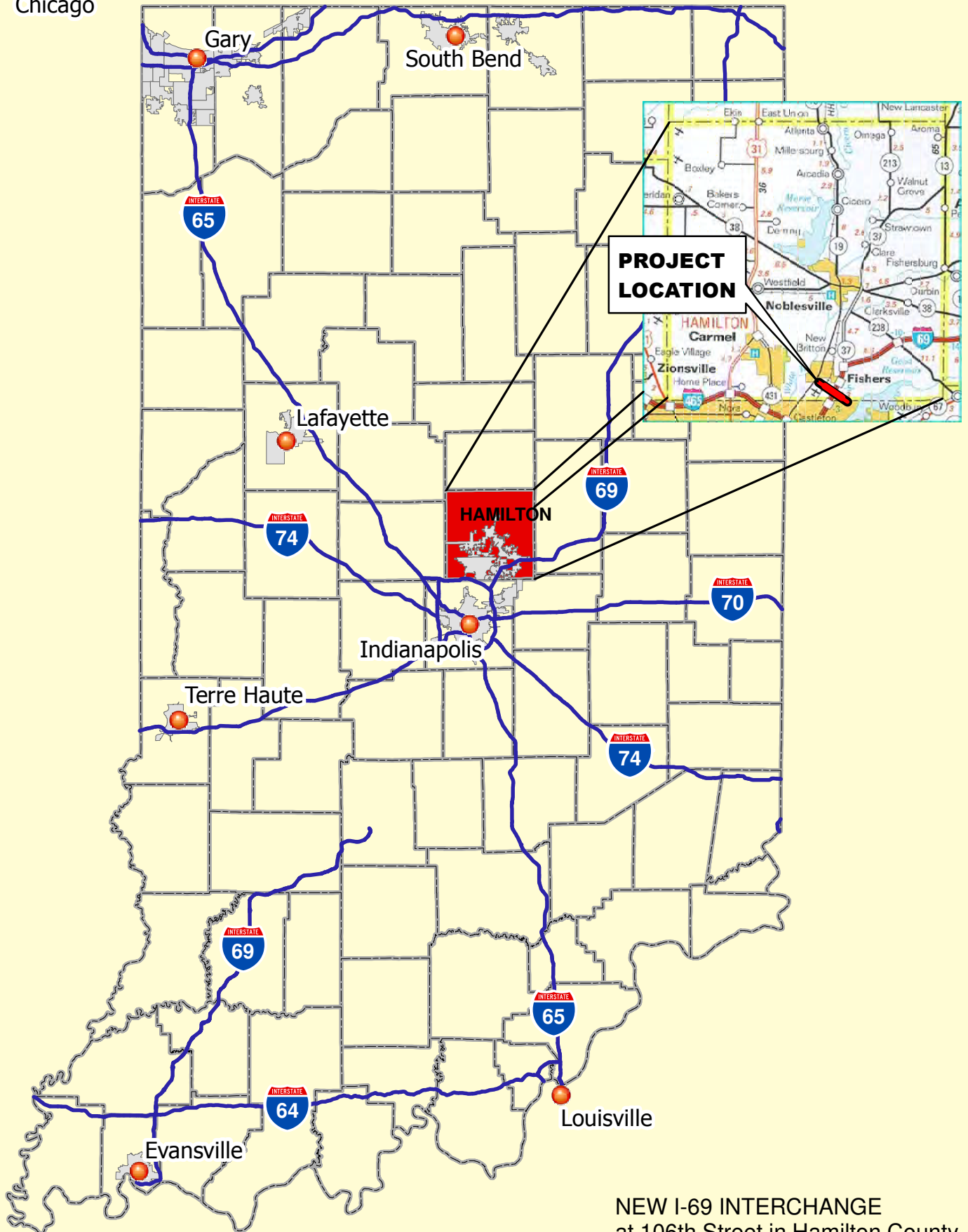
Agency	Date Contacted	Comment Received
IDEM – Electronic Submittal	August 13, 2014	August 13, 2014
US Fish and Wildlife Service	August 13, 2014	August 19, 2014
US Dept. of Housing and Urban Develop.	August 13, 2014	September 2, 2014
National Park Service	August 13, 2014	No Response
Indianapolis MPO	August 13, 2014	No Response
INDOT – Aviation Section	August 13, 2014	August 18, 2014
INDOT – Office of Public Involvement	August 13, 2014	September 11, 2014
IDNR – SHPO (via Section 106 process)	July 11, 2013	August 16, 2014
IDNR – Fish and Wildlife	August 13, 2014	September 12, 2014
IDEM - Groundwater	August 13, 2014	August 22, 2014
Indiana Geological Survey	August 13, 2014	October 20, 2014
Natural Resources Conservation Service	August 13, 2014	August 19, 2014

# **Appendix A**

## Location and Project Mapping

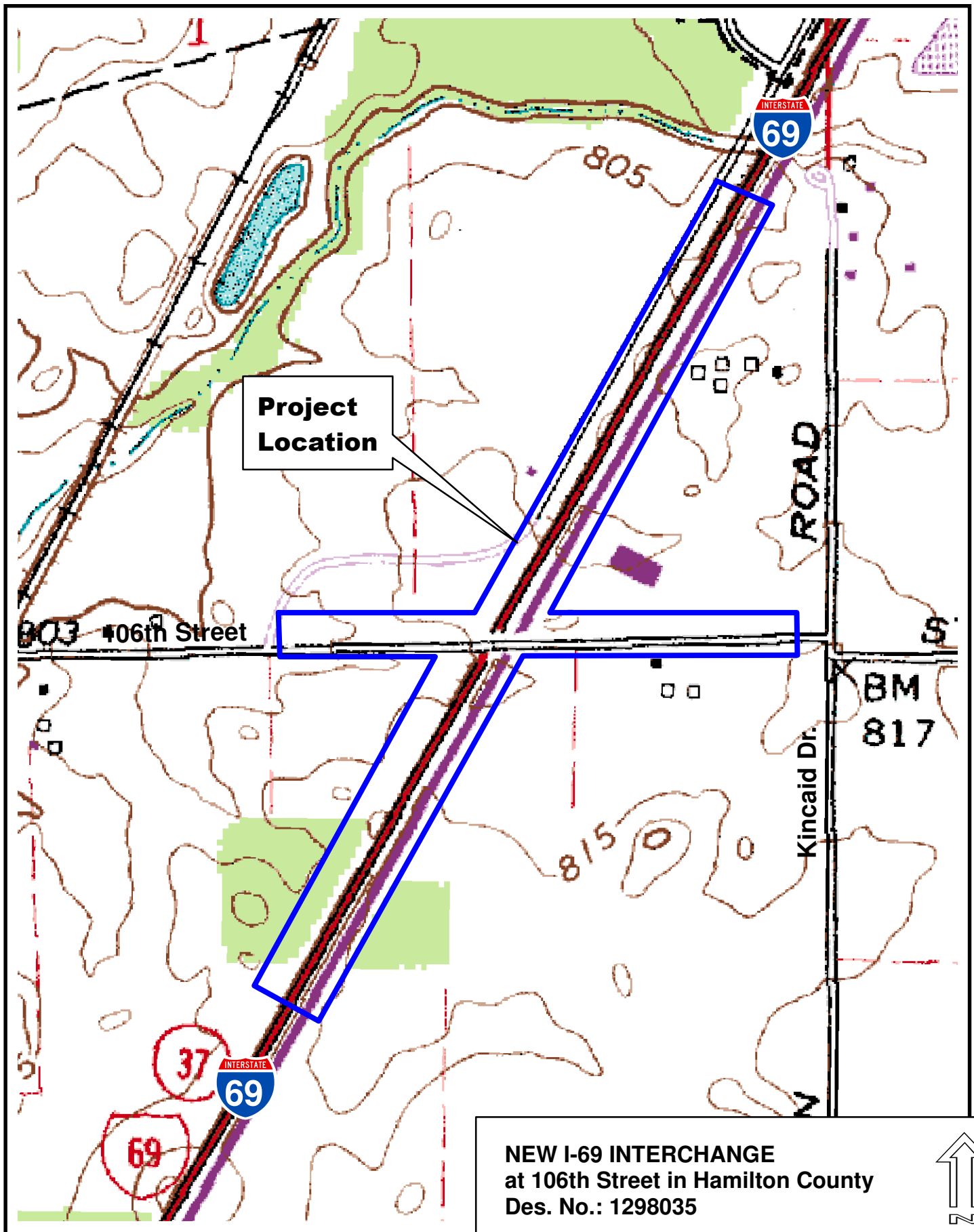
Chicago

## LOCATION MAP



NEW I-69 INTERCHANGE  
at 106th Street in Hamilton County  
Des. No.: 1298035

# USGS TOPOGRAPHIC MAP

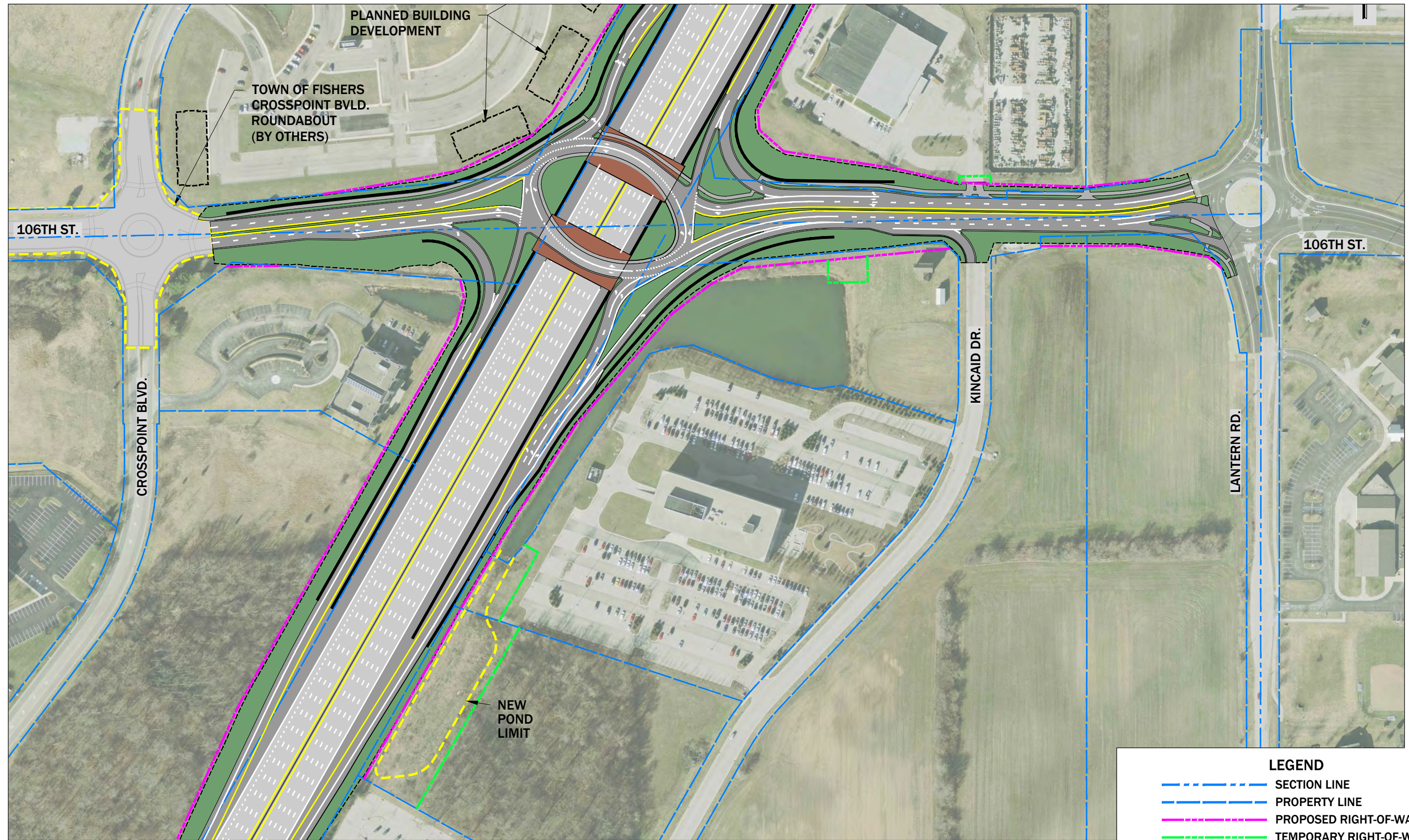


# 2012 AERIAL IMAGERY



# **Appendix B**

## Interchange Options Schematic Exhibits

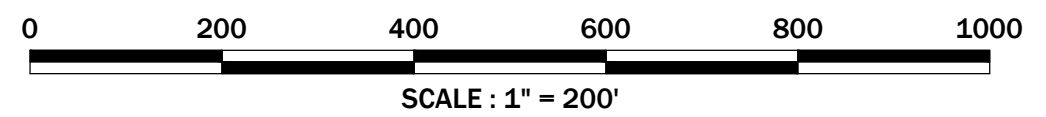


**LEGEND**

- SECTION LINE
- PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY RIGHT-OF-WAY
- CONSTRUCTION LIMITS

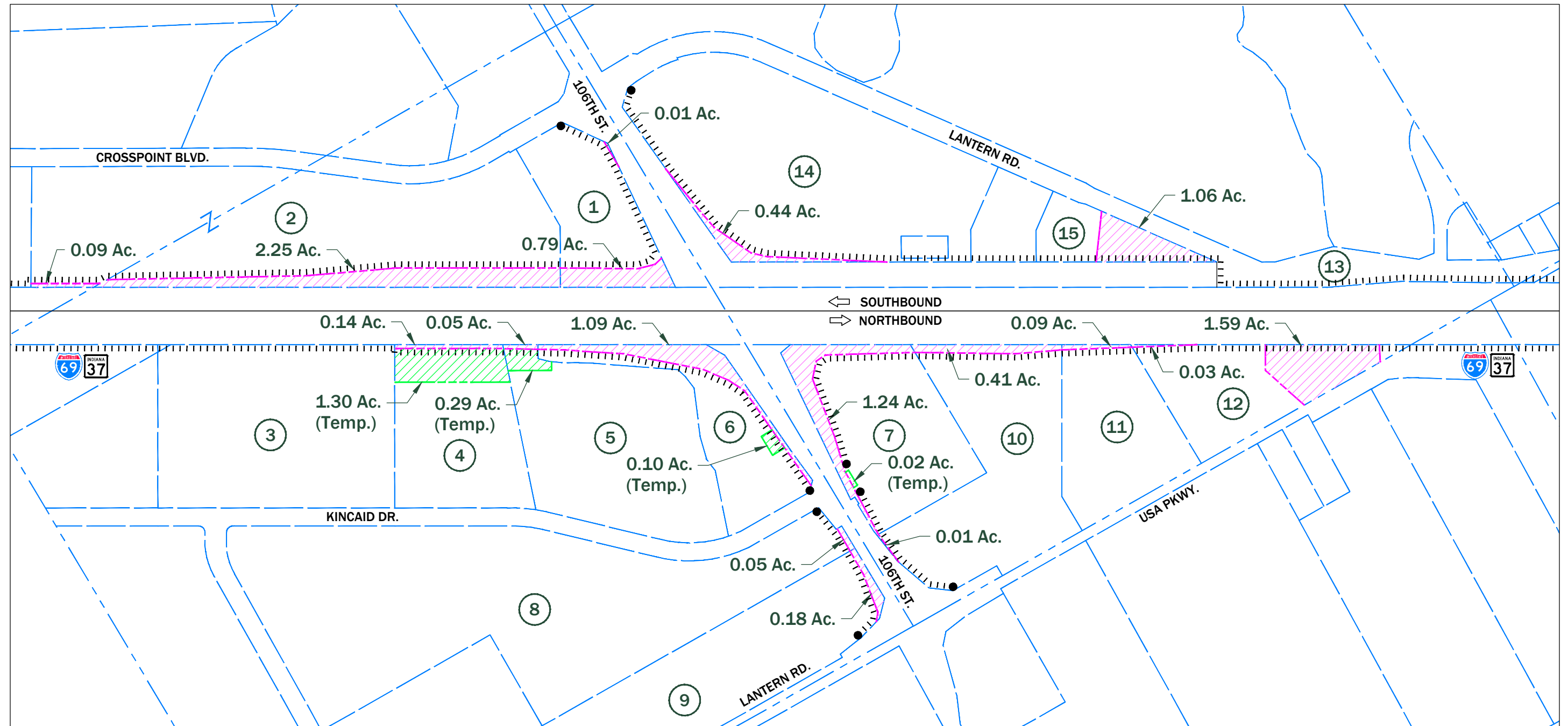
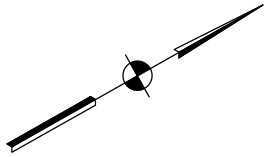


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 Indianapolis, Indiana 46219  
 Phone (317) 895-2585  
 Fax (317) 895-2596 www.ucindy.com



**INDIANA DEPARTMENT OF TRANSPORTATION**

NEW INTERCHANGE PROJECT I-69 AND 106TH STREET  
**ROUNDAABOUT OPTION**



NOTE: PARCEL 13 WILL REQUIRE RIGHT-OF-WAY ENGINEERING TO MODIFY THE LIMITED ACCESS LINE BUT WILL NOT REQUIRE ACQUISITION.

**R/W LEGEND**  
10 PARCEL NUMBER  
PROPOSED RIGHT-OF-WAY AREA  
TEMPORARY RIGHT-OF-WAY AREA

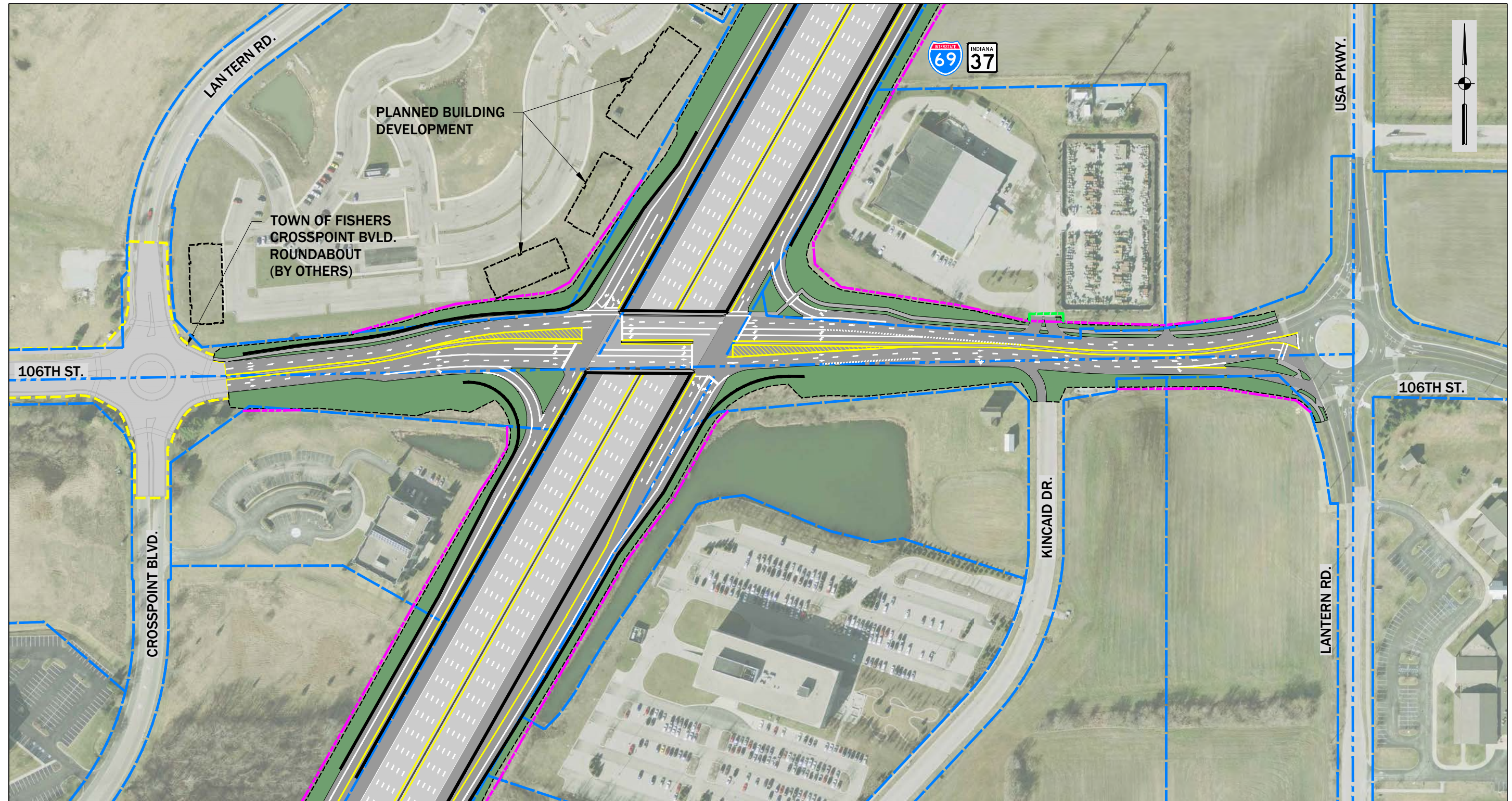
**LEGEND**  
SECTION LINE  
PROPERTY LINE  
PROPOSED RIGHT-OF-WAY  
TEMPORARY RIGHT-OF-WAY  
LIMITED ACCESS RIGHT-OF-WAY  
BEGIN/END L.A. RIGHT-OF-WAY



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0 400 800 1200 1600 2000  
SCALE : 1" = 400'

INDIANA DEPARTMENT OF TRANSPORTATION  
NEW INTERCHANGE PROJECT I-69 AND 106TH STREET  
ROUNDAABOUT OPTION RIGHT-OF WAY

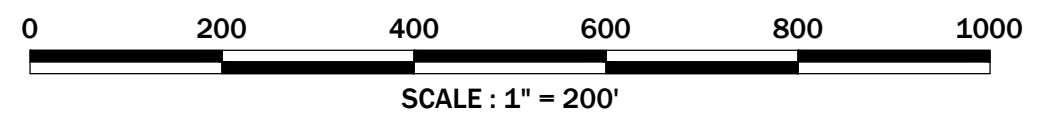


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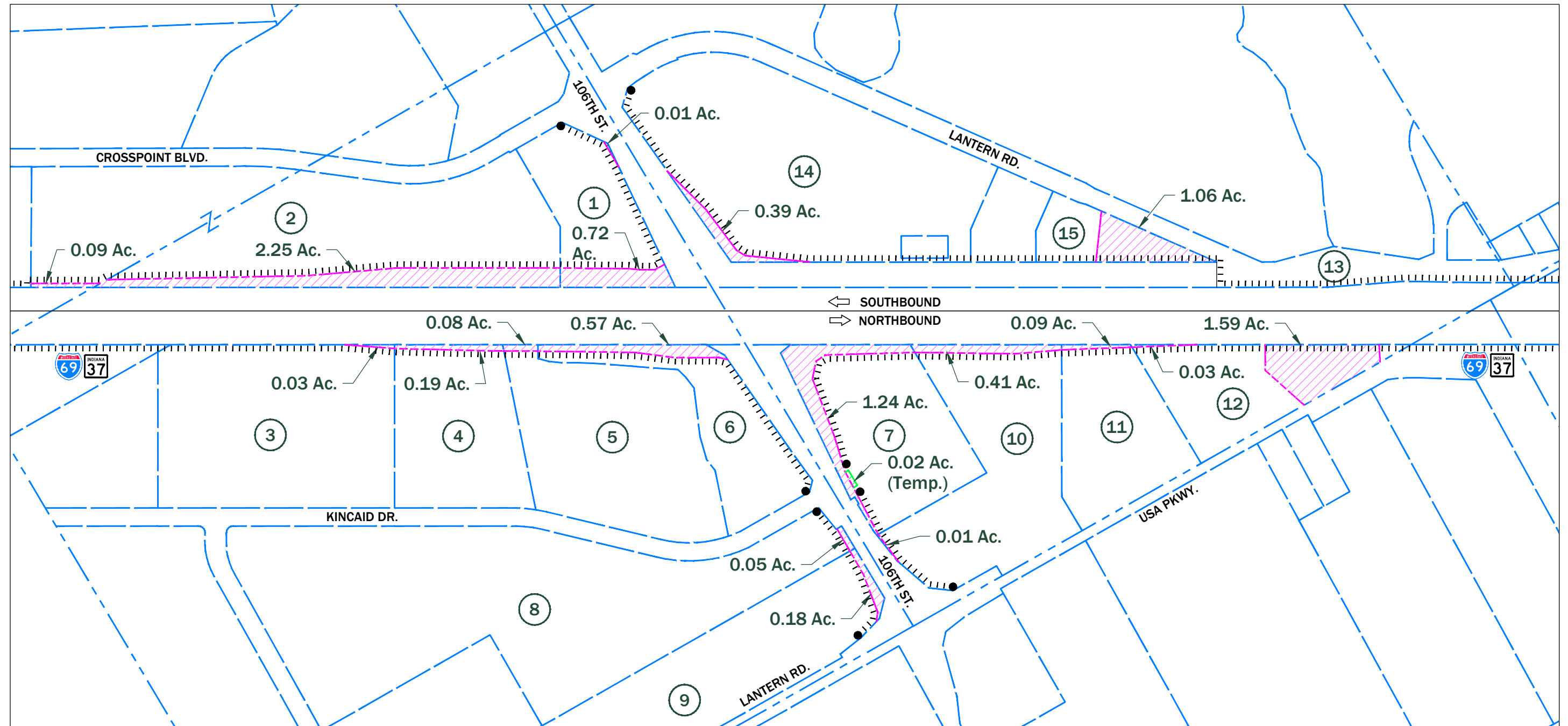
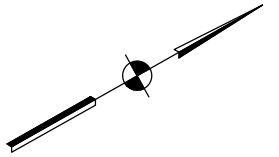
- SECTION LINE
- PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY RIGHT-OF-WAY
- CONSTRUCTION LIMITS



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**INDIANA DEPARTMENT OF TRANSPORTATION**  
 NEW INTERCHANGE PROJECT I-69 AND 106TH STREET  
**TIGHT DIAMOND OPTION**



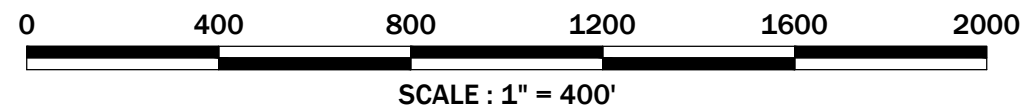
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- R/W LEGEND**
- 10 PARCEL NUMBER
  - PROPOSED RIGHT-OF-WAY AREA
  - TEMPORARY RIGHT-OF-WAY AREA

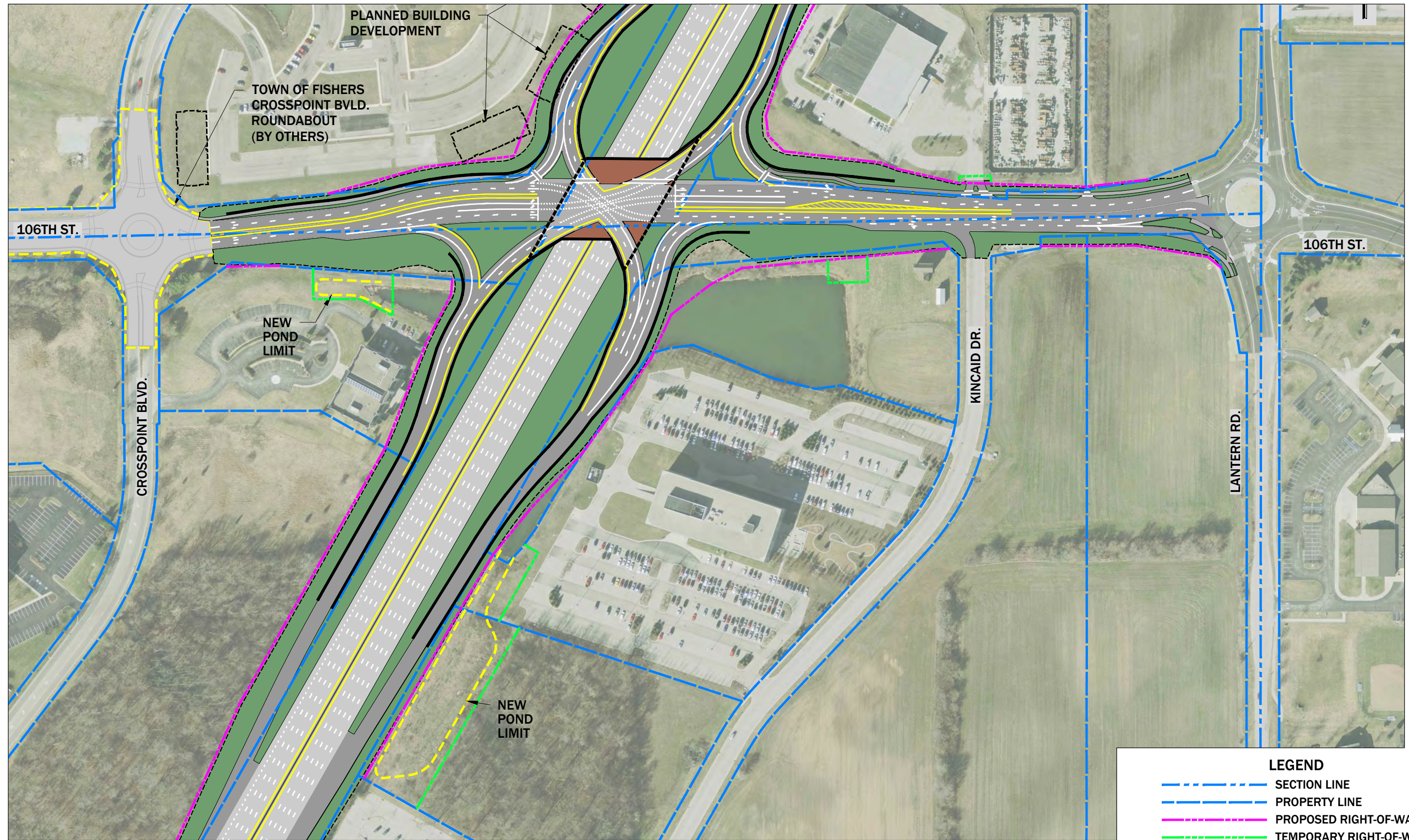
- LEGEND**
- SECTION LINE
  - PROPERTY LINE
  - PROPOSED RIGHT-OF-WAY
  - TEMPORARY RIGHT-OF-WAY
  - LIMITED ACCESS RIGHT-OF-WAY
  - BEGIN/END L.A. RIGHT-OF-WAY



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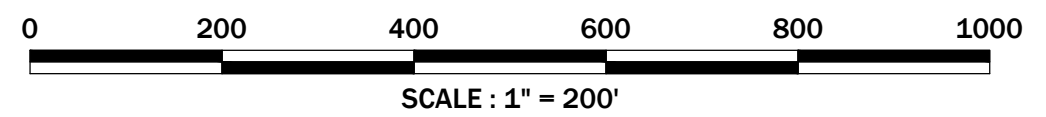
**INDIANA DEPARTMENT OF TRANSPORTATION**  
NEW INTERCHANGE PROJECT I-69 AND 106TH STREET  
**TIGHT DIAMOND OPTION RIGHT-OF WAY**



- LEGEND**
- SECTION LINE
  - PROPERTY LINE
  - PROPOSED RIGHT-OF-WAY
  - TEMPORARY RIGHT-OF-WAY
  - CONSTRUCTION LIMITS



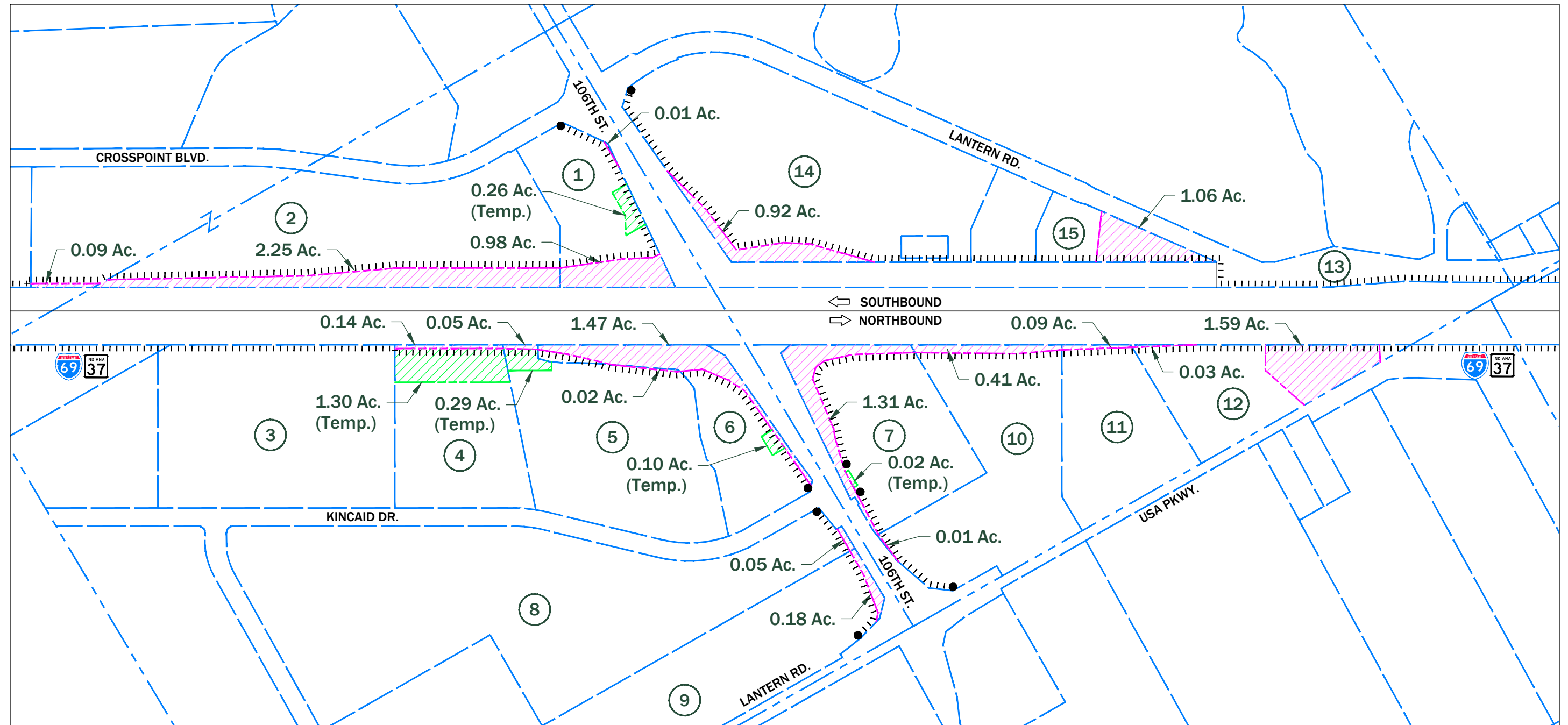
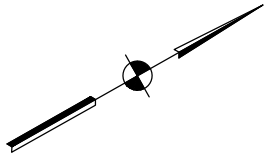
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**INDIANA DEPARTMENT OF TRANSPORTATION**

NEW INTERCHANGE PROJECT I-69 AND 106TH STREET

**SINGLE POINT OPTION**



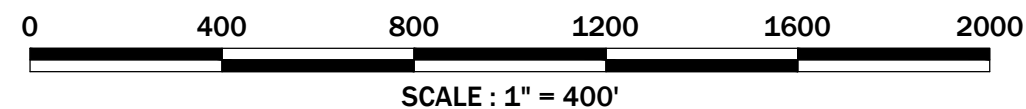
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**R/W LEGEND**  
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PROPOSED RIGHT-OF-WAY AREA  
TEMPORARY RIGHT-OF-WAY AREA

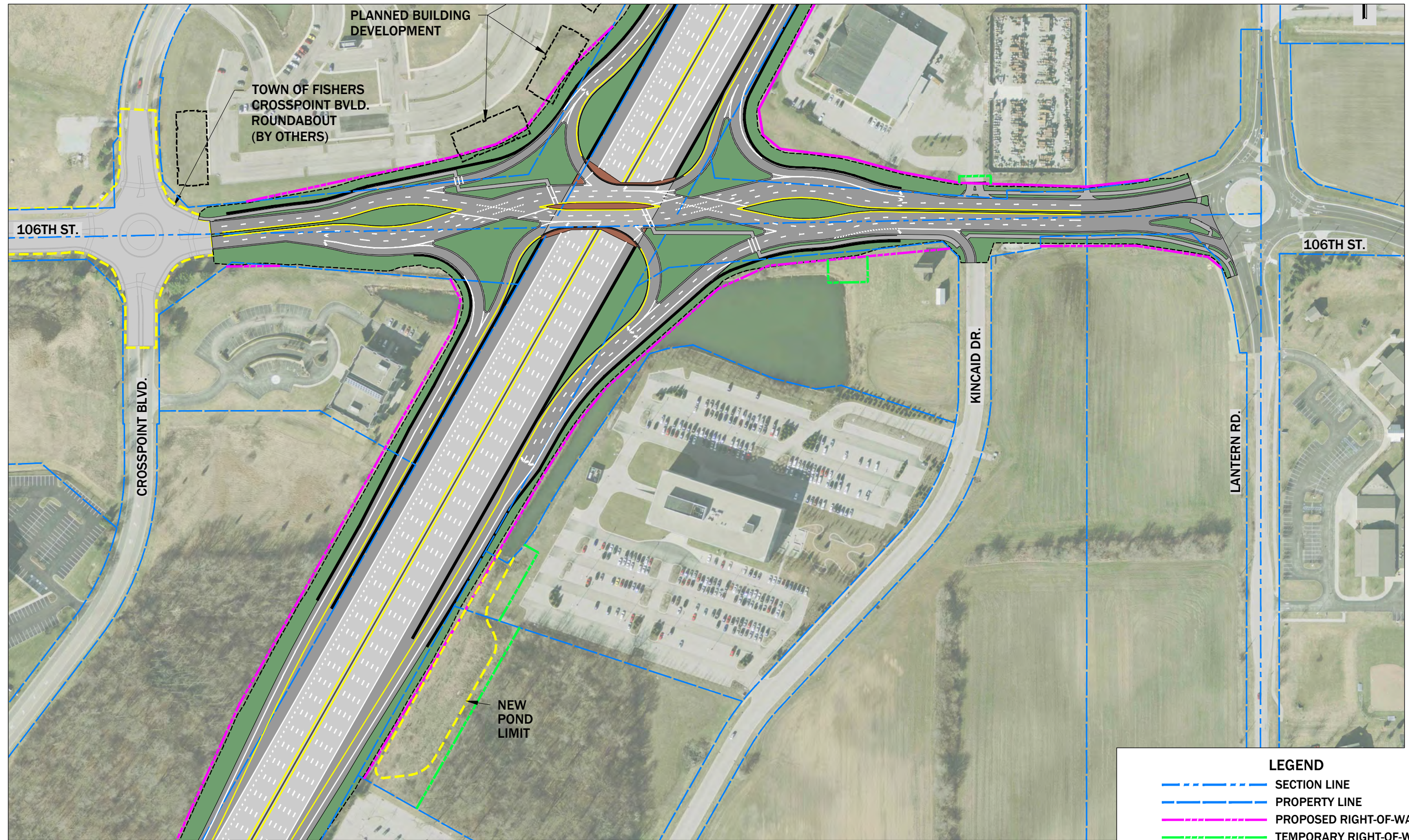
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SECTION LINE  
PROPERTY LINE  
PROPOSED RIGHT-OF-WAY  
TEMPORARY RIGHT-OF-WAY  
LIMITED ACCESS RIGHT-OF-WAY  
BEGIN/END L.A. RIGHT-OF-WAY



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**INDIANA DEPARTMENT OF TRANSPORTATION**  
NEW INTERCHANGE PROJECT I-69 AND 106TH STREET  
SINGLE POINT OPTION RIGHT-OF WAY

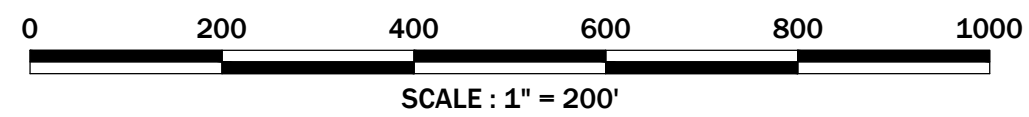


**LEGEND**

- SECTION LINE
- PROPERTY LINE
- PROPOSED RIGHT-OF-WAY
- TEMPORARY RIGHT-OF-WAY
- CONSTRUCTION LIMITS

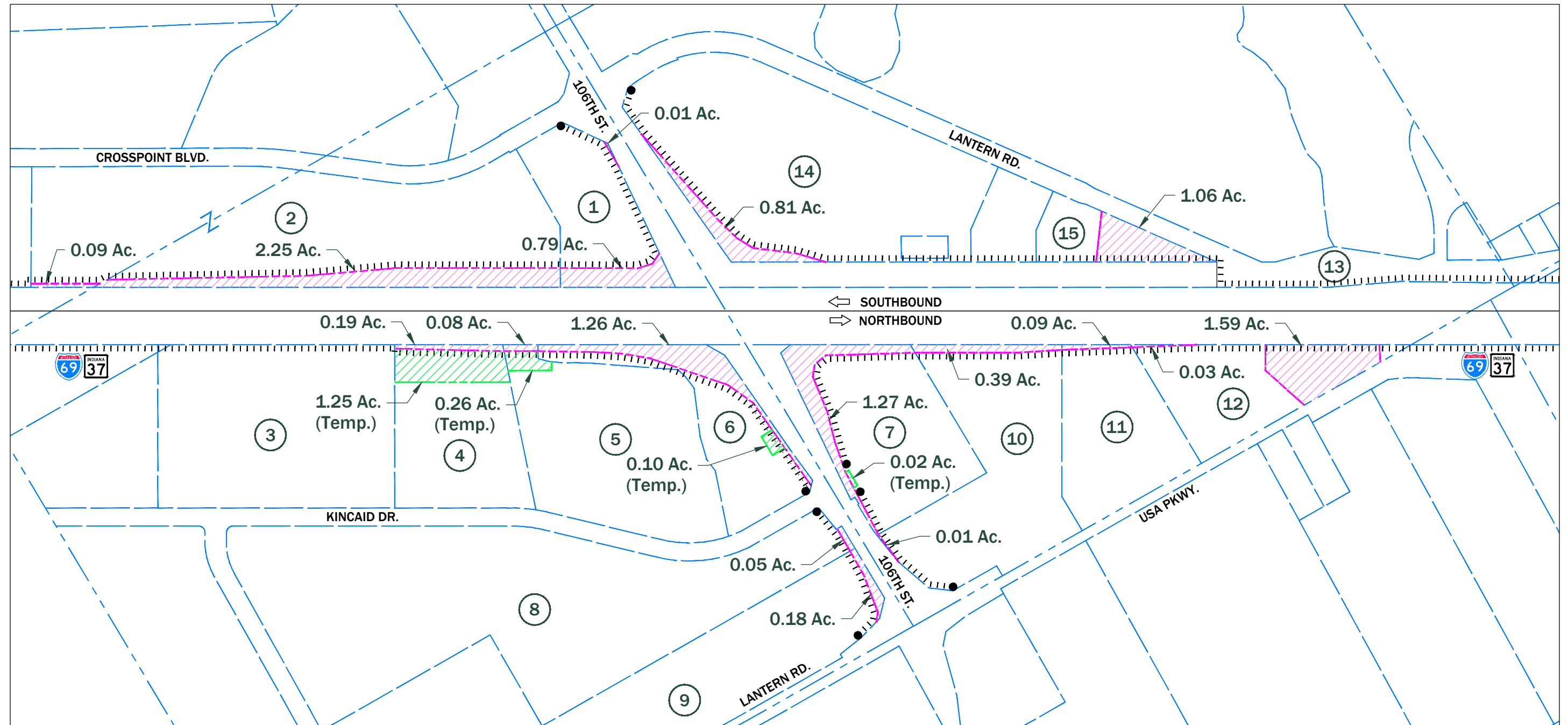
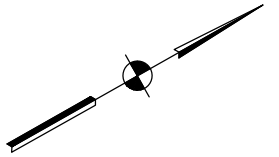


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**INDIANA DEPARTMENT OF TRANSPORTATION**

NEW INTERCHANGE PROJECT I-69 AND 106TH STREET  
**DIVERGENT DIAMOND OPTION**



NOTE: PARCEL 13 WILL REQUIRE  
RIGHT-OF-WAY ENGINEERING TO  
MODIFY THE LIMITED ACCESS LINE  
BUT WILL NOT REQUIRE ACQUISITION.

**R/W LEGEND**

10 PARCEL NUMBER

PROPOSED RIGHT-OF-WAY AREA

TEMPORARY RIGHT-OF-WAY AREA

**LEGEND**

SECTION LINE

PROPERTY LINE

PROPOSED RIGHT-OF-WAY

TEMPORARY RIGHT-OF-WAY

LIMITED ACCESS RIGHT-OF-WAY

BEGIN/END L.A. RIGHT-OF-WAY



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0 400 800 1200 1600 2000

SCALE : 1" = 400'

**INDIANA DEPARTMENT OF TRANSPORTATION**

NEW INTERCHANGE PROJECT I-69 AND 106TH STREET  
**DDI OPTION RIGHT-OF WAY**

# **Appendix C**

## **Draft Construction Plan Excerpts (Roundabout Interchange)**

# **Appendix C1**

Draft Road Plan Excerpts  
(Roundabout Interchange)

PROJECT	DESIGNATION
1298035	1298035
CONTRACT	BRIDGE FILE
IR-35629	-

INDIANA DEPARTMENT  
OF TRANSPORTATION



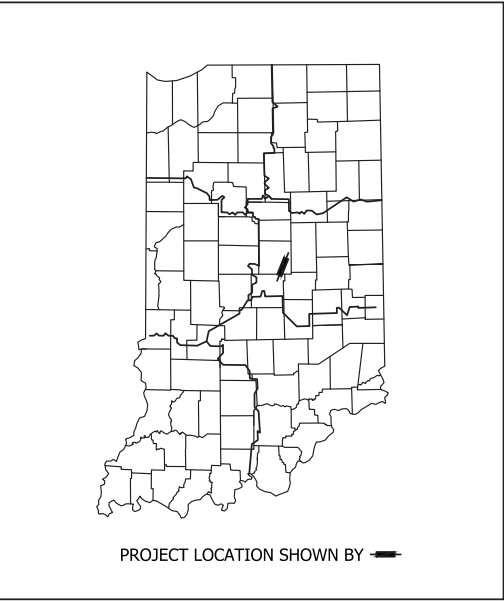
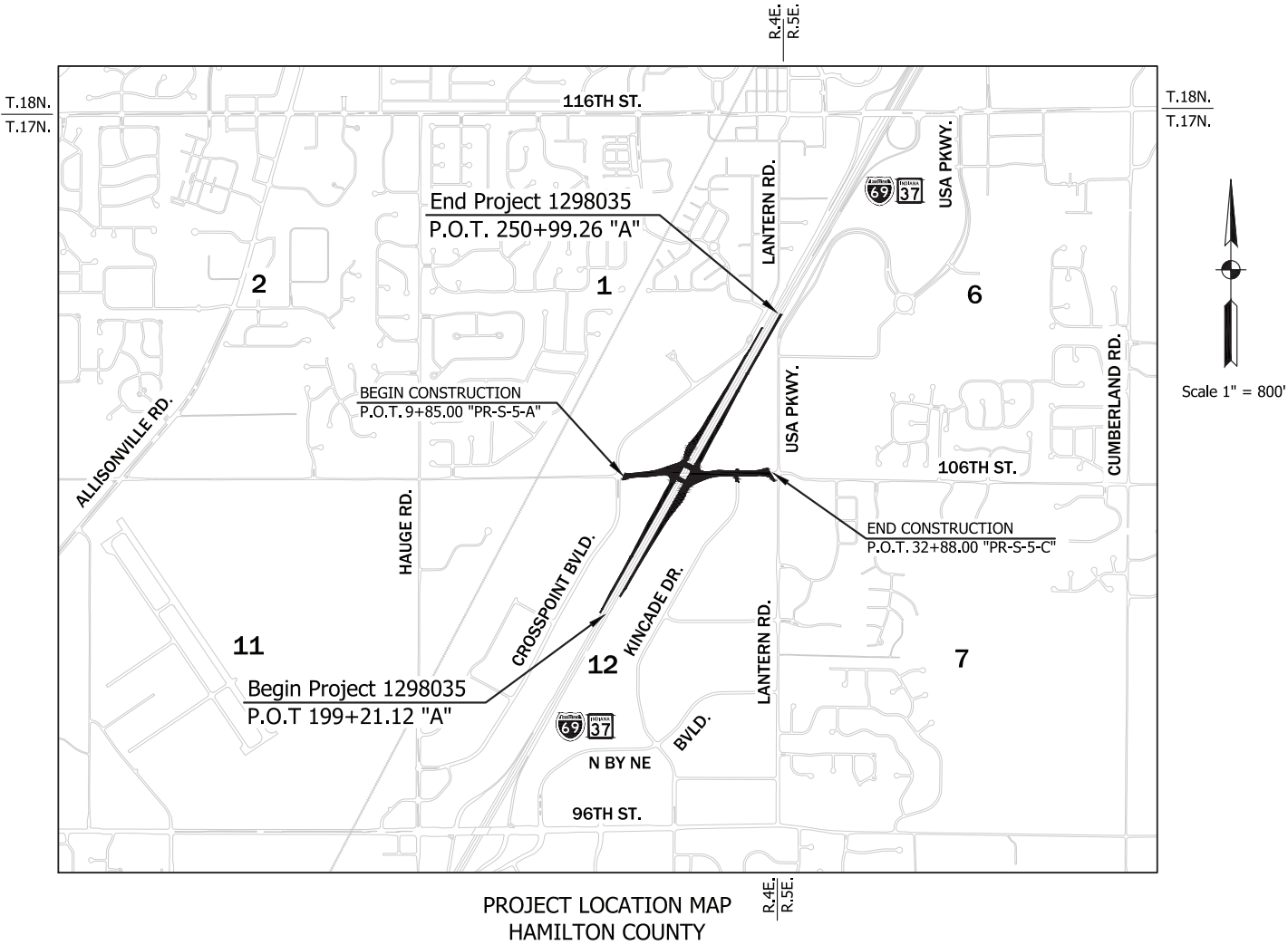
Note: See Index Sheet For Traffic Data.

ROAD PLANS

ROUTE: I-69 FROM: RP 203+70 TO: RP 204+30

PROJECT NO. 1298035 P.E., R/W, CONST.

New Interchange At I-69 & 106th St From 0.3 Miles South Of 106th St. To 0.3 Miles North Of 106th St., Located In Sections 1 & 12, Township 17N, Range 4E, & Section 6, Township 17N, Range 5E, All In Delaware Township, Hamilton County, Indiana



LATITUDE: 39°56'31"N LONGITUDE: 86°01'08"W

Gross Length: 1.42 MI.  
Net Length: 1.39 MI.  
Maximum Grade: 4.81 %

INDIANA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS DATED 2016  
TO BE USED WITH THESE PLANS

File Name: \\UCS04F5\Road\RoadTeam3\C3D\13-407\Road\Draw\Plans\Title Sheet.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John



1625 N. Post Road  
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Phone 317-895-2585  
Fax 317-895-2596  
www.ucindy.com

PLANS PREPARED BY:	UNITED CONSULTING	(317) 895-2585
		PHONE NUMBER
CERTIFIED BY:		DATE
APPROVED FOR LETTING:		DATE
	INDIANA DEPARTMENT OF TRANSPORTATION	

	BRIDGE FILE
	-
	DESIGNATION
	1298035
SURVEY BOOK	SHEETS
-	1 of 33
CONTRACT	PROJECT
IR-35629	1298035

## UTILITIES

GAS :	MARATHON PIPELINE 539 SOUTH MAIN ST. RM 7642 A FINDLAY, OH 45840 ATTN: DAVE WISNER (419)421-2211	COMMUNICATIONS :	AT&T INDIANA 5858 N COLLEGE AVE. INDIANAPOLIS, IN 46220 ATTN: BRIAN CRAVENS (317)445-5699
CABLE :	COMCAST 5330 E. 65TH STREET INDIANAPOLIS, IN 46220 ATTN: TOM SPENCER (317)752-9426	COMMUNICATIONS :	ROCHE DIAGNOSTICS 9115 HAGUE ROAD INDIANAPOLIS, IN 46250 ATTN: BOB PAQUIN (317)521-2000
ELECTRIC :	DUKE ENERGY (LOW VOLTAGE) 340 N. MAIN STREET MARTINSVILLE, IN 46151 ATTN: CINDY ROWLAND (317)776-5341	COMMUNICATIONS :	ZAYO BANDWIDTH 701 W. HENRY STREET, STE. 201 NEW PALESTINE, IN 46163 ATTN: JIM KELLAM (317)524-5712
ELECTRIC :	DUKE ENERGY (HIGH VOLTAGE) 1000 E. MAIN STREET PLAINFIELD, IN 46168 ATTN: SEAN FILEY (317)838-1243	COMMUNICATIONS :	AT&T TRANSMISSION 5650 ROCKWAY DRIVE PLAINFIELD, IN 46163 ATTN: PAT TAYLOR (317)997-6419
ITS :	ITS TECHNOLOGY DEPLOYMENT DIVISION 8620 E. 21ST STREET, INDY TMC INDIANAPOLIS, IN 46219 ATTN: KONSTANTINE VEYGMAN (317)899-8606	COMMUNICATIONS :	LEVEL 3 4625 W 86TH STREET INDIANAPOLIS, IN 46268 ATTN: GLEN HUDSON (317)713-8942
FIBER :	FIBER TECHNOLOGIES NETWORKS, LLC 800 OLIVER AVE. STE. #1 INDIANAPOLIS, IN 46225 ATTN: DAVID MACDONALD (317)636-7375	SANITARY SEWER :	TOWN OF FISHERS 1 MUNICIPAL DRIVE FISHERS, IN 46038 ATTN: RICK FARNHAM (317)595-3281
WATER :	CITIZENS ENERGY GROUP 1220 WATERWAY BOULEVARD INDIANAPOLIS, IN 46202 ATTN: CHRIS BRUMFIELD (317)263-6382	SANITARY SEWER	HAMILTON SOUTHEASTERN UTILITIES 11901 LAKESIDE DRIVE FISHERS, IN 46039 ATTN: JAMES HART (317)577-1150

## GENERAL NOTES

[illegible]

## INDEX

[illegible]

## REVISIONS

[illegible]

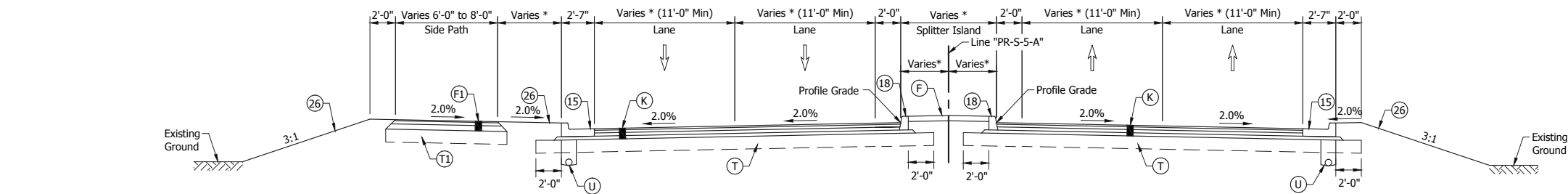
TRAFFIC DATA	NB I-69	SB I-69	NE RAMP	NW RAMP	SW RAMP	SE RAMP	106TH ST.
A.D.T. (2015)	59,011	59,011	4,450	6,580	6,254	9,335	24,039
A.D.T. (2035)	76,881	76,881	9,719	9,372	11,100	14,351	37,021
D.H.V. (2035)	AM - 4,079 PM - 7,619	AM - 6,938 PM - 5,050	AM - 222 PM - 525	AM - 703 PM - 478	AM - 613 PM - 830	AM - 859 PM - 1,069	AM - 3,949 PM - 4,283
DIRECTIONAL DISTRIBUTION	100	100	100	100	100	100	50/50
TRUCKS (%DHV)	AM - 10.8% PM - 7.0%	AM - 7.5% PM - 9.9%	AM - 2.7% PM - 0.2%	AM - 1.3% PM - 0.8%	AM - 3.1% PM - 1.0%	AM - 1.7% PM - 0.8%	AM - 1.9% PM - 0.7%
TRUCKS (%AADT)	10.8%	10.5%	1.8%	1.3%	2.1%	1.5%	1.6%
DESIGN DATA							
DESIGN SPEED	65 MPH	65 MPH	30 MPH/50 MPH	45 MPH/25 MPH	30 MPH/50 MPH	45 MPH/25 MPH	40 MPH
PROJECT DESIGN CRITERIA	4R (FREEWAY)	4R (FREEWAY)	INTERCHANGE RAMP	INTERCHANGE RAMP	INTERCHANGE RAMP	INTERCHANGE RAMP	4R
FUNCTIONAL CLASSIFICATION	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY	FREEWAY	MINOR ARTERIAL
RURAL/URBAN	URBAN	URBAN	URBAN	URBAN	URBAN	URBAN	URBAN
TERRAIN	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL	LEVEL
ACCESS CONTROL	FULL	FULL	FULL	FULL	FULL	FULL	NONE



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Indianapolis, IN 46219  
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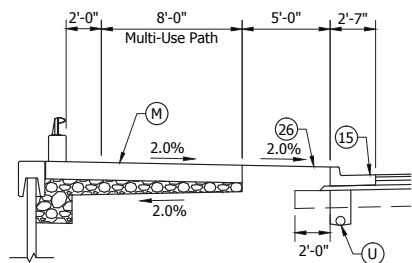
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DESIGN ENGINEER		DATE		VERTICAL SCALE		DESIGNATION	
				N/A		1298035	
DESIGNED: WRC		DRAWN: JNII		SURVEY BOOK		SHEETS	
				-		2 of 33	
CHECKED: JAR		CHECKED: JAR		CONTRACT		PROJECT	
				IR-35629		1298035	

File Name: \\UCS04F5\Road\RoadTeam3\C3D\13-407\Road\Draw\Plans\TypSect.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John

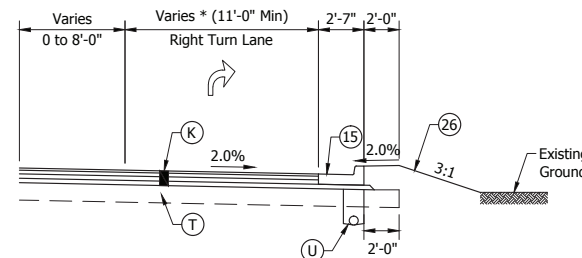


**106TH STREET**

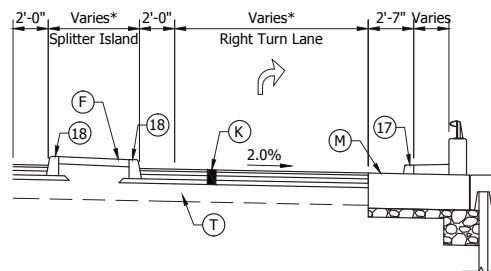
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From 15+65.42 "PR-S-5-A" To 17+58.71 "PR-S-5-A"  
\*See Geometric Details For Additional Information



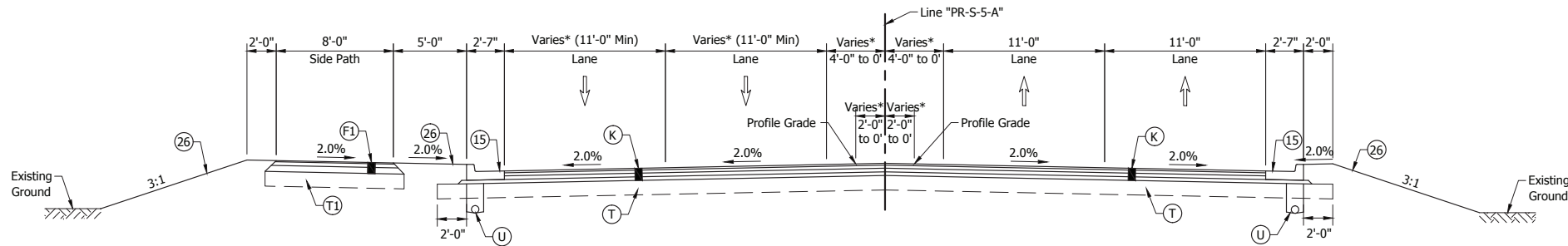
From 13+51.39 "PR-S-5-A" To 17+58.71 "PR-S-5-A"



From 12+04.14 "PR-S-5-A" To 16+43.79 "PR-S-5-A"



From 16+43.79 "PR-S-5-A" To 17+58.71 "PR-S-5-A"



**106TH STREET**

From 10+95.40 "PR-S-5-A" To 15+65.42 "PR-S-5-A"  
\*See Geometric Details For Additional Information

- LEGEND**
- |                              |   |  |                                       |   |                      |
|------------------------------|---|--|---------------------------------------|---|----------------------|
| (A) Full Depth PCCP Pavement | (F1) HMA For Sidewalk<br>140 #/Sys HMA Surface, Type A, on<br>220 #/Sys HMA Intermediate, Type A, on<br>6" Compacted Aggregate, No. 53, Base on | (K) Full Depth HMA Pavement - Interchange    | (R) I-69 Mainline Overlay and Milling | (15) Curb & Gutter, Concrete              | (19) Concrete Curb   |
| (F) Sidewalk, Concrete       | (F2) Truck Apron<br>7" PCCP on<br>7" Compacted Aggregate, No. 53, Base  | (K1) Full Depth HMA Pavement - Mainline I-69 | (T) Subgrade Treatment, xx            | (16) Curb & Gutter, B, Concrete, Modified | (26) Nursery Sodding |
|                              |   | (M) Moment Slab                              | (T1) Subgrade Treatment, II           | (17) Concrete Curb, Integral              |                      |
|                              |   | (O) Compacted Aggregate, No. 53              | (U) 6" Underdrain                     | (18) Concrete Curb, Modified              |                      |



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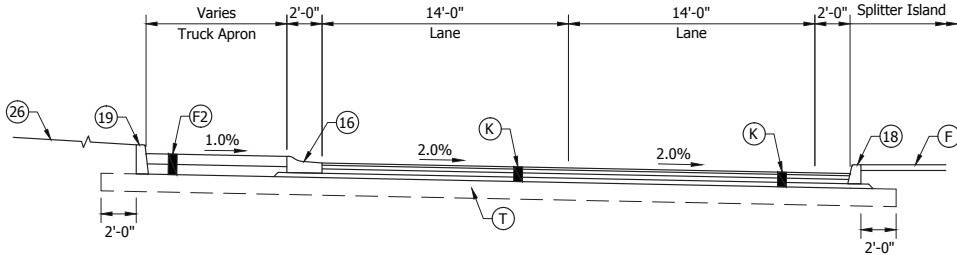
RECOMMENDED  
FOR APPROVAL \_\_\_\_\_  
DESIGN ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

DESIGNED: \_\_\_\_\_ WRC \_\_\_\_\_ DRAWN: \_\_\_\_\_ JNII \_\_\_\_\_  
CHECKED: \_\_\_\_\_ JAR \_\_\_\_\_ CHECKED: \_\_\_\_\_ JAR \_\_\_\_\_

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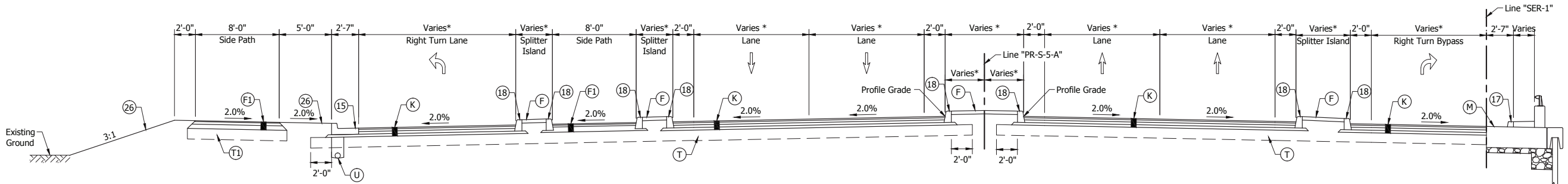
TYPICAL SECTIONS

HORIZONTAL SCALE 1" = 5'	BRIDGE FILE -
VERTICAL SCALE 1" = 5'	DESIGNATION 1298035
SURVEY BOOK -	SHEETS 3 of 33
CONTRACT IR-35629	PROJECT 1298035



## ROUNDABOUT

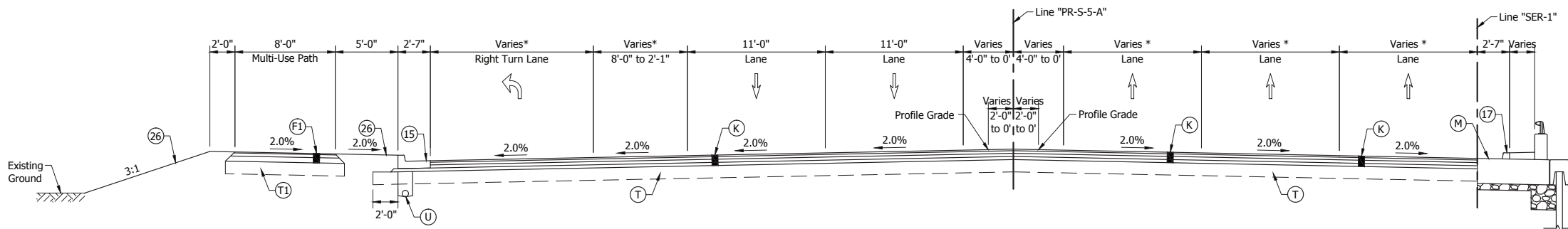
\*See Roundabout Geometric and Grading Details



106TH STREET

From 21+17.87 "PR-S-5-A" To 22+33.97 "PR-S-5-A"

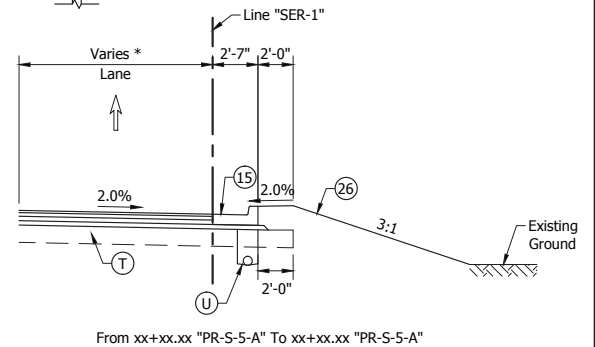
\*See Geometric Details For Additional Information



106TH STREET

From 22+33.97 "PR-S-5-A" To 23+39.56 "PR-S-5-A"

\*See Geometric Details For Additional Information



### LEGEND

- |                              |   |  |                                       |   |                      |
|------------------------------|---|--|---------------------------------------|---|----------------------|
| (A) Full Depth PCCP Pavement | (F1) HMA For Sidewalk<br>140 #/Sys HMA Surface, Type A, on<br>220 #/Sys HMA Intermediate, Type A, on<br>6" Compacted Aggregate, No. 53, Base on | (K) Full Depth HMA Pavement - Interchange    | (R) I-69 Mainline Overlay and Milling | (15) Curb & Gutter, Concrete              | (19) Concrete Curb   |
| (F) Sidewalk, Concrete       |   | (K1) Full Depth HMA Pavement - Mainline I-69 | (T) Subgrade Treatment, xx            | (16) Curb & Gutter, B, Concrete, Modified | (26) Nursery Sodding |
|                              | (F2) Truck Apron<br>7" PCCP on<br>7" Compacted Aggregate, No. 53, Base  | (M) Moment Slab                              | (T1) Subgrade Treatment, II           | (17) Concrete Curb, Integral              |                      |
|                              |   | (O) Compacted Aggregate, No. 53              | (U) 6" Underdrain                     | (18) Concrete Curb, Modified              |                      |



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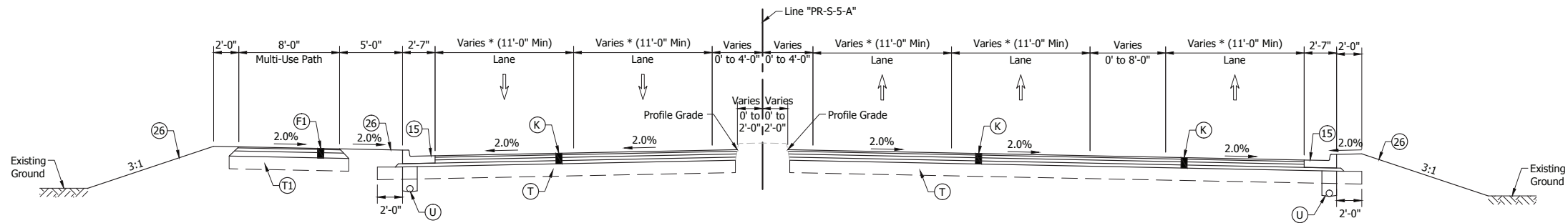
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DESIGNED: WRC	DRAWN: JNII		
CHECKED: JAR	CHECKED: JAR		

INDIANA  
DEPARTMENT OF TRANSPORTATION

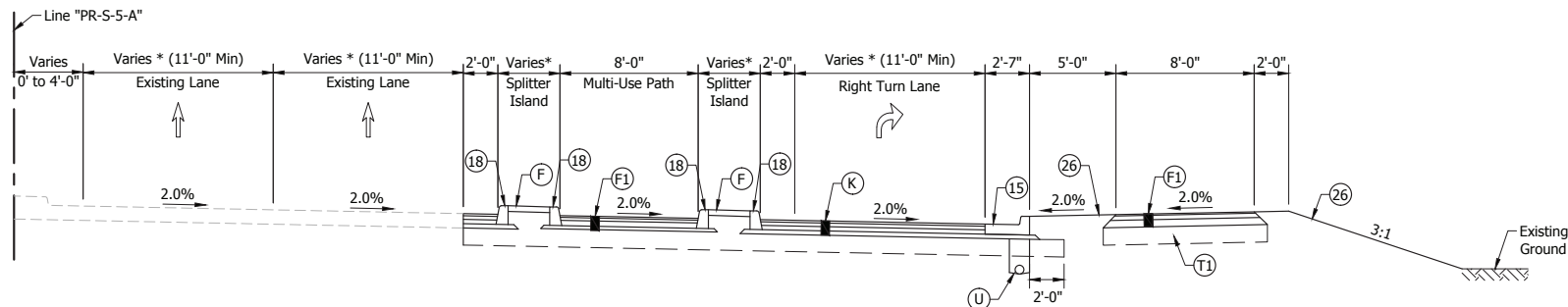
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HORIZONTAL SCALE	BRIDGE FILE		
1" = 5'	-		
VERTICAL SCALE	DESIGNATION		
1" = 5'	1298035		
SURVEY BOOK	SHEETS		
-	4	of	33
CONTRACT	PROJECT		
IR-35629	1298035		

File Name: \\UCS04F5\Road\RoadTeam3\C3D\13-407\Road\Draw\Plans\TypSect.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John



**106TH STREET**  
From 30+44.21 "PR-S-5-A" To 32+12.40 "PR-S-5-A"  
\*See Geometric Details For Additional Information



**106TH STREET**  
From 32+12.40 "PR-S-5-A" To 32+81.98 "PR-S-5-A"  
\*See Geometric Details For Additional Information

**LEGEND**

- |                              |   |  |                                       |   |                      |
|------------------------------|---|--|---------------------------------------|---|----------------------|
| (A) Full Depth PCCP Pavement | (F1) HMA For Sidewalk<br>140 #/Sys HMA Surface, Type A, on<br>220 #/Sys HMA Intermediate, Type A, on<br>6" Compacted Aggregate, No. 53, Base on | (K) Full Depth HMA Pavement - Interchange    | (R) I-69 Mainline Overlay and Milling | (15) Curb & Gutter, Concrete              | (19) Concrete Curb   |
| (F) Sidewalk, Concrete       | (F2) Truck Apron<br>7" PCCP on<br>7" Compacted Aggregate, No. 53, Base  | (K1) Full Depth HMA Pavement - Mainline I-69 | (T) Subgrade Treatment, xx            | (16) Curb & Gutter, B, Concrete, Modified | (26) Nursery Sodding |
|                              |   | (M) Moment Slab                              | (T1) Subgrade Treatment, II           | (17) Concrete Curb, Integral              |                      |
|                              |   | (O) Compacted Aggregate, No. 53              | (U) 6" Underdrain                     | (18) Concrete Curb, Modified              |                      |



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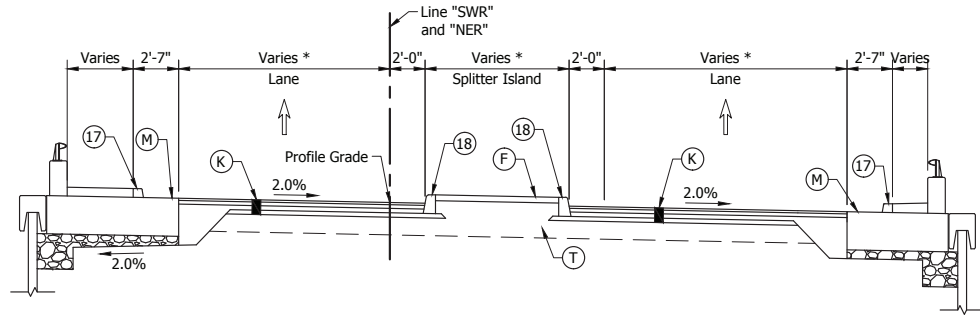
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**INDIANA  
DEPARTMENT OF TRANSPORTATION**

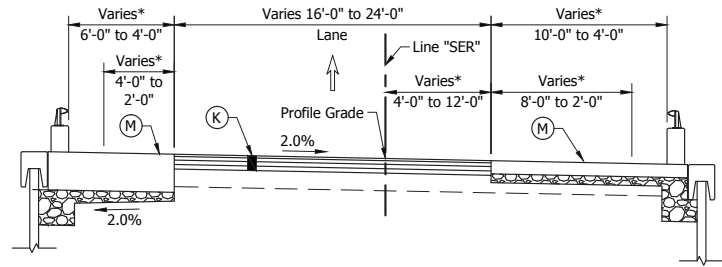
**TYPICAL SECTIONS**

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	-
VERTICAL SCALE	DESIGNATION
1" = 5'	1298035
SURVEY BOOK	SHEETS
-	5 of 33
CONTRACT	PROJECT
IR-35629	1298035

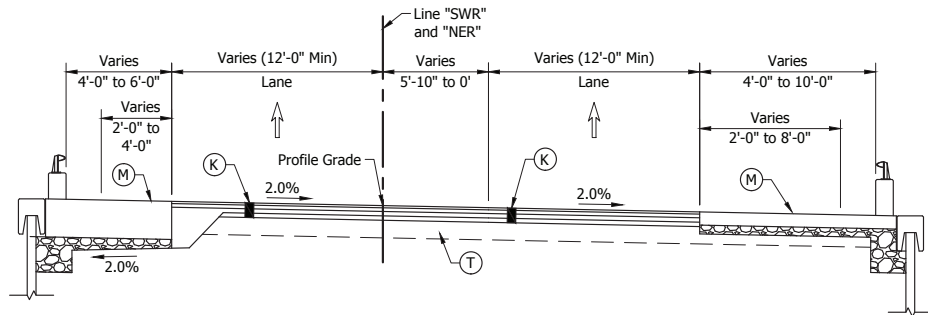
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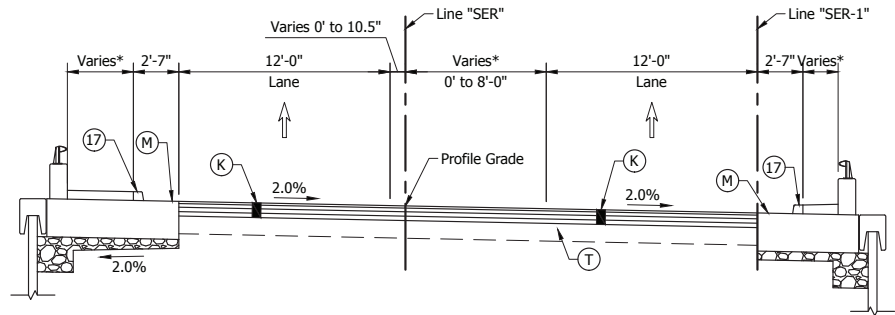
**RAMP SWR AND NER**  
From 200+03.83 "SWR" To 202+00.00 "SWR"  
From 400+06.65 "NER" To 401+37.14 "NER"  
\*See Geometric Details For Additional Information



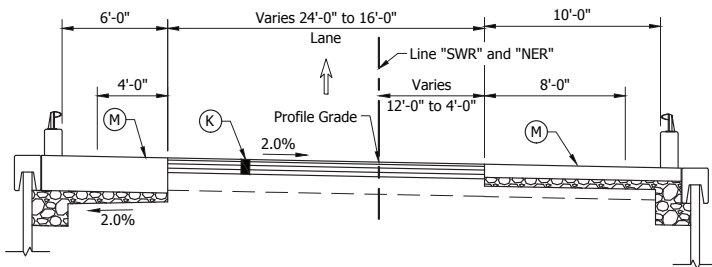
**RAMP SER**  
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\*See Geometric Details For Additional Information



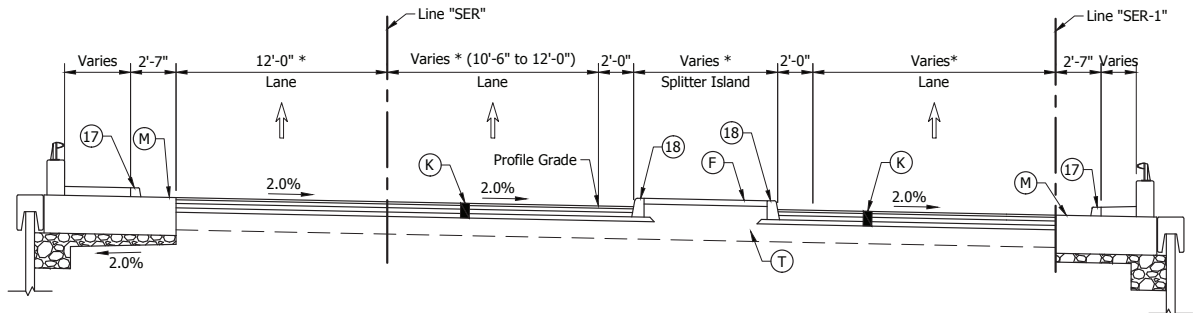
**RAMP SWR AND NER**  
From 202+00.00 "SWR" To 202+99.82 "SWR"  
From 401+37.14 "NER" To 403+06.44 "NER"



**RAMP SER AND SER-1**  
From 158+40.51 "SER" To 159+45.53 "SER"  
From 100+00.00 "SER-1" To 101+06.77 "SER-1"  
\*See Geometric Details For Additional Information



**RAMP SWR AND NER**  
From 202+99.82 "SWR" To 208+10.23 "SWR"  
From 403+06.44 "NER" To 408+07.62 "NER"



**RAMP SER AND SER-1**  
From 159+45.53 "SER" To 162+51.15 "SER"  
From 101+06.77 "SER-1" To 105+56.40 "SER-1"  
\*See Geometric Details For Additional Information

**LEGEND**

- |                              |   |  |                                       |   |                      |
|------------------------------|---|--|---------------------------------------|---|----------------------|
| (A) Full Depth PCCP Pavement | (F1) HMA For Sidewalk<br>140 #/Sys HMA Surface, Type A, on<br>220 #/Sys HMA Intermediate, Type A, on<br>6" Compacted Aggregate, No. 53, Base on | (K) Full Depth HMA Pavement - Interchange    | (R) I-69 Mainline Overlay and Milling | (15) Curb & Gutter, Concrete              | (19) Concrete Curb   |
| (F) Sidewalk, Concrete       | (F2) Truck Apron<br>7" PCCP on<br>7" Compacted Aggregate, No. 53, Base  | (K1) Full Depth HMA Pavement - Mainline I-69 | (T) Subgrade Treatment, xx            | (16) Curb & Gutter, B, Concrete, Modified | (26) Nursery Sodding |
|                              |   | (M) Moment Slab                              | (T1) Subgrade Treatment, II           | (17) Concrete Curb, Integral              |                      |
|                              |   | (O) Compacted Aggregate, No. 53              | (U) 6" Underdrain                     | (18) Concrete Curb, Modified              |                      |



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DESIGN ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

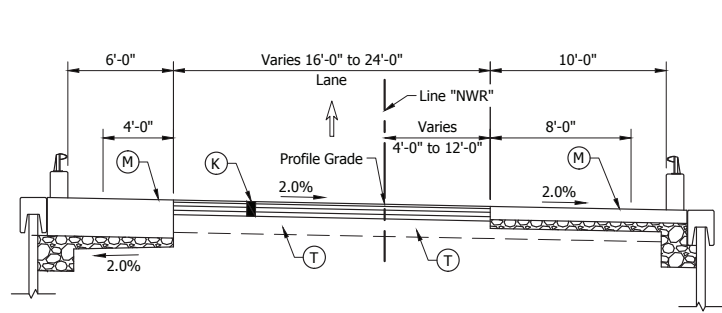
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CHECKED: \_\_\_\_\_ JAR \_\_\_\_\_ CHECKED: \_\_\_\_\_ JAR \_\_\_\_\_

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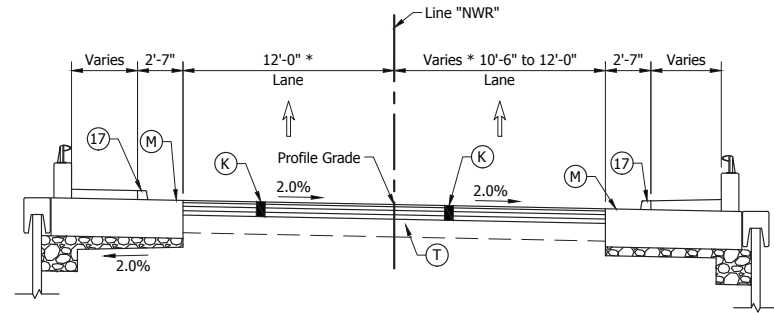
TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1" = 5'	-
VERTICAL SCALE	DESIGNATION
1" = 5'	1298035
SURVEY BOOK	SHEETS
-	6 of 33
CONTRACT	PROJECT
IR-35629	1298035

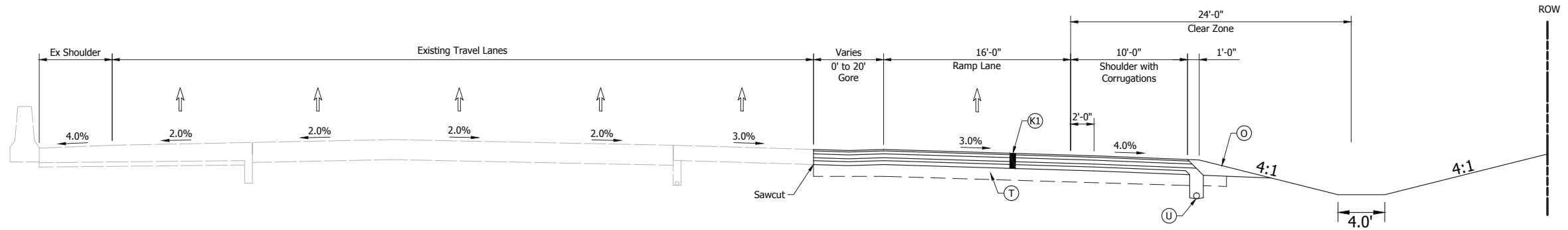
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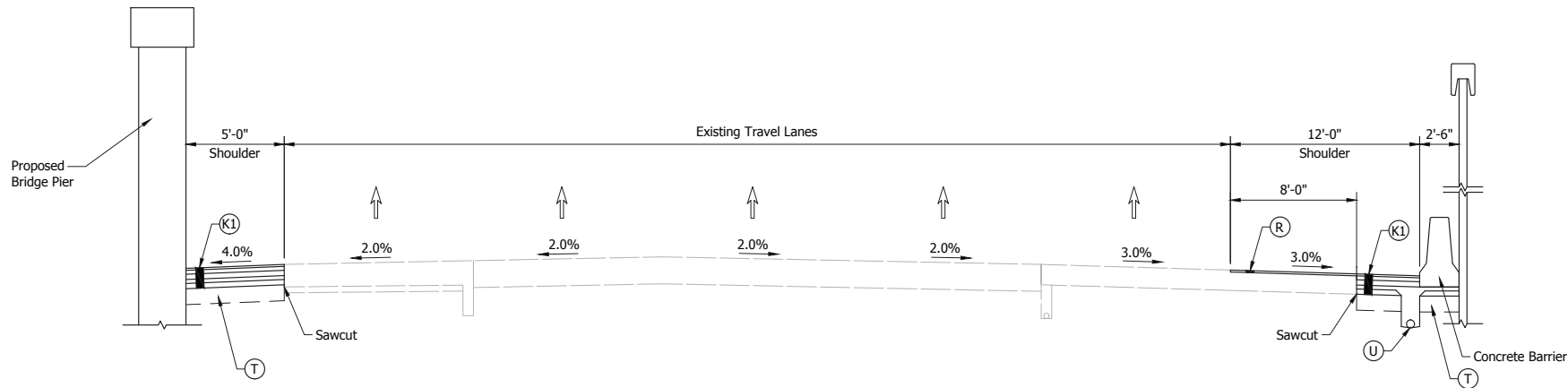
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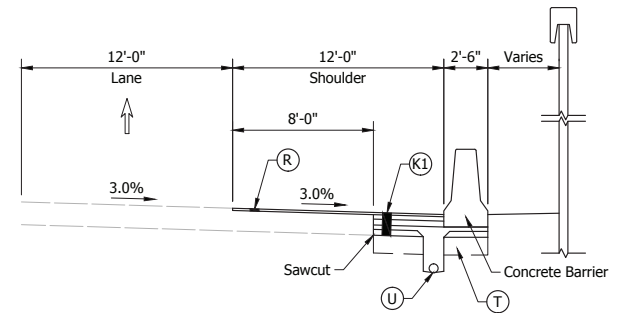
**RAMP NWR**  
From 310+59.23 "NWR" To 312+98.13 "NWR"  
\*See Geometric Details For Additional Information



**I-69 MAINLINE - RAMP TERMINALS**  
NB I-69 Shown, SB I-69 Reverse  
See Geometric Details For Additional Information



**I-69 MAINLINE - AT BRIDGE LOCATION**  
NB I-69 Shown, SB I-69 Reverse  
See Geometric Details For Additional Information



**I-69 MAINLINE - ROADSIDE BARRIER**  
NB I-69 Shown, SB I-69 Reverse  
See Geometric Details For Additional Information

- LEGEND**
- |                              |   |  |                                       |   |                      |
|------------------------------|---|--|---------------------------------------|---|----------------------|
| (A) Full Depth PCCP Pavement | (F1) HMA For Sidewalk<br>140 #/Sys HMA Surface, Type A, on<br>220 #/Sys HMA Intermediate, Type A, on<br>6" Compacted Aggregate, No. 53, Base on | (K) Full Depth HMA Pavement - Interchange    | (R) I-69 Mainline Overlay and Milling | (15) Curb & Gutter, Concrete              | (19) Concrete Curb   |
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|                              |   | (M) Moment Slab                              | (T1) Subgrade Treatment, II           | (17) Concrete Curb, Integral              |                      |
|                              |   | (O) Compacted Aggregate, No. 53              | (U) 6" Underdrain                     | (18) Concrete Curb, Modified              |                      |



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DESIGNED: <u>WRC</u>	DRAWN: <u>JNII</u>
CHECKED: <u>JAR</u>	CHECKED: <u>JAR</u>


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TYPICAL SECTIONS

HORIZONTAL SCALE 1" = 5'	BRIDGE FILE -
VERTICAL SCALE 1" = 5'	DESIGNATION 1298035
SURVEY BOOK -	SHEETS 7 of 33
CONTRACT IR-35629	PROJECT 1298035



File Name: \\UCS04FS\\Road

223+00	224+00	225+00	226+00	227+00	228+00	229+00	230+00	231+00	232+00	233+00	234+00	235+00	236+00	237+00	238+00	239+00		
<div><div>1625 N. Post Road Indianapolis, IN 46219 Phone 317-895-2585 Fax 317-895-2596 www.ucindy.com</div></div>									RECOMMENDED FOR APPROVAL		INDIANA DEPARTMENT OF TRANSPORTATION			HORIZONTAL SCALE		BRIDGE FILE		
														1" = 50'		-		
									DESIGNED: <u>WRC</u>		DRAWN: <u>JNII</u>		PLAN & PROFILE LINE "A"		VERTICAL SCALE		DESIGNATION	
															1" = 10'		1298035	
CHECKED: <u>JAR</u>		CHECKED: <u>JAR</u>				SURVEY BOOK		SHEETS										
						-		15 of 33										
						CONTRACT		PROJECT										
						IR-35629		1298035										

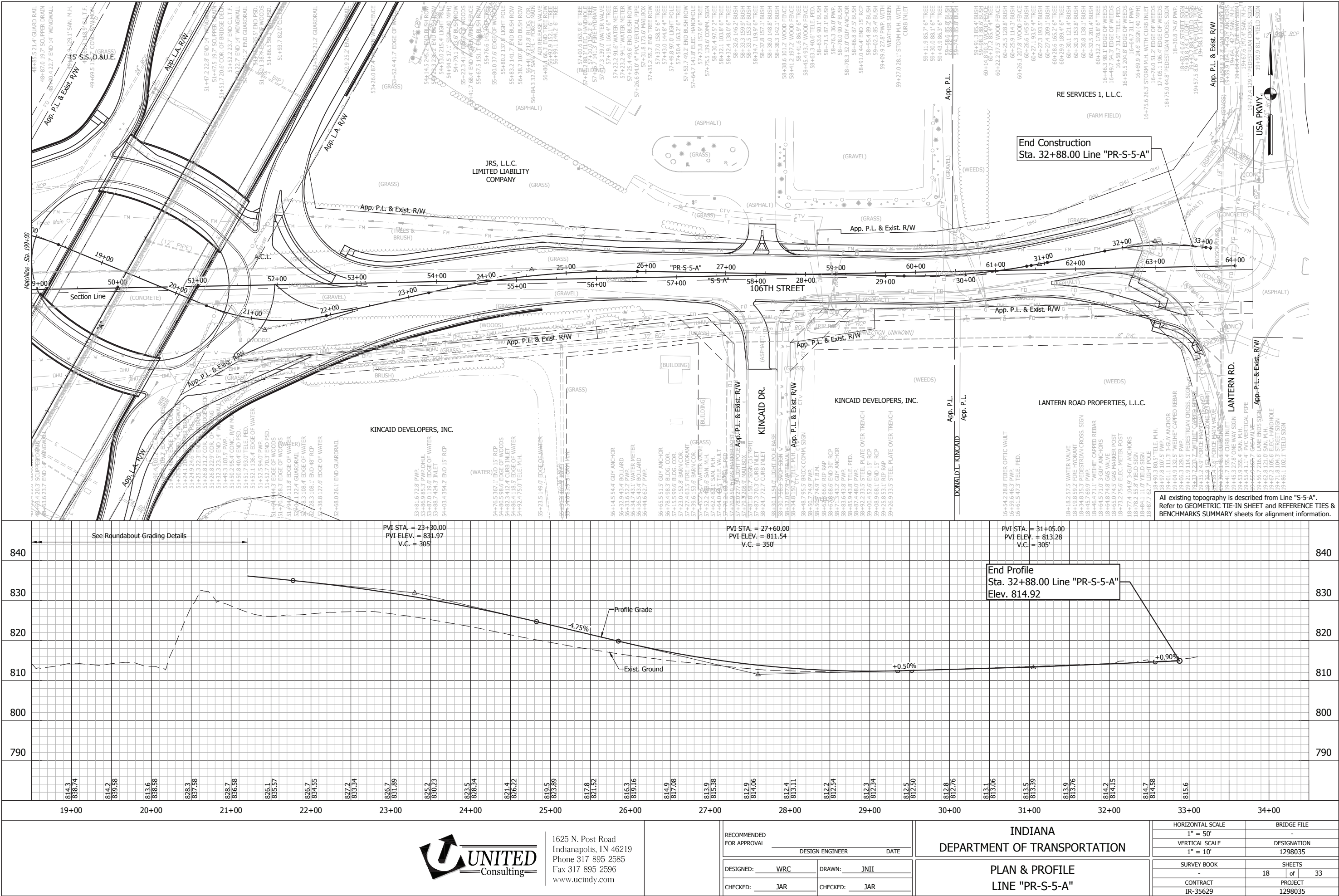


RECOMMENDED FOR APPROVAL		DESIGN ENGINEER	DATE
DESIGNED: <u>WRC</u>	DRAWN: <u>JNII</u>		
CHECKED: <u>JAR</u>	CHECKED: <u>JAR</u>		

PLAN & PROFILE  
LINE "A"

HORIZONTAL SCALE	BRIDGE FILE		
1" = 50'	-		
VERTICAL SCALE	DESIGNATION		
1" = 10'	1298035		
SURVEY BOOK	SHEETS		
-	16	of	33
CONTRACT	PROJECT		
IR-35629	1298035		





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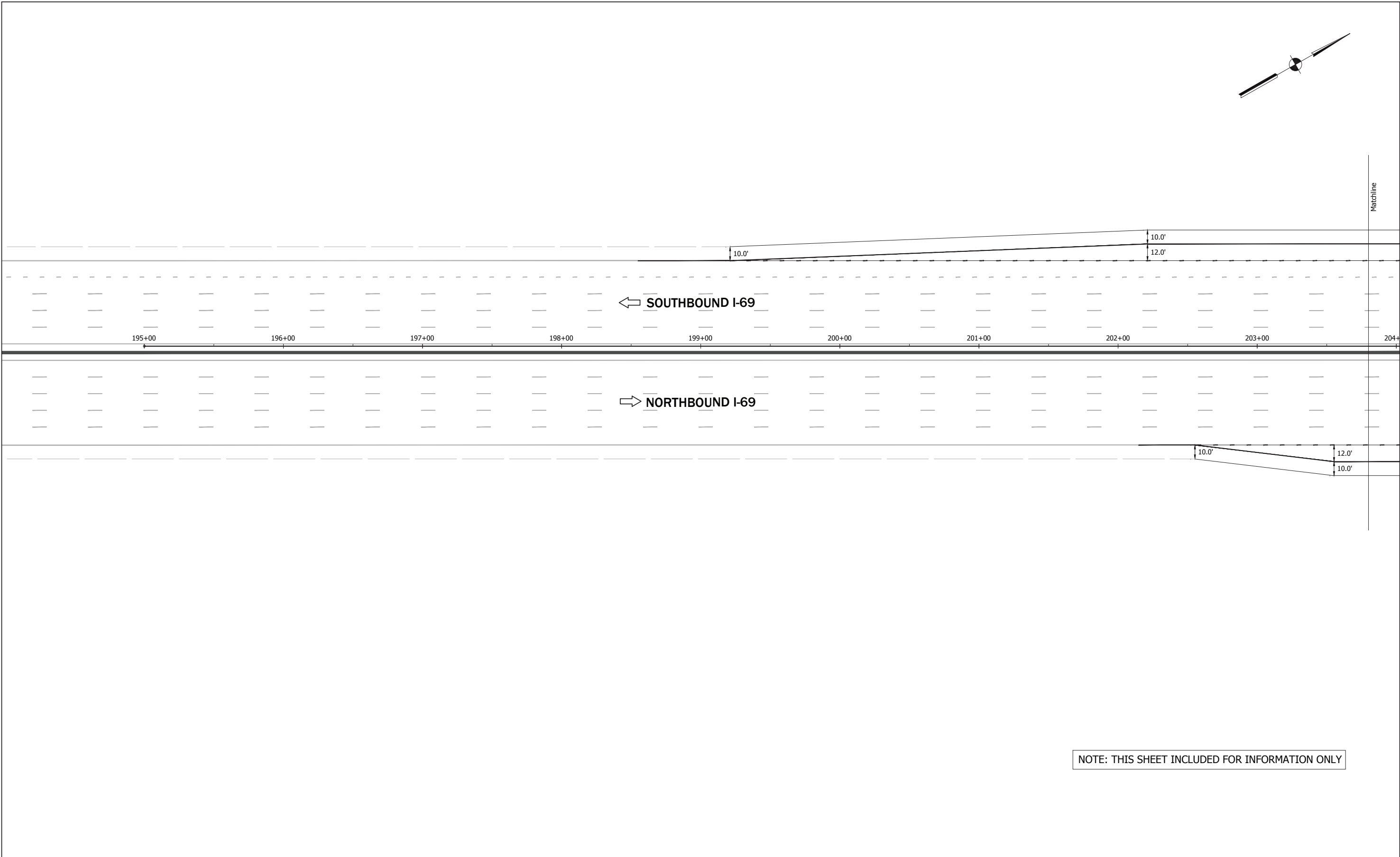
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: WRC	DRAWN: JNII	
CHECKED: JAR	CHECKED: JAR	

INDIANA  
DEPARTMENT OF TRANSPORTATION

PLAN & PROFILE  
LINE "PR-S-5-A"

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	-
VERTICAL SCALE	DESIGNATION
1" = 10'	1298035
SURVEY BOOK	SHEETS
-	18 of 33
CONTRACT	PROJECT
IR-35629	1298035

File Name: \\UCS04FS\\Road\\Road\\Team3\\C3D\\13-407\\Road\\Dwg\\Plans\\Sign Mark Plan.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John



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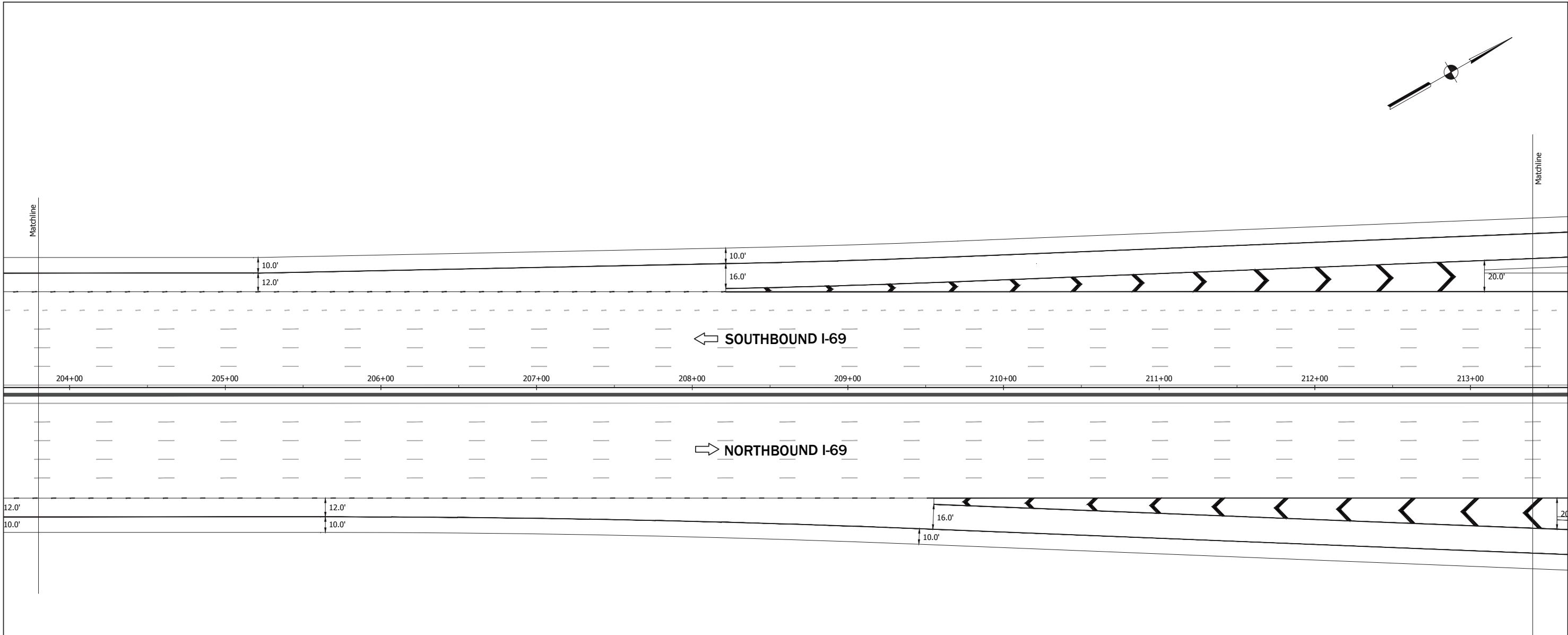
RECOMMENDED FOR APPROVAL _____	
DESIGNED: <u>WRC</u>	DRAWN: <u>JNII</u>
CHECKED: <u>JAR</u>	CHECKED: <u>JAR</u>

INDIANA  
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SIGNING & MARKING DETAILS  
LINE "A" & RAMPS

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE -		
VERTICAL SCALE N/A	DESIGNATION 1298035		
SURVEY BOOK -	SHEETS 25	of	33
CONTRACT IR-35629	PROJECT 1298035		

File Name: \\UCS04FS\\Road\\Road\\Team3\\C3D\\13-407\\Road\\Dwg\\Plans\\Sign Mark Plan.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John



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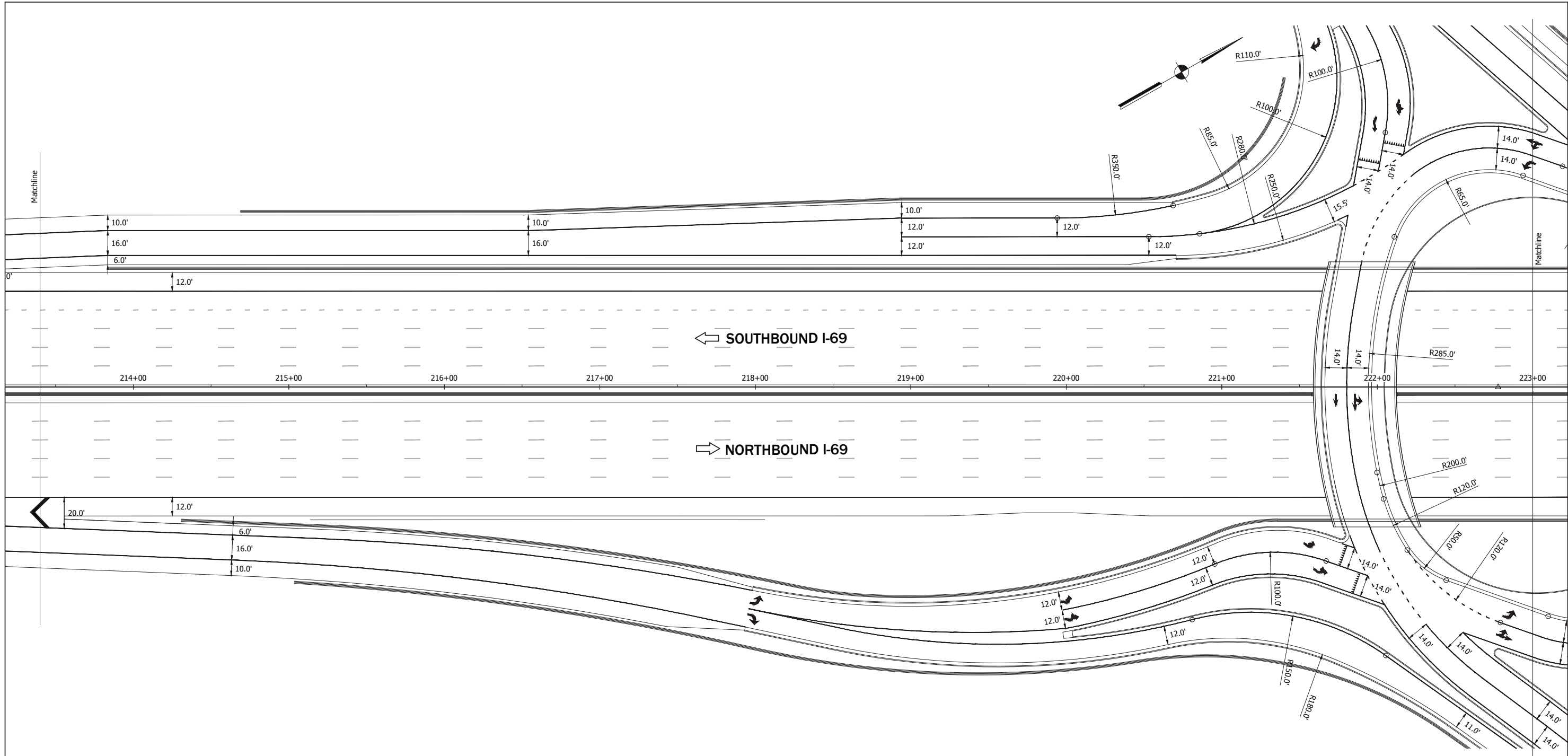
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DESIGNED: <u>WRC</u>	DRAWN: <u>JNII</u>
CHECKED: <u>JAR</u>	CHECKED: <u>JAR</u>

INDIANA  
DEPARTMENT OF TRANSPORTATION

SIGNING & MARKING DETAILS  
LINE "A" & RAMPS

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE -
VERTICAL SCALE N/A	DESIGNATION 1298035
SURVEY BOOK -	SHEETS 26 of 33
CONTRACT IR-35629	PROJECT 1298035

File Name: \\UCS04FS\\Road\\Road\\Team3\\C3D\\13-407\\Road\\Dwg\\Plans\\Sign Mark Plan.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John



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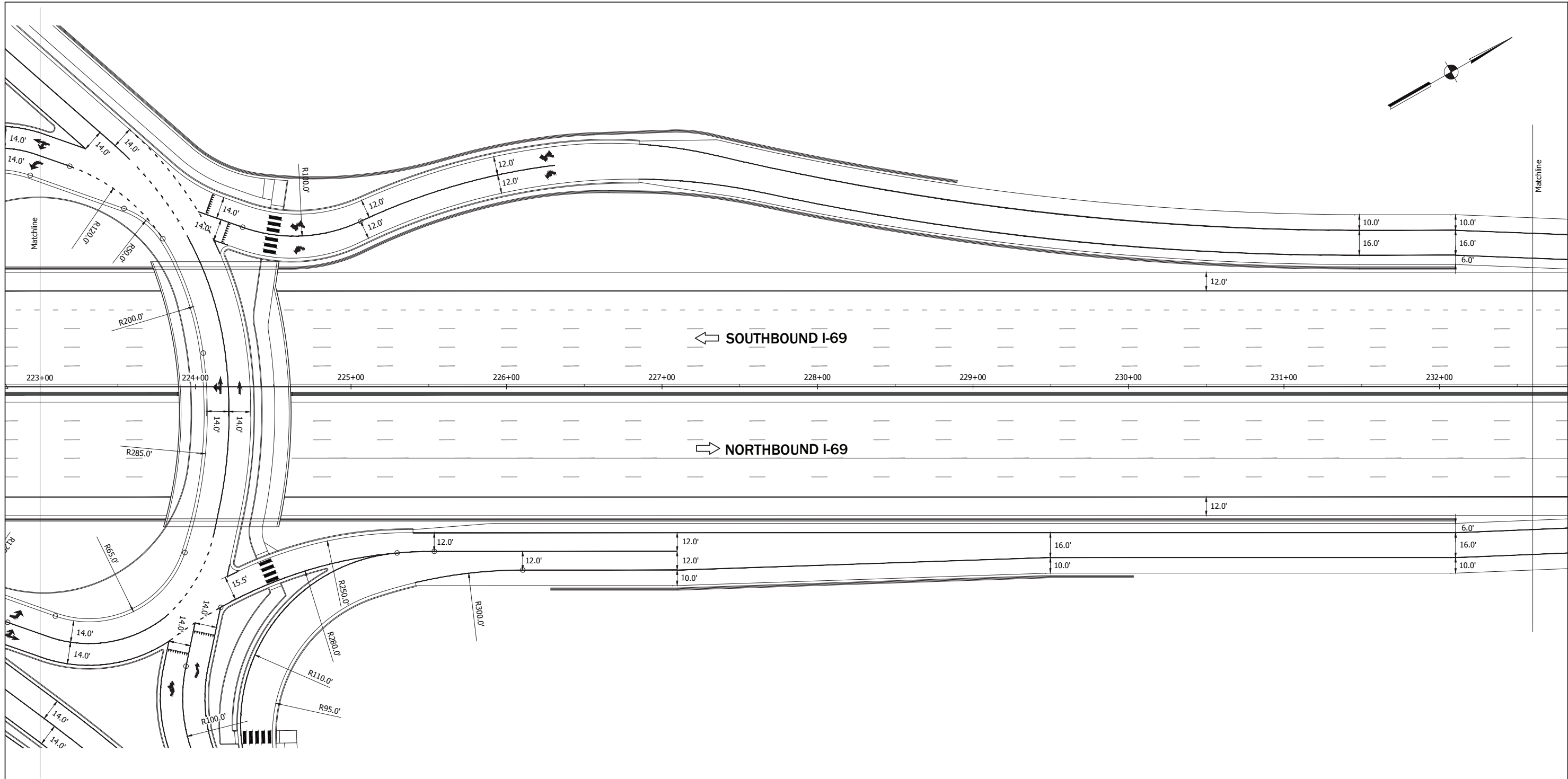
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DESIGNED:	WRC	DRAWN:	JNII
CHECKED:	JAR	CHECKED:	JAR

INDIANA  
DEPARTMENT OF TRANSPORTATION

SIGNING & MARKING DETAILS  
LINE "A" & RAMPS

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE -	
VERTICAL SCALE N/A	DESIGNATION 1298035	
SURVEY BOOK -	SHEETS 27 of 33	
CONTRACT IR-35629	PROJECT 1298035	

File Name: \\UCS04FS\\Road\\Road\\Team3\\C3D\\13-407\\Road\\Dwg\\Plans\\Sign Mark Plan.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John



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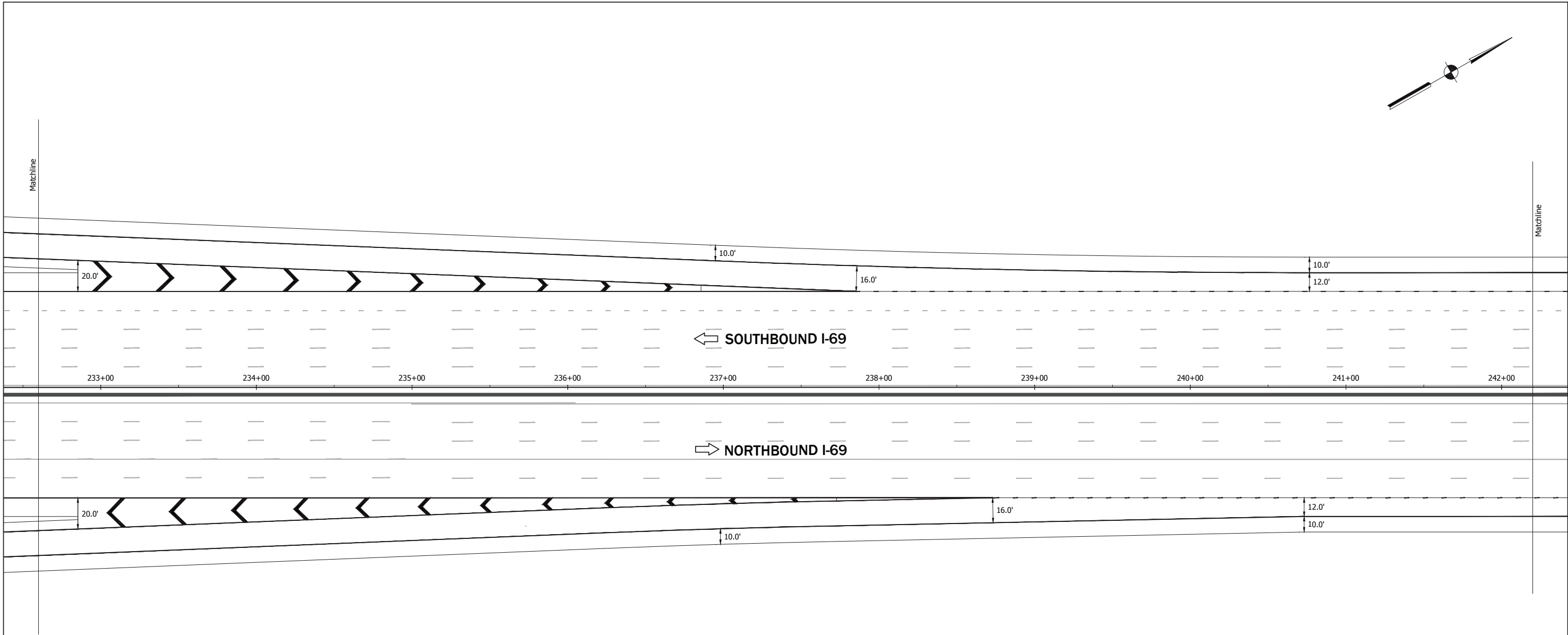
RECOMMENDED FOR APPROVAL	
DESIGN ENGINEER	DATE
DESIGNED: WRC	DRAWN: JNII
CHECKED: JAR	CHECKED: JAR

INDIANA  
DEPARTMENT OF TRANSPORTATION

SIGNING & MARKING DETAILS  
LINE "A" & RAMPS

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE -		
VERTICAL SCALE N/A	DESIGNATION 1298035		
SURVEY BOOK -	SHEETS 28 of 33		
CONTRACT IR-35629	PROJECT 1298035		

File Name: \\UCS04FS\\Road\\Road\\Team3\\C3D\\13-407\\Road\\Dwg\\Plans\\Sign Mark Plan.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John



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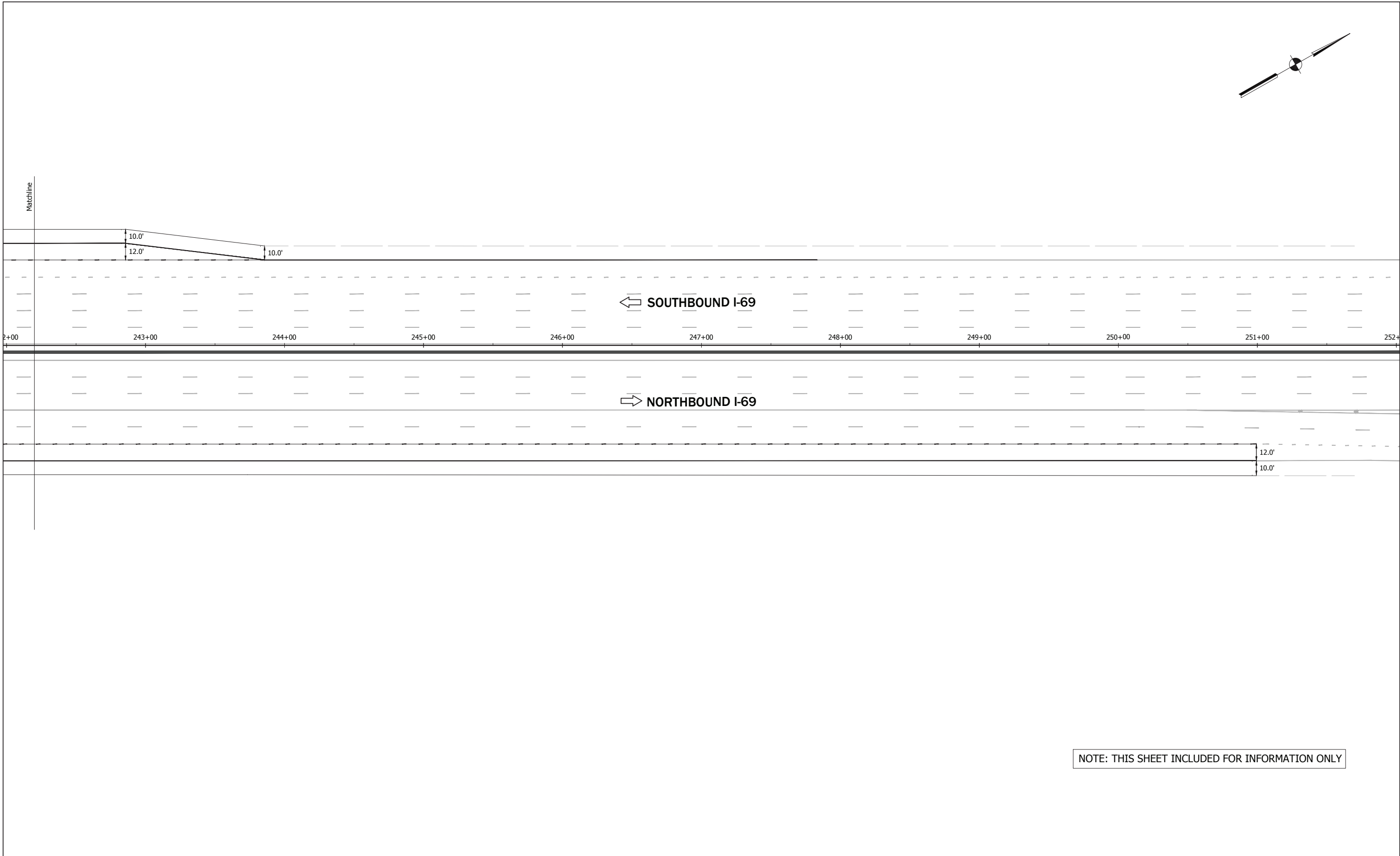
RECOMMENDED FOR APPROVAL _____	
DESIGNED: <u>WRC</u>	DRAWN: <u>JNII</u>
CHECKED: <u>JAR</u>	CHECKED: <u>JAR</u>

INDIANA  
DEPARTMENT OF TRANSPORTATION

SIGNING & MARKING DETAILS  
LINE "A" & RAMPS

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE -		
VERTICAL SCALE N/A	DESIGNATION 1298035		
SURVEY BOOK -	SHEETS 29 of 33		
CONTRACT IR-35629	PROJECT 1298035		

File Name: \\UCS04FS\\Road\\Road\\Team3\\C3D\\13-407\\Road\\Dwg\\Plans\\Sign Mark Plan.dwg Plot Date: 3/27/2015 Plotted By: Nimz, John



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RECOMMENDED FOR APPROVAL _____	
DESIGNED: <u>WRC</u>	DRAWN: <u>JNII</u>
CHECKED: <u>JAR</u>	CHECKED: <u>JAR</u>

INDIANA DEPARTMENT OF TRANSPORTATION	SIGNING & MARKING DETAILS LINE "A" & RAMPS	

HORIZONTAL SCALE 1" = 30'	BRIDGE FILE -		
VERTICAL SCALE N/A	DESIGNATION 1298035		
SURVEY BOOK -	SHEETS 30 of 33		
CONTRACT IR-35629	PROJECT 1298035		

# **Appendix C2**

## **South Bridge Draft Plan Excerpts (Roundabout Interchange)**

PROJECT	DESIGNATION
1298035	1500520
CONTRACT	BRIDGE FILE
-	XX

INDEX				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
XX	CONTINUOUS COMPOSITE STEEL PLATE GIRDER	TWO SPAN: 84'-6", 84'-6" SKEW: RADIAL	INTERSTATE 69	Sta. 506+47.91

KIN DESIGNATION NUMBERS	
DESIGNATION	DESCRIPTION
1298035	ROADWAY INTERCHANGE AT I-69 & 106th STREET
	BRIDGE
1500520	EASTBOUND 106TH STREET OVER I-69
1500521	WESTBOUND 106TH STREET OVER I-69

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OF TRANSPORTATION



BRIDGE PLANS

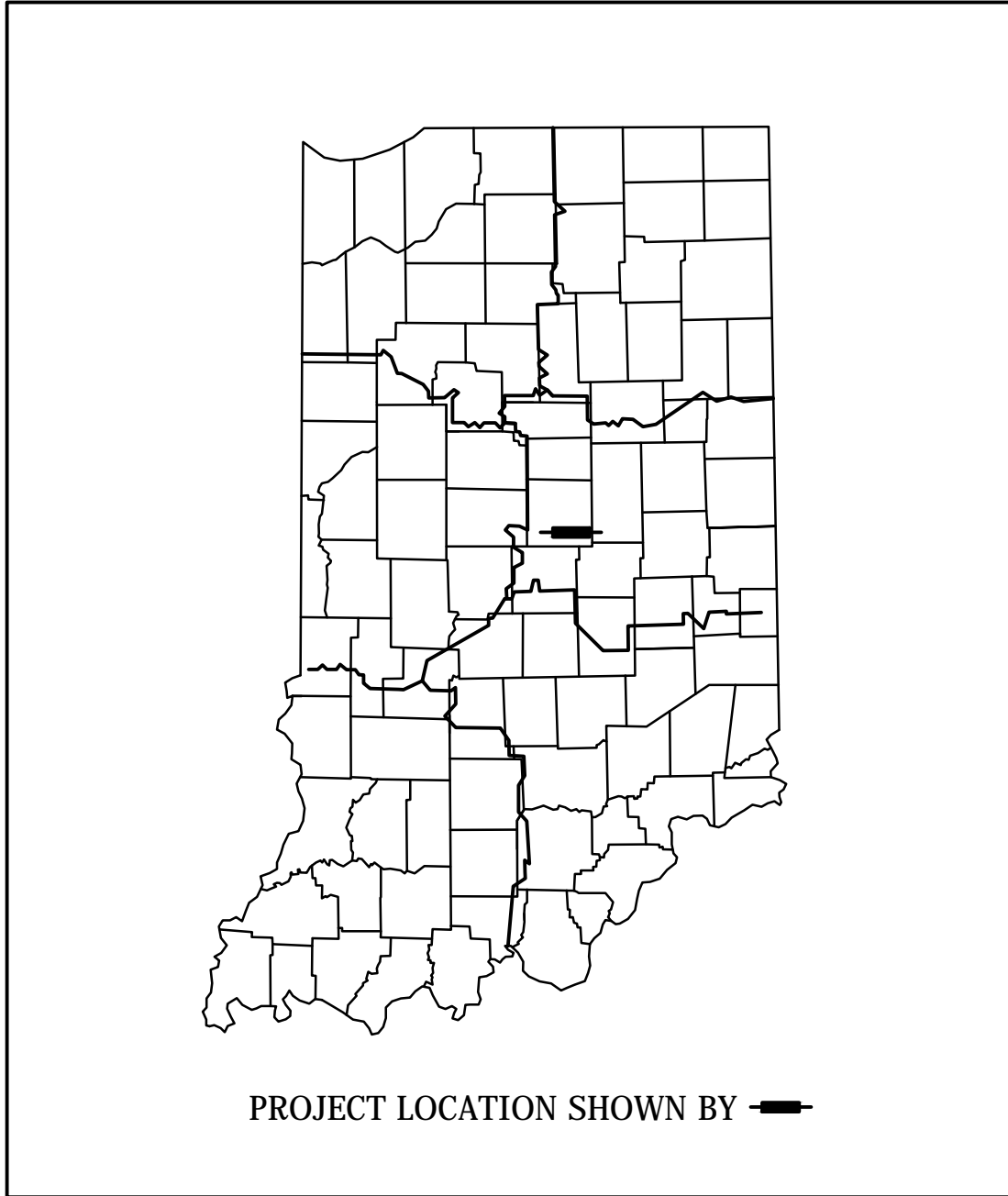
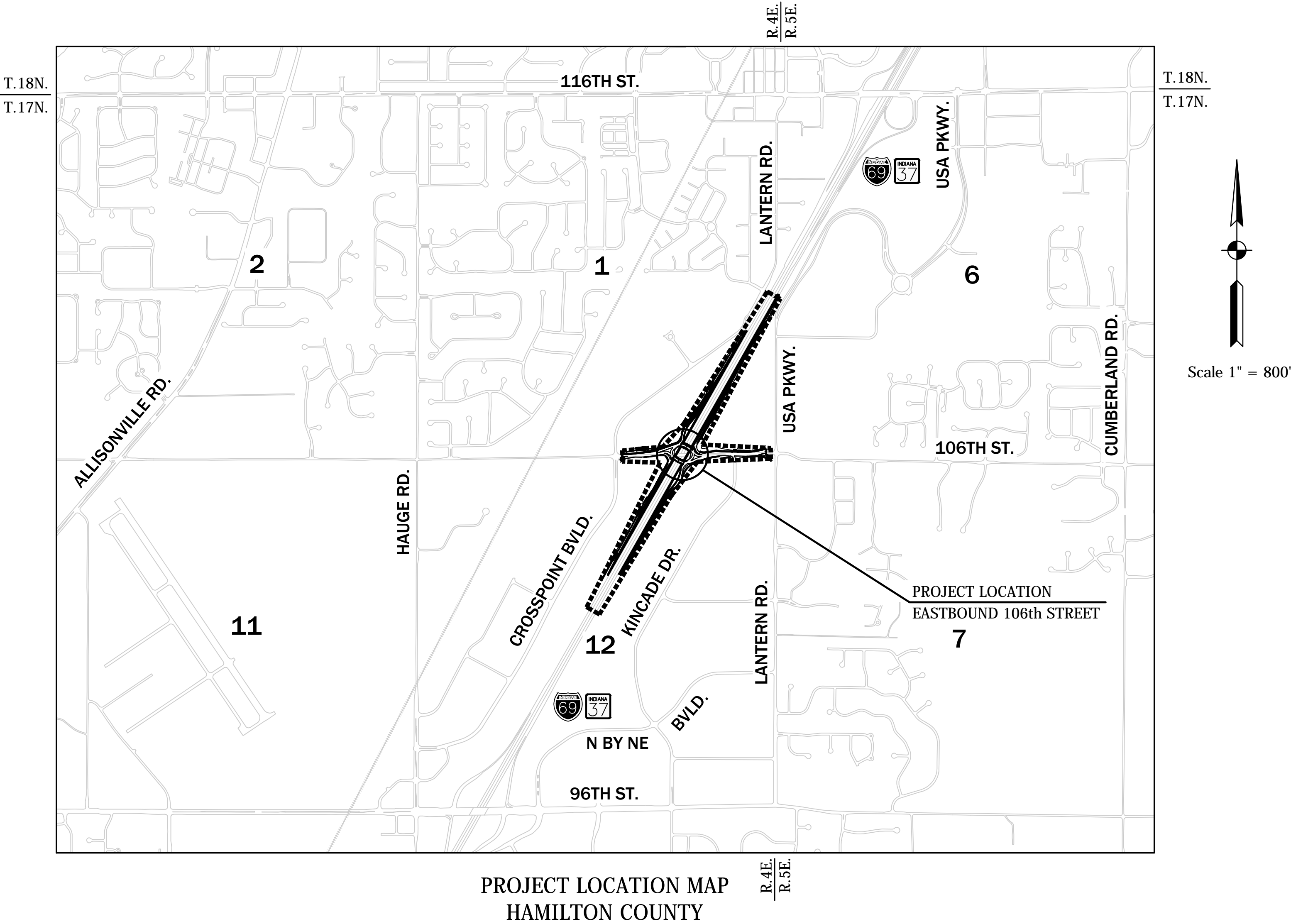
FOR SPANS OVER 20 FEET  
EASTBOUND 106th STREET  
OVER  
INTERSTATE 69

PROJECT NO. 1500520 P.E.

Replacement of 106th Street Bridge over Interstate 69. The eastbound bridge is  
Located 1.2 Miles North of East 96th Street on I-69, in Sections 1 & 12, of Township  
17 North, Range 4 East, Delaware Township, in Hamilton County Indiana.

Note: See Next Sheet For Traffic Data.

NOTE TO REVIEWER:  
WE WILL WORK WITH INDOT PROJECT  
MANAGER ON STRUCTURE NUMBER.



LATITUDE: 39°56'30"N LONGITUDE: 86°01'08"W

BRIDGE LENGTH : 0.030 MI.  
ROADWAY LENGTH : 1.390 MI.  
TOTAL LENGTH : 1.420 MI.

INDIANA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS DATED 2016 TO  
BE USED WITH THESE PLANS

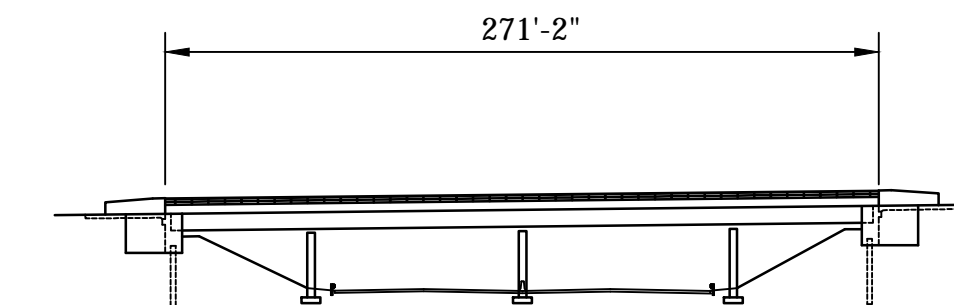
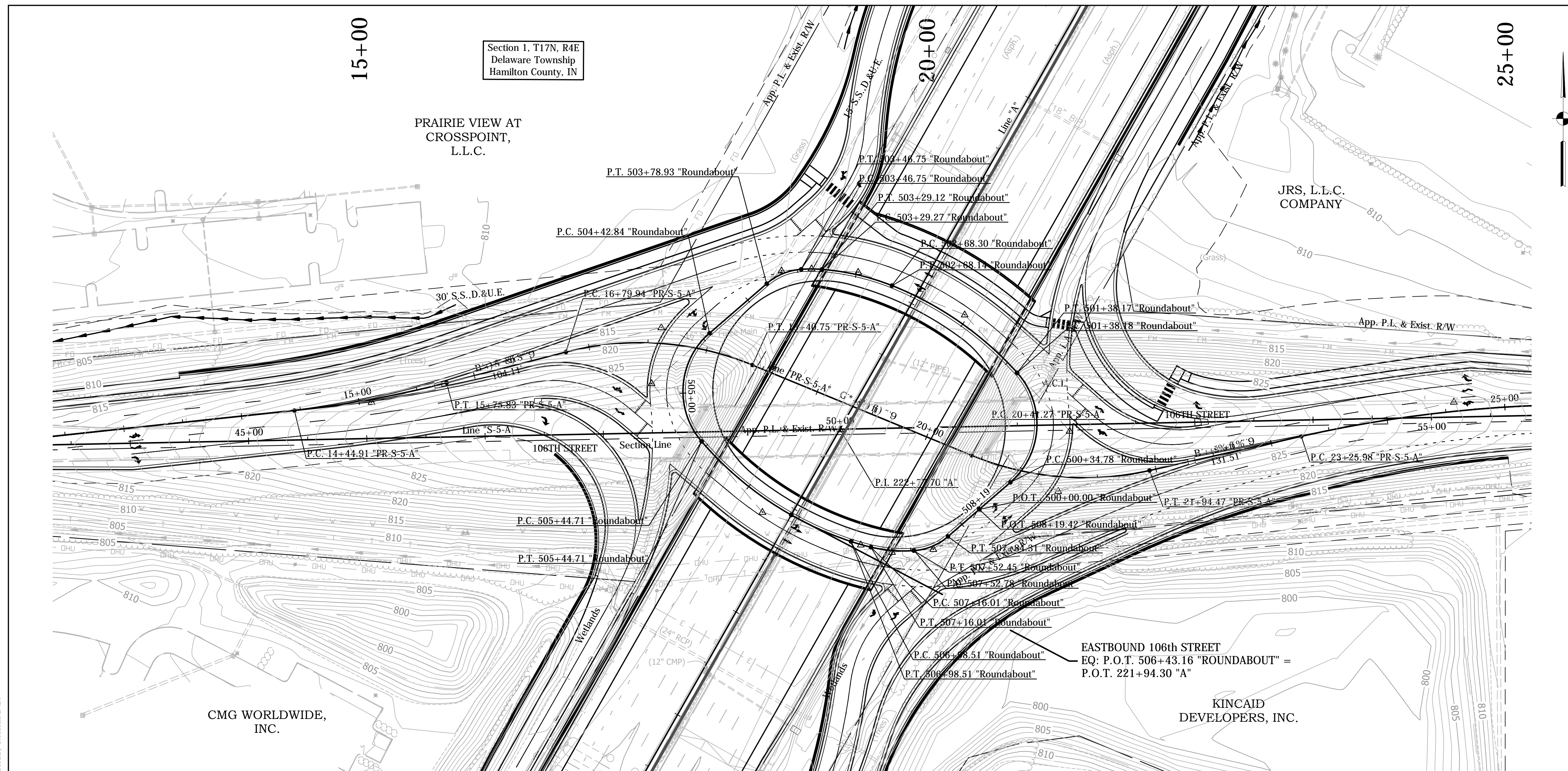


1625 N. Post Road  
Indianapolis, IN 46219  
Phone 317-895-2585  
Fax 317-895-2596  
www.ucindy.com

PLANS PREPARED BY:	UNITED CONSULTING	(317) 895-2585
		PHONE NUMBER
CERTIFIED BY:		DATE
APPROVED FOR LETTING:	INDIANA DEPARTMENT OF TRANSPORTATION	DATE

BRIDGE FILE	
XX	
DESIGNATION	
1500520	
SURVEY BOOK	SHEETS
-	1 of 6
CONTRACT	PROJECT
-	1298035

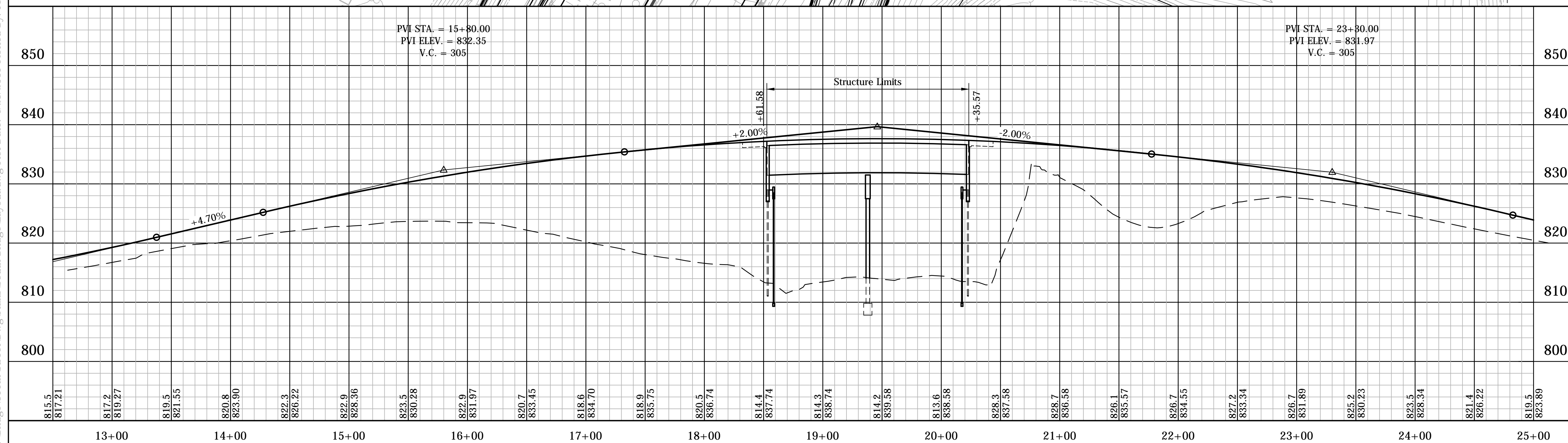




Existing continuous composite steel beam bridge. The bridge was rehabilitated in 1986. The bridge is a four span 36'-5", 99'-2", 99'-2", 36'-5" and has a skew of 1° 58' 11". H-Y girders with U-W flange and U-W deck. Structure is to be upgraded.

## EXISTING STRUCTURE

No Scale



CONTINUOUS COMPOSITE CURVED STEEL  
PLATE GIRDER BRIDGE  
TWO SPANS: 84'-6", 84'-6"  
SKEW: RADIAL  
CLEAR ROADWAY: 32'-0"  
EASTBOUND 106TH STREET OVER I-69



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Fax 317-895-2596  
[www.ucindy.com](http://www.ucindy.com)

RECOMMENDED  
FOR APPROVAL

---

DESIGN ENGINEER	DATE
-----------------	------

DESIGNED: SBH

DRAWN-BS	
----------	--

CHECKED: DPW

CHECKED:                     

INDIANA  
DEPARTMENT OF TRANSPORTATION

LAYOUT  
EASTBOUND 106th STREET OVER I-69

HORIZONTAL SCALE

$$1'' = 50'$$

VERTICAL SCALE

$$1'' = 10'$$

---

---

SURVEY BOOK

---

SURVEY BOOK

## CONTRACT

-

BRIDGE FILE

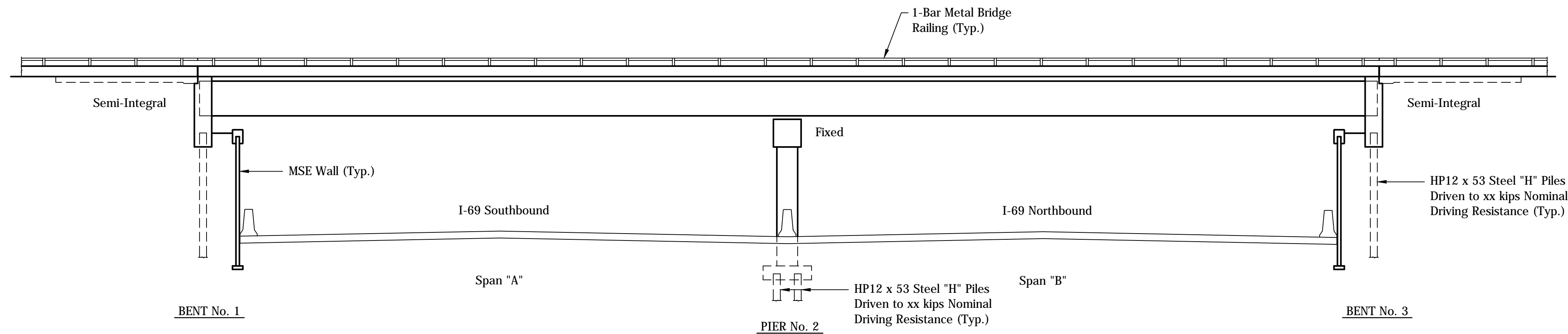
XX

DESIGNATION

1500520

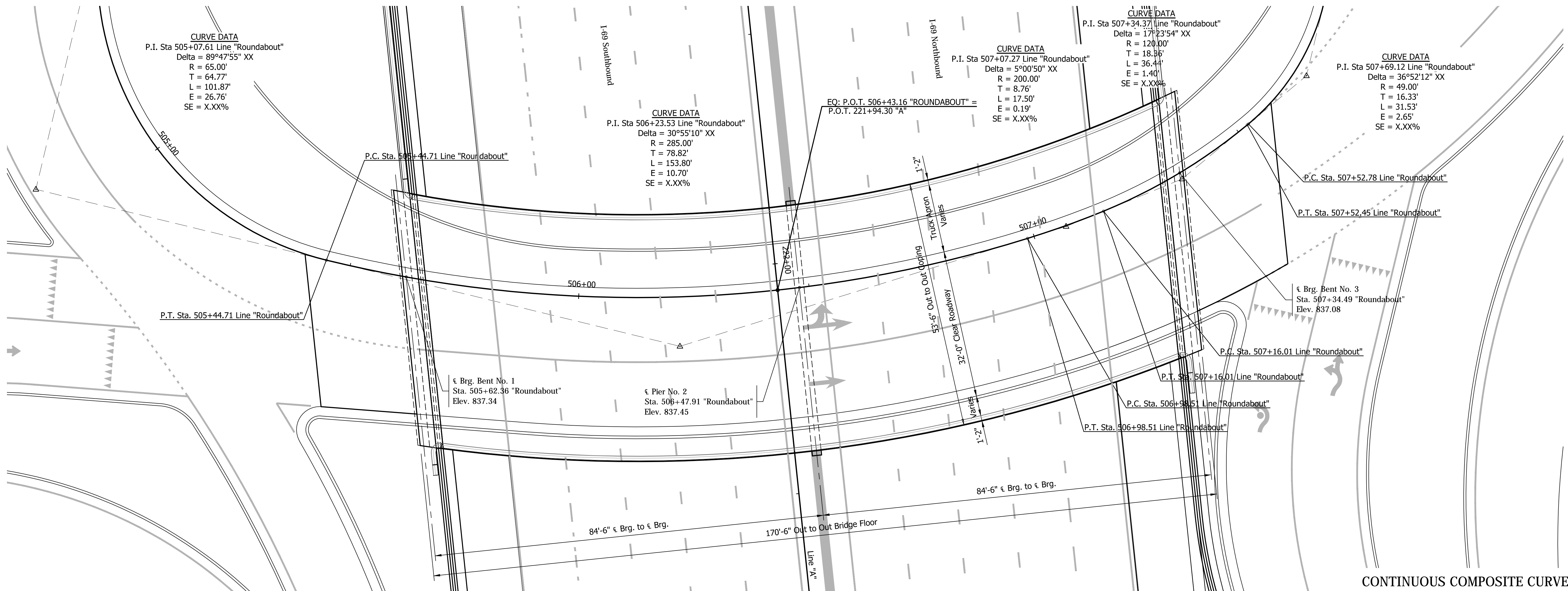
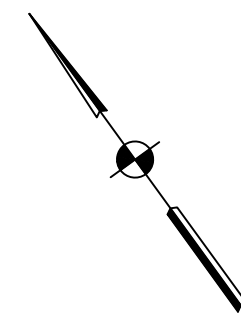
SHEETS

SHEETS		
	of	



ELEVATION

Scale: 3/32" = 1'-0"



PLAN

Scale: 3/32" = 1'-0"

CONTINUOUS COMPOSITE CURVED  
STEEL PLATE GIRDER BRIDGE  
TWO SPANS: 84'-6", 84'-6"  
SKEW: RADIAL  
CLEAR ROADWAY: 32'-0"  
EASTBOUND 106TH STREET OVER I-69

DATE	REVISION



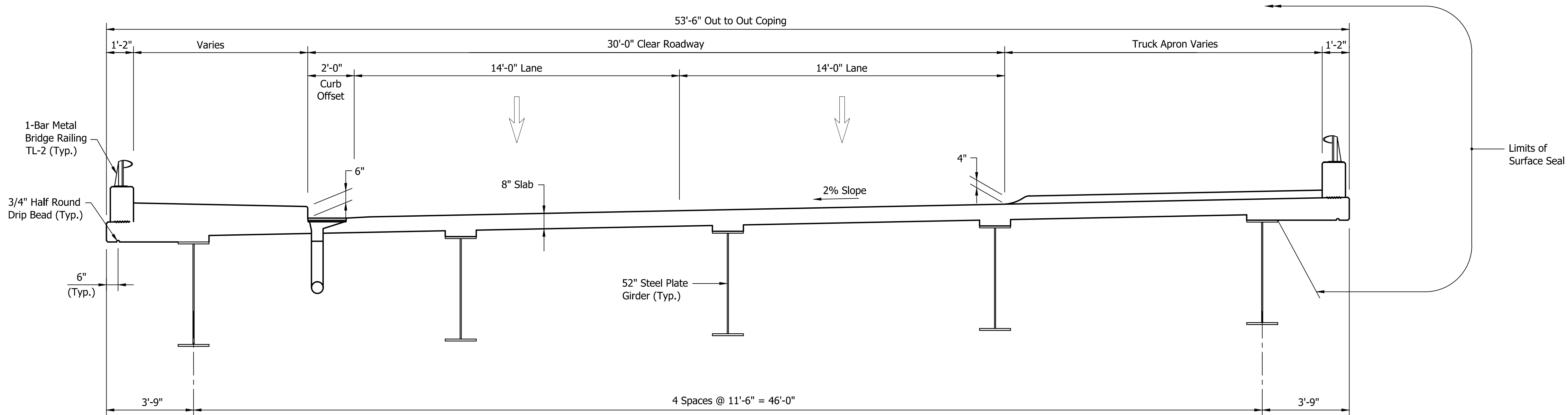
1625 N. Post Road  
Indianapolis, IN 46219  
Phone 317-895-2585  
Fax 317-895-2596  
www.ucindy.com

RECOMMENDED FOR APPROVAL	
DESIGN ENGINEER	
DATE	
DESIGNED: SBH	DRAWN: RSJ
CHECKED: DPW	CHECKED: SBH

INDIANA DEPARTMENT OF TRANSPORTATION
GENERAL PLAN EASTBOUND 106th STREET OVER I-69

HORIZONTAL SCALE AS NOTED	BRIDGE FILE XX
VERTICAL SCALE AS NOTED	DESIGNATION 1500520
SURVEY BOOK -	SHEETS 4 of 6
CONTRACT -	PROJECT 1298035

File Name: P:\C3D\13-407\Bridge\106th Street\Drawings\Plans\South Bridge\GP.dwg Plot Date: 4/28/2015 Plotted By: Jones, Richard S.



TYPICAL SECTION

Scale: 3/8" = 1'-0"

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior girder. The finishing machine was assumed to be supported 6 in. past the outside of the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the girder bottom flange and web.

Deck Falsework Loads: Designed for 15 lb/ft<sup>2</sup> for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway

Construction Live Load: Designed for 20 lb/ft extending 2-ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30-ft length of the deck centered with the finishing machine

Finishing-Machine Load: 4500 lb distributed over 10 ft along the coping

Wind Load: Designed for 70 mph horizontal wind loading of 50 lb/ft in accordance with AASHTO Guide Design Specifications for Bridge Temporary Works (1995), Figure 2.1.

NOTE TO REVIEWER:  
BECAUSE OF SCHEDULE WE HAVE ALREADY PROVIDED  
ANTICIPATED FOUNDATION LOADS TO GEOTECHNICAL  
CONSULTANT

ANTICIPATED FOUNDATION LOADS

Substructure Unit	Substructure Load (Tons)	Superstructure Load (Tons)	Total Load (Tons)
Bent No. 1	125	525	650
Pier No. 2	575	1500	2075
Bent No. 3	125	525	650

DESIGN DATA

Live Load:  
Superstructure and Substructure Designed for HL-93 Loading, in accordance with the AASHTO LFRD Bridge Design Specifications, seventh Edition, 2014, and interims.

Dead Load:  
Actual loads plus 35 psf allowance for future wearing surfaces and additional 15 psf for permanent metal forms.

Floor slab designed with a 7.5 inch structural depth and a 0.5 in integral wearing surface.

SEISMIC DESIGN DATA

Seismic Performance Zone X  
Acceleration Coefficient = X.XX  
Seismic Soil Profile Type Site X

ALLOWABLE DESIGN STRESSES

Class "A" Concrete f<sub>c</sub> = 3,500 p.s.i.  
Class "B" Concrete f<sub>c</sub> = 3,000 p.s.i.  
Class "C" Concrete f<sub>c</sub> = 4,000 p.s.i.  
Reinforcing Steel (Grade 60) f<sub>y</sub> = 60,000 p.s.i.

CONTINUOUS COMPOSITE CURVED  
STEEL PLATE GIRDER BRIDGE  
TWO SPANS: 84'-4", 84'-8"  
SKEW: RADIAL  
CLEAR ROADWAY: 30'-0"  
EASTBOUND 106TH STREET OVER I-69

DATE	REVISION	<div><div>1625 N. Post Road Indianapolis, IN 46219 Phone 317-895-2585 Fax 317-895-2596 www.ucindy.com</div></div>	RECOMMENDED FOR APPROVAL		INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE	BRIDGE FILE
			DESIGN ENGINEER		DATE		AS NOTED	XX
			DESIGNED: SBH		DRAWN: RSJ		VERTICAL SCALE	DESIGNATION
			CHECKED: DPW		CHECKED: SBH		AS NOTED	1500520
					GENERAL PLAN		SURVEY BOOK	SHEETS
					EASTBOUND 106th STREET OVER I-69		-	5 of 6
							CONTRACT	PROJECT
							-	1298035

# **Appendix C3**

## **North Bridge Draft Plan Excerpts (Roundabout Interchange)**

PROJECT	DESIGNATION
1298035	1500521
CONTRACT	BRIDGE FILE
-	XX

INDEX				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
XX	CONTINUOUS COMPOSITE STEEL PLATE GIRDER	TWO SPAN: 84'-6", 84'-6" SKEW: RADIAL	INTERSTATE 69	Sta. 502+41.68

KIN DESIGNATION NUMBERS	
DESIGNATION	DESCRIPTION
1298035	ROADWAY INTERCHANGE AT I-69 & 106th STREET
	BRIDGE
1500520	EASTBOUND 106TH STREET OVER I-69
1500521	WESTBOUND 106TH STREET OVER I-69

INDIANA DEPARTMENT  
OF TRANSPORTATION



BRIDGE PLANS

FOR SPANS OVER 20 FEET

WESTBOUND 106th STREET

OVER

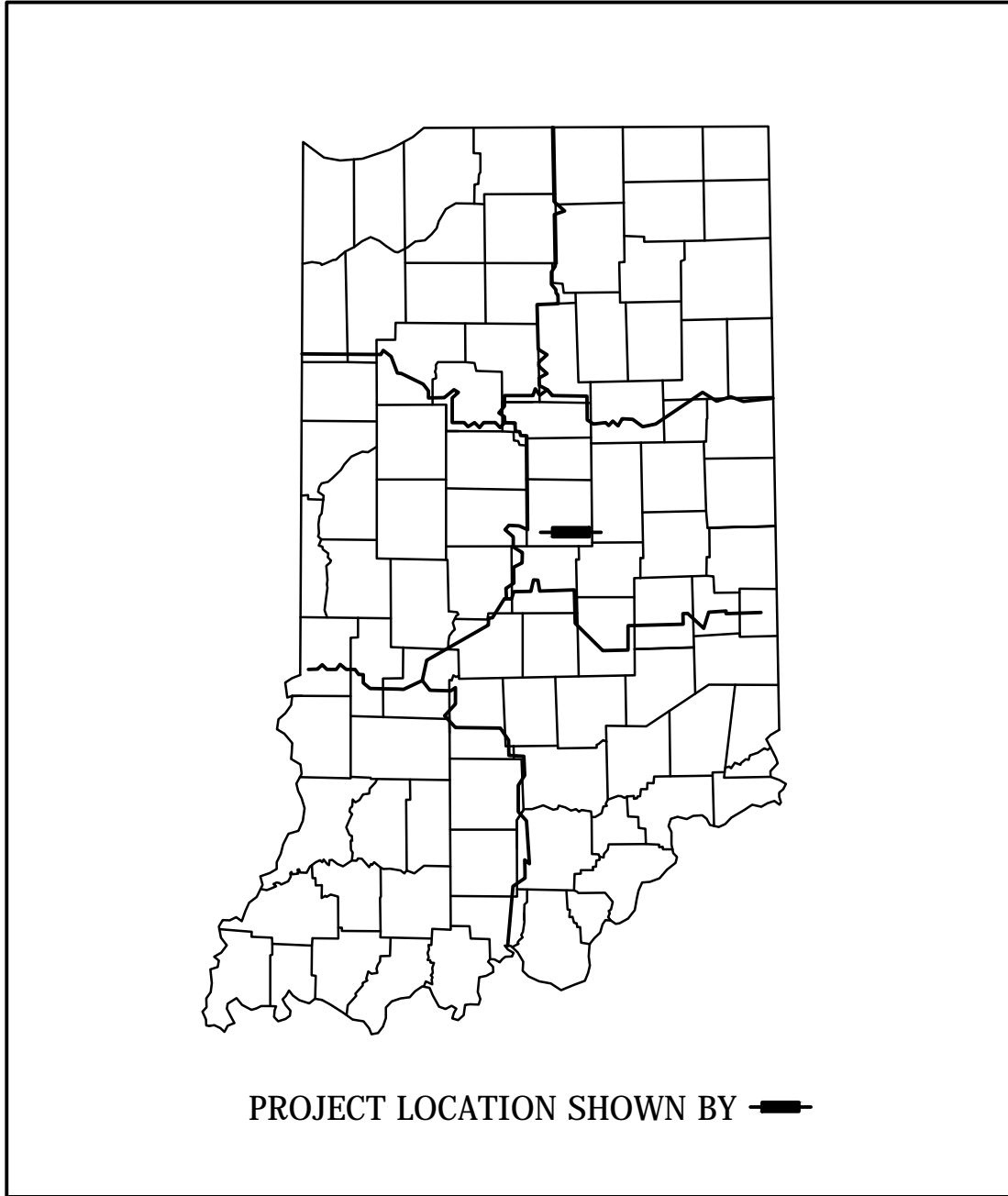
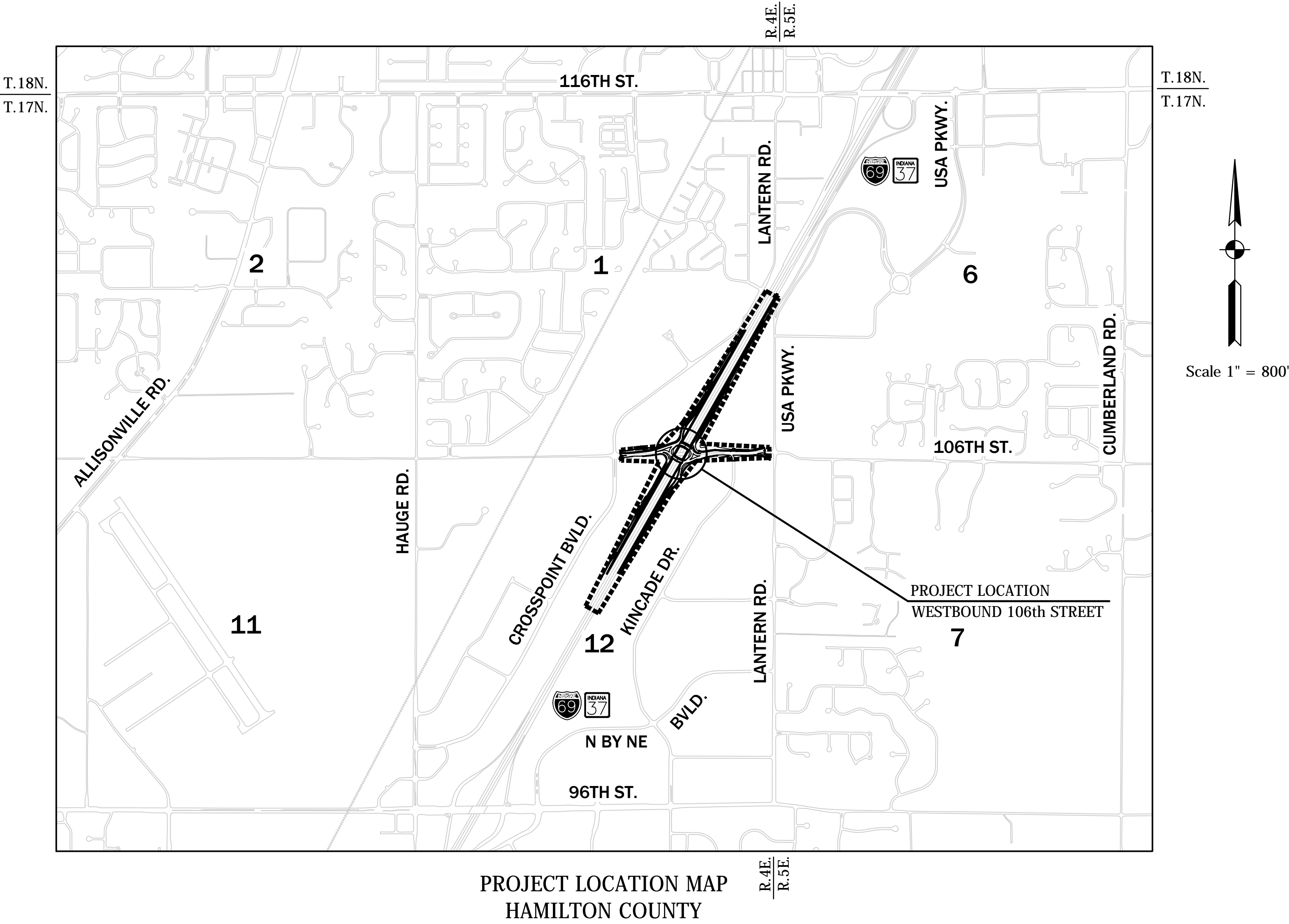
INTERSTATE 69

PROJECT NO. 1298035 P.E.

Replacement of 106th Street Bridge over Interstate 69. The westbound bridge is located 1.2 Miles North of East 96th Street on I-69, in Sections 1 & 12, of Township 17 North, Range 4 East, Delaware Township, in Hamilton County Indiana.

Note: See Next Sheet For Traffic Data.

NOTE TO REVIEWER:  
WE WILL WORK WITH INDOT PROJECT  
MANAGER ON STRUCTURE NUMBER.



LATITUDE: 39°56'32"N LONGITUDE: 86°01'07"W

BRIDGE LENGTH : 0.030 MI.  
ROADWAY LENGTH : 1.390 MI.  
TOTAL LENGTH : 1.420 MI.

INDIANA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS DATED 2016 TO  
BE USED WITH THESE PLANS



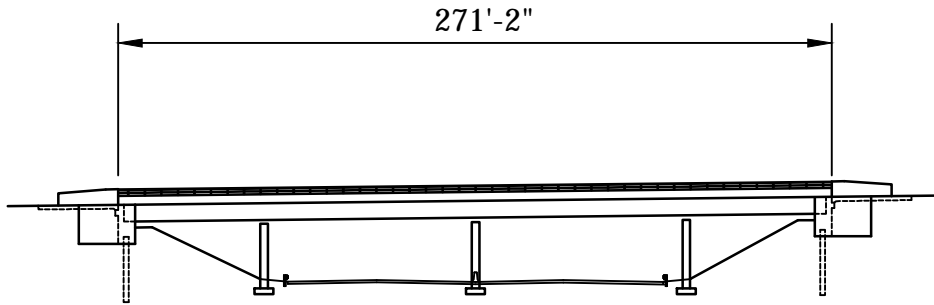
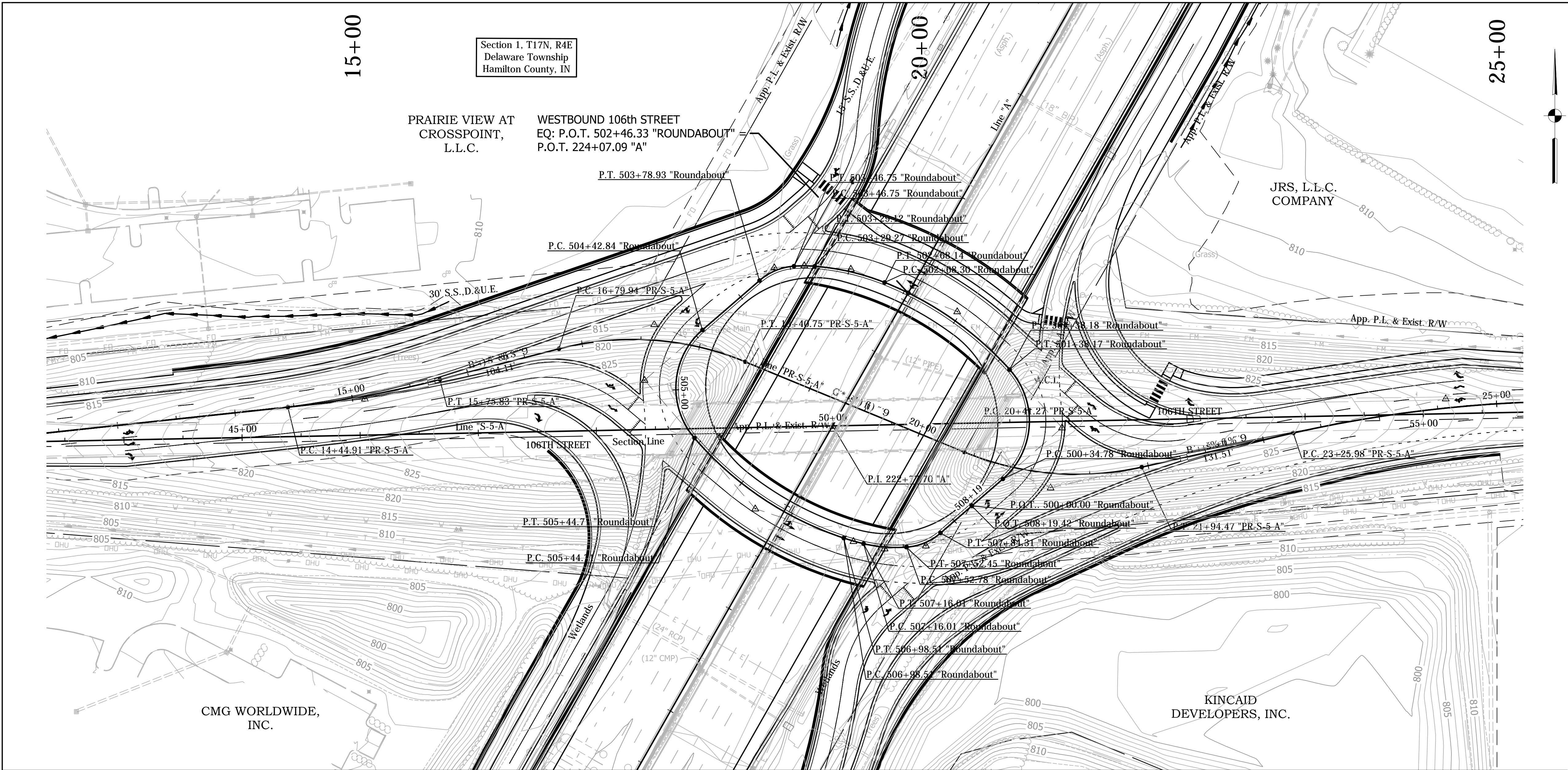
1625 N. Post Road  
Indianapolis, IN 46219  
Phone 317-895-2585  
Fax 317-895-2596  
www.ucindy.com

PLANS PREPARED BY:	UNITED CONSULTING	(317) 895-2585
		PHONE NUMBER
CERTIFIED BY:		DATE
APPROVED FOR LETTING:	INDIANA DEPARTMENT OF TRANSPORTATION	DATE

BRIDGE FILE	
XX	
DESIGNATION	
1500521	
SURVEY BOOK	SHEETS
-	1 of 6
CONTRACT	PROJECT
-	1298035

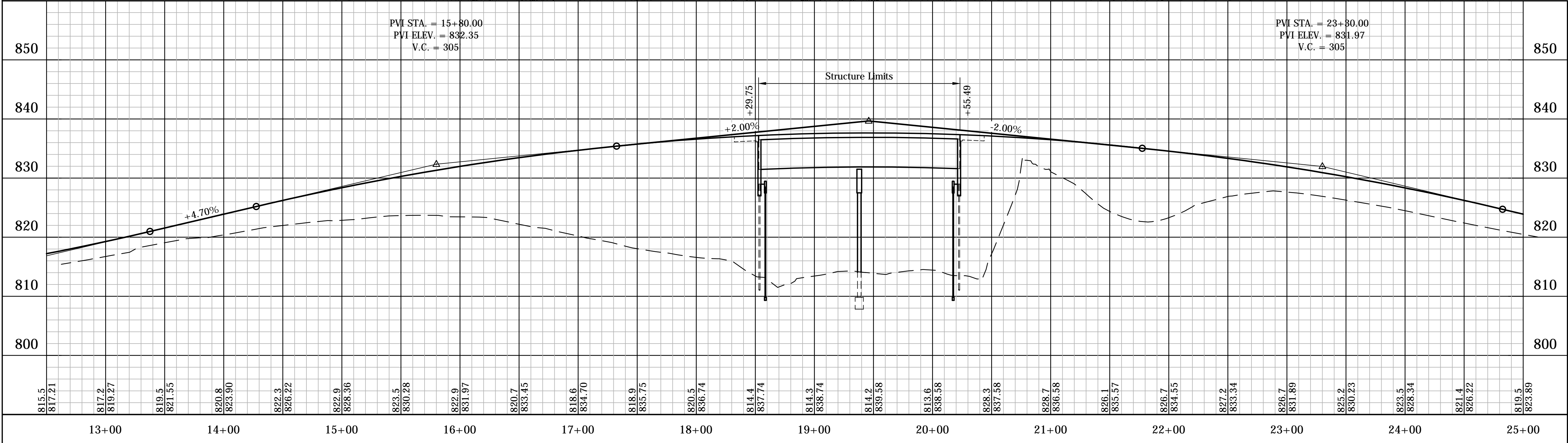


File Name: P:\C3D\13-407\Bridges\106th Street\Drawings\North Bridge\Layout.dwg Plot Date: 4/28/2015 Plotted By: Jones, Richard S.



Existing continuous composite steel beam bridge. The bridge was rehabilitated in 1986. The bridge is a four span 36'-5", 99'-2", 99'-2", 36'-5" and has a skew of 9° 51' 18". The bridge is to be removed.

EXISTING STRUCTURE  
No Scale



CONTINUOUS COMPOSITE CURVED STEEL  
PLATE GIRDER BRIDGE  
TWO SPANS: 84'-6", 84'-6"  
SKEW: RADIAL  
CLEAR ROADWAY: 32'-0"  
WESTBOUND 106TH STREET OVER I-69



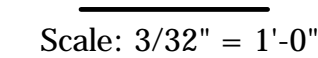
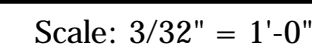
1625 N. Post Road  
Indianapolis, IN 46219  
Phone 317-895-2585  
Fax 317-895-2596  
www.ucindy.com


RECOMMENDED FOR APPROVAL	
DESIGNED: SBH	DRAWN: RSJ
CHECKED: DPW	CHECKED: SBH

INDIANA  
DEPARTMENT OF TRANSPORTATION

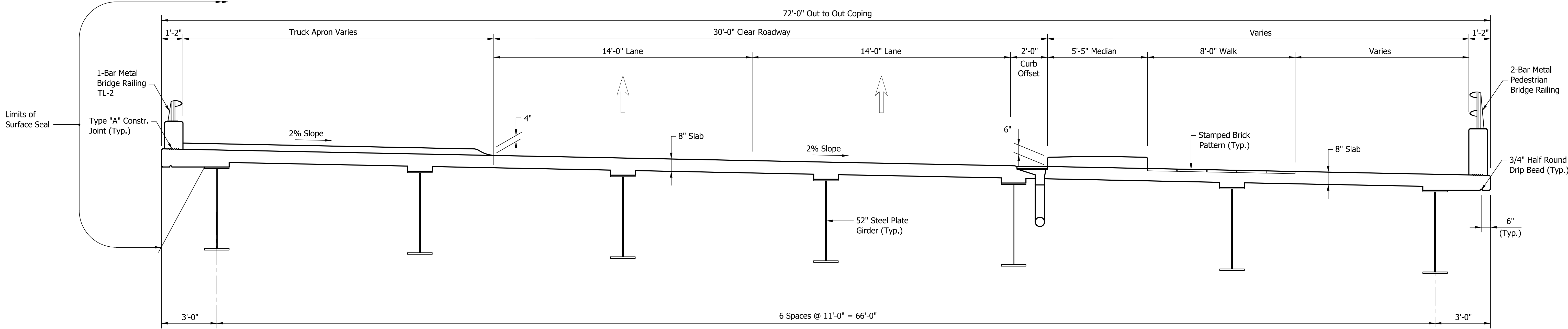
LAYOUT  
WESTBOUND 106th STREET OVER I-69

HORIZONTAL SCALE 1" = 50'	BRIDGE FILE XX
VERTICAL SCALE 1" = 10'	DESIGNATION 1500521
SURVEY BOOK -	SHEETS 3 of 6
CONTRACT -	PROJECT 1298035



DATE	REVISION	<div><div>1625 N. Post Road Indianapolis, IN 46219 Phone 317-895-2585 Fax 317-895-2596 www.ucindy.com</div></div>			RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
							AS NOTED	XX
							VERTICAL SCALE	DESIGNATION
							AS NOTED	1500521
							SURVEY BOOK	SHEETS
							-	4 of 6
		CHECKED: _____ DPW	CHECKED: _____ SBH	GENERAL PLAN WESTBOUND 106th STREET OVER I-69	CONTRACT	PROJECT		
					-	1298035		

File Name: P:\C3D\13-407\Bridge\106th Street\Drawg\Plans\North Bridge\GP.dwg Plot Date: 4/28/2015 Plotted By: Jones, Richard S.



### TYPICAL SECTION

Scale: 3/8" = 1'-0"

### CONSTRUCTION LOADING

The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior girder. The finishing machine was assumed to be supported 6 in. past the outside of the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the girder bottom flange and web.

Deck Falsework Loads: Designed for 15 lb/ft<sup>2</sup> for permanent metal stay-in-place deck forms, removable deck forms, and 2-ft exterior walkway

Construction Live Load: Designed for 20 lb/ft extending 2-ft past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30-ft length of the deck centered with the finishing machine

Finishing-Machine Load: 4500 lb distributed over 10 ft along the coping

Wind Load: Designed for 70 mph horizontal wind loading of 50 lb/ft in accordance with AASHTO Guide Design Specifications for Bridge Temporary Works (1995), Figure 2.1.

NOTE TO REVIEWER:  
BECAUSE OF SCHEDULE WE HAVE ALREADY PROVIDED  
ANTICIPATED FOUNDATION LOADS TO GEOTECHNICAL  
CONSULTANT

### ANTICIPATED FOUNDATION LOADS

Substructure Unit	Substructure Load (Tons)	Superstructure Load (Tons)	Total Load (Tons)
Bent No. 1	200	650	850
Pier No. 2	750	1850	2600
Bent No. 3	175	650	825

### GENERAL NOTES

Reinforcing steel covering shall be 2 1/2" in top and 1" min. in bottom of floor slabs, and 2" in all other parts, unless noted.

Surface seal top of bridge deck, all surfaces of concrete railing, face of deck coping and underside of deck from outside edge to flange of exterior beams. (Estimated Qnty. = xx,xxx Sft.)

### DESIGN DATA

Live Load:  
Superstructure and Substructure Designed for HL-93 Loading, in accordance with the AASHTO LFRD Bridge Design Specifications, seventh Edition, 2014, and interims.

Dead Load:  
Actual loads plus 35 psf allowance for future wearing surfaces and additional 15 psf for permanent metal forms.

Floor slab designed with a 7.5 inch structural depth and a 0.5 in integral wearing surface.


### SEISMIC DESIGN DATA

Seismic Performance Zone X  
Acceleration Coefficient = X.XX  
Seismic Soil Profile Type Site X

### ALLOWABLE DESIGN STRESSES

Class "A" Concrete f<sub>c</sub> = 3,500 p.s.i.  
Class "B" Concrete f<sub>c</sub> = 3,000 p.s.i.  
Class "C" Concrete f<sub>c</sub> = 4,000 p.s.i.  
Reinforcing Steel (Grade 60) f<sub>y</sub> = 60,000 p.s.i.

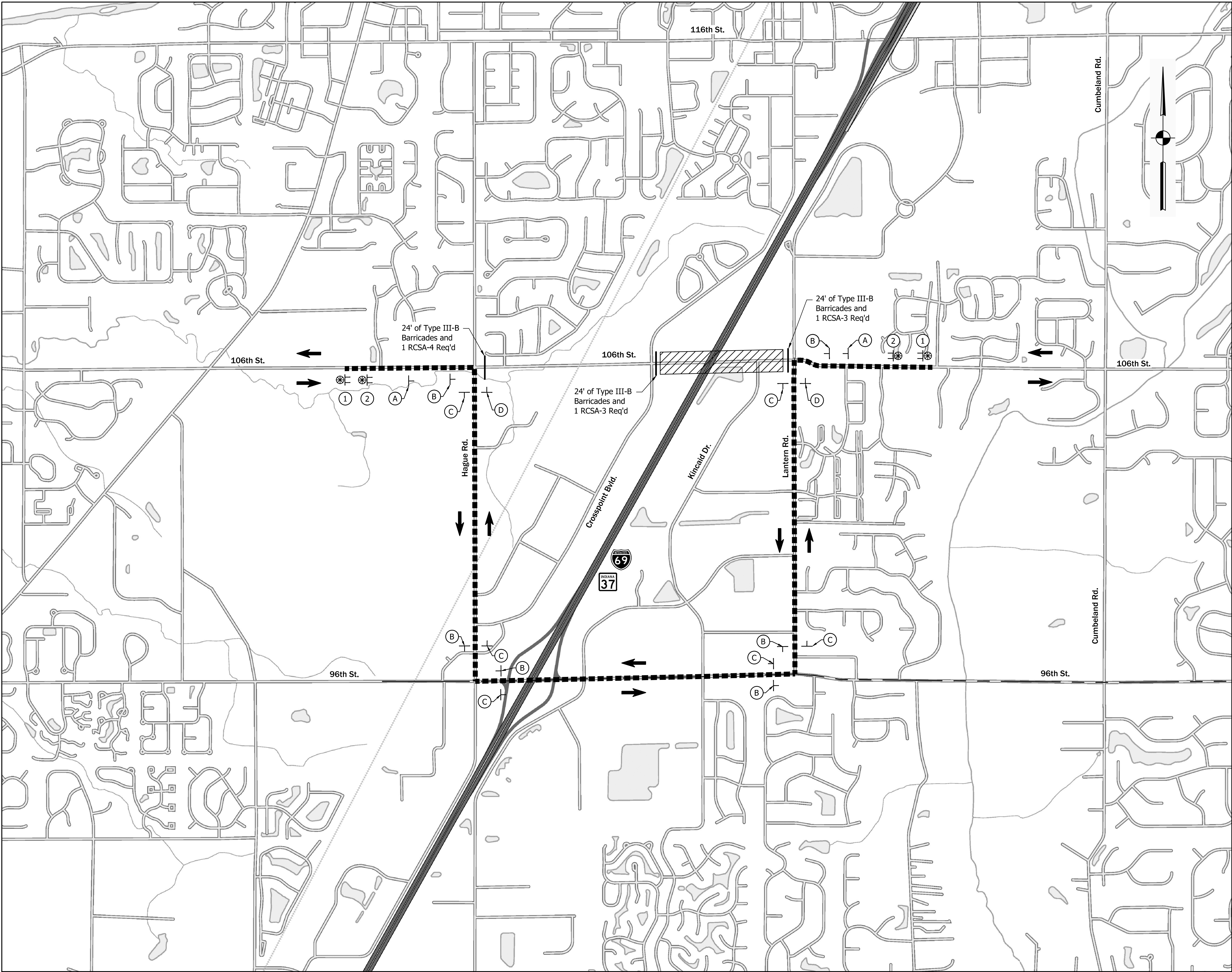
CONTINUOUS COMPOSITE CURVED  
STEEL PLATE GIRDER BRIDGE  
TWO SPANS: 84'-4", 84'-8"  
SKEW: RADIAL  
CLEAR ROADWAY: 30'-0"  
WESTBOUND 106TH STREET OVER I-69


DATE	REVISION	<div><div>1625 N. Post Road Indianapolis, IN 46219 Phone 317-895-2585 Fax 317-895-2596 www.ucindy.com</div></div>	RECOMMENDED FOR APPROVAL _____ <div>DESIGN ENGINEER _____ DATE _____</div>	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE		
					AS NOTED	XX		
					VERTICAL SCALE	DESIGNATION		
					AS NOTED	1500521		
					DESIGNED: <u>SBH</u> DRAWN: <u>RSJ</u> CHECKED: <u>DPW</u> CHECKED: <u>SBH</u>	GENERAL PLAN WESTBOUND 106th STREET OVER I-69	SURVEY BOOK	SHEETS
							-	5
		CONTRACT	PROJECT					
					-	1298035		

# **Appendix C4**


## **Draft Maintenance of Traffic Plan**

File Name: \\ucs04fs\road\roadteam3\C3D\13-407\Road\Dwg\Plans\MOT 106th St Detour Route.dwg Plot Date: 5/11/2015 Plotted By: Nimz, John







XW20-3  
①



XW20-2  
②



R11-2  
RCSA-3



R11-4  
XM4-10 (L or R)  
RCSA-4

SIGN LEGEND

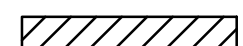
QUANTITY SUMMARY			
Detour Route	106th St.	Project Total	Units
Detour Route Marker Assembly	0	0	Each
Construction Sign, A	0	0	Each
Road Closure Sign Assembly	0	0	Each
Barricade, Type III-B	0	0	LFT

LEGEND

- TT

Construction Sign, Type A
- ⊗

Construction Warning Light, Type "A"
- T

Detour Route Marker Assembly
- Barricade, Type III-B
- 

Construction Area
- Detour Route - 106th St.
- Detour Route - Cumberland Rd.
- ←

Direction of Traffic Flow

DETOUR ROUTE MARKER ASSEMBLIES

- Ⓐ

Advance Turn D.R.M.A.
- Ⓑ

Directional D.R.M.A.
- Ⓒ

Confirming D.R.M.A.
- Ⓓ

End D.R.M.A.

NOTES: For Detour Route Marker Assemblies  
See Standard Drawing E801-TCDT-03.



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Fax 317-895-2596  
www.ucindy.com

RECOMMENDED FOR APPROVAL _____	
DESIGN ENGINEER _____	DATE _____
DESIGNED: _____ HEK	DRAWN: _____ JNII
CHECKED: _____ JAR	CHECKED: _____ JAR

INDIANA  
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC  
DETOUR ROUTE

HORIZONTAL SCALE	BRIDGE FILE		
1" = 800'	-		
VERTICAL SCALE	DESIGNATION		
N/A	1298035		
SURVEY BOOK	SHEETS		
-	16	of	156
CONTRACT	PROJECT		
IR-35629	1298035		

# **Appendix D**

## Early Coordination

August 12, 2014

«Title»  
«CompanyName»  
«CompanyName2»  
«CompanyName3»  
«Address1»  
«Address2»  
«City», «State» «ZipCode»

Re: Des. No.: 1298035 New Interchange at 106<sup>th</sup> Street and I-69, Hamilton County  
**Environmental Early Coordination**

Dear «Title1» «Last\_Name»:

The Indiana Department of Transportation (INDOT) intends to proceed with the aforementioned new interchange in Fishers, IN. This letter is part of the early coordination phase of the environmental review process. We are requesting comments from your area of expertise regarding any possible environmental effects associated with this project. **Please use the above designation numbers and description in your reply.** We will incorporate your comments into a study of the project's environmental impacts.

This project is being developed by the Indiana Department of Transportation (INDOT), with active support and sponsorship from 1) the Town of Fishers and 2) Hamilton County. Currently, there is no access to or from I-69 at 106<sup>th</sup> Street. Access at this location is needed to support the existing traffic volumes as well as the anticipated future growth. The area near the proposed 106<sup>th</sup> Street interchange, and in particular the existing platted commercial office parks along the east side of I-69 between 96<sup>th</sup> Street and 116<sup>th</sup> Street, are currently experiencing development activity. The INDOT Average Daily Traffic Interactive Map estimates 110,000 vehicles per day (year 2011) for the segment of I-69 from 96<sup>th</sup> Street to 116<sup>th</sup> Street. Motorists currently use the I-69 interchanges at 96<sup>th</sup> Street or 116<sup>th</sup> Street to gain access to the 106<sup>th</sup> Street area; however, these existing interchanges currently experience congestion and delay during peak periods, and capacity is anticipated to deteriorate more over time. The I-69 interchanges at 96<sup>th</sup> Street and 116<sup>th</sup> Street are not easily expandable since, for critical movements, they currently have dual right and left turn lanes on the ramps at the signalized ramp junctions, as well as dual lane left turn lanes on the bridges. Further expansion would result in significant impacts and cost.

New right-of-way will be required for this project. All existing right-of-way will be verified during the land acquisition process, which may reveal the need for additional parcels. Several interchange alternatives were considered: a tight diamond interchange, single point urban interchange (SPUI), roundabout, and diverging diamond interchange (DDI). The roundabout alternative is preferred. See Attachment A for project location and schematic layouts.

Construction of the Operation Indy Commute project to add capacity along mainline I-69 northeast of Indianapolis will be wrapping up in the future, ahead of this interchange project. At that time, I-69 under 106<sup>th</sup> Street will consist of four 12 foot through lanes, a 12 foot auxiliary lane connecting the entrance and exit ramps of 96<sup>th</sup> Street and 116<sup>th</sup> Street, ten foot outside shoulders and a five foot median shoulder in both directions. 106<sup>th</sup> Street currently has an overpass at I-69 with no direct access to the interstate. The existing cross section of 106<sup>th</sup> Street consists of two 11 foot lanes with four foot aggregate shoulders. I-69 is classified as an interstate with a posted speed of 65 mph. 106<sup>th</sup> Street is classified as a Minor Arterial with a posted speed of 40 mph. No pedestrian facilities currently exist along 106<sup>th</sup> Street between the intersections USA Parkway/Lantern Road and Crosspoint Blvd. A full two lane roundabout exists at USA Parkway/Lantern Road at the east end of the project, while a two lane roundabout is currently under construction at Crosspoint Boulevard at the west end of the project. Kincaid Drive currently intersects 106<sup>th</sup> Street from the south with stop control midway between I-69 and USA Parkway/Lantern Road. The north leg of the Kincaid Drive intersection is a private driveway. All land use around the intersection is commercial office park or planned urban development. See attached zoning map in Attachment B.

Drainage along I-69 is collected in road side ditches, while the median is collected through storm inlet structures, which ultimately discharge into the same road side ditches. Ultimately storm runoff from within the project limits is picked up by Cheeney Creek (part of the RJ Craig Regulated Drain) which flows from the east side of I-69 to the west. The RJ Craig Regulated Drain starts approximately 2,800 feet south of 106<sup>th</sup> Street on the east side of Lantern Road. The enclosed portion of the drain continues to a point approximately 2,150 feet north of 106<sup>th</sup> Street along USA Parkway at which point the drain turns and heads west through a 12 foot by 6 foot box culvert under I-69. After crossing under I-69 the drain switches from an enclosed system to an open channel which meanders westerly for a short distance before heading southwest. Cheeney Creek begins at the point the drain turns west to head under I-69. Drainage along 106<sup>th</sup> Street sheet flows off of the roadway and is collected in road side ditches at the base of the embankment. Approximately half of this drainage is drained back to the I-69 road side ditches while the remainder flows toward the adjacent intersections.

The approximate proposed right-of-way width for the 106<sup>th</sup> Street corridor is approximately 50 feet at the start of the on and off ramps at 106<sup>th</sup> Street, and expands upwards of 100 feet, with additional right-of-way required turning radii. Approximately 9.5 acres of additional right-of-way is required by the project with approximately 1.2 acres being temporary right-of-way. Attachment C contains preliminary plans right-of-way plans, prepared by United Consulting for the project. The project design should consider the two ponds in the immediate area and the three delineated emergent wetlands. Mitigation of impacted wetlands will be determined during the design process.

Tentative project milestones include Interchange Justification (IJ) Study Approval in fall 2014; Environmental Approval in spring 2015, and INDOT Letting in spring 2016.

The Red Flag Survey, approved by the INDOT Division of Environmental Services on October 10, 2013, is included as Attachment D.

Should we not receive your response **within thirty (30) calendar days** from the date of this letter, it will be assumed that your agency feels that there will be no adverse effects incurred as a result of the proposed project. However, should you find that an extension to the response time is necessary; a reasonable amount may be granted upon request. If you have any questions regarding this matter, please feel free to contact Evan Land of Corradino LLC, at 488-2363 or [eland@corradino.com](mailto:eland@corradino.com). Thank you in advance for your input.

Sincerely,

A handwritten signature in black ink that reads "Evan Land". The signature is written in a cursive, flowing style.

Evan Land  
Corradino LLC  
200 South Meridian Street, Suite 330  
Indianapolis, IN 46225

Attachments:

- A. Project Location/Schematic Layouts
- B. Zoning Map
- C. Right-of-Way Impacts
- D. Approved Red Flag Survey
- E. Site Photos



## Indiana Department of Environmental Management

*We make Indiana a cleaner, healthier place to live.*

---

Mike Pence  
Governor

100 North Senate Avenue  
Indianapolis, Indiana 46206

Thomas W. Easterly  
Commissioner

(317) 232-8603  
800) 451-6027  
[www.IN.gov/idem](http://www.IN.gov/idem)

Corradino Group  
Evan Land  
200 S. Meridian Street Suite #330  
Indianapolis, IN 46225

, IN

Date

To Engineers and Consultants Proposing Roadway Construction Projects:

RE: A new interchange is proposed at 106th Street and I-69 in Fishers, IN, to provide access to the Town of Fishers. On and off ramps will be located on each side of I-69 as well.

This letter from the Indiana Department of Environmental Management (IDEM) serves as a standardized response to enquiries inviting IDEM comments on roadway construction, reconstruction, or other improvement projects within existing roadway corridors when the proposed scope of the project is beneath the threshold requiring a formal National Environmental Policy Act-mandated Environmental Assessment or Environmental Impact Statement. As the letter attempts to address all roadway-related environmental topics of potential concern, it is possible that not every topic addressed in the letter will be applicable to your particular roadway project.

For additional information on specific roadway-related topics of interest, please visit the appropriate Web pages cited below, many of which provide contact information for persons within the various program areas who can answer questions not fully addressed in this letter. Also please be mindful that some environmental requirements may be subject to change and so each person intending to include a copy of this letter in their project documentation packet is advised to download the most recently revised version of the letter; found at: <http://www.in.gov/idem/5283.htm>.

To ensure that all environmentally-related issues are adequately addressed, IDEM recommends that you read this letter in its entirety, and consider each of the following issues as you move forward with the planning of your proposed roadway construction, reconstruction, or improvement project:

## WATER AND BIOTIC QUALITY

1. Section 404 of the Clean Water Act requires that you obtain a permit from the U.S. Army Corps of Engineers (USACE) before discharging dredged or fill materials into any wetlands or other waters, such as rivers, lakes, streams, and ditches. Other activities regulated include the relocation, channelization, widening, or other such alteration of a stream, and the mechanical clearing (use of heavy construction equipment) of wetlands. Thus, as a project owner or sponsor, it is your responsibility to ensure that no wetlands are disturbed without the proper permit. Although you may initially refer to the U.S. Fish and Wildlife Service National Wetland Inventory maps as a means of identifying potential areas of concern, please be mindful that those maps do not depict jurisdictional wetlands regulated by the USACE or the Department of Environmental Management. A valid jurisdictional wetlands determination can only be made by the USACE, using the 1987 Wetland Delineation Manual.

USACE recommends that you have a consultant check to determine whether your project will abut, or lie within, a wetland area. To view a list of consultants that have requested to be included on a list posted by the USACE on their Web site, see USACE [Permits and Public Notices](http://www.lrl.usace.army.mil/orf/default.asp) (<http://www.lrl.usace.army.mil/orf/default.asp>) and then click on "Information" from the menu on the right-hand side of that page. Their "Consultant List" is the fourth entry down on the "Information" page. Please note that the USACE posts all consultants that request to appear on the list, and that inclusion of any particular consultant on the list does not represent an endorsement of that consultant by the USACE, or by IDEM.

Much of northern Indiana (Newton, Lake, Porter, LaPorte, St. Joseph, Elkhart, LaGrange, Steuben, and Dekalb counties; large portions of Jasper, Starke, Marshall, Noble, Allen, and Adams counties; and lesser portions of Benton, White, Pulaski, Kosciusko, and Wells counties) is served by the USACE District Office in Detroit (313-226-6812). The central and southern portions of the state (large portions of Benton, White, Pulaski, Kosciusko, and Wells counties; smaller portions of Jasper, Starke, Marshall, Noble, Allen, and Adams counties; and all other Indiana counties located in north-central, central, and southern Indiana ) are served by the USACE Louisville District Office (502-315-6733).

Additional information on contacting these U.S. Army Corps of Engineers (USACE) District Offices, government agencies with jurisdiction over wetlands, and other water quality issues, can be found at <http://www.in.gov/idem/4396.htm>. IDEM recommends that impacts to wetlands and other water resources be avoided to the fullest extent.

2. In the event a Section 404 wetlands permit is required from the USACE, you also must obtain a Section 401 Water Quality Certification from the IDEM Office of Water Quality Wetlands Program. To learn more about the Wetlands Program, visit: <http://www.in.gov/idem/4384.htm>.
3. If the USACE determines that a wetland or other water body is isolated and not subject to Clean Water Act regulation, it is still regulated by the state of Indiana . A State Isolated Wetland permit from IDEM's Office of Water Quality (OWQ) is required for any activity that results in the discharge of dredged or fill materials into isolated wetlands. To learn more about isolated wetlands, contact the OWQ Wetlands Program at 317-233-8488.
4. If your project will involve over a 0.5 acre of wetland impact, stream relocation, or other large-scale alterations to water bodies such as the creation of a dam or a water diversion, you should seek additional input from the OWQ Wetlands Program staff. Consult the Web at: <http://www.in.gov/idem/4384.htm> for the appropriate staff contact to further discuss your project.

5. Work within the one-hundred year floodway of a given water body is regulated by the Department of Natural Resources, Division of Water. The Division issues permits for activities regulated under the follow statutes:
  - o IC 14-26-2 Lakes Preservation Act 312 IAC 11
  - o IC 14-26-5 Lowering of Ten Acre Lakes Act No related code
  - o IC 14-28-1 Flood Control Act 310 IAC 6-1
  - o IC 14-29-1 Navigable Waterways Act 312 IAC 6
  - o IC 14-29-3 Sand and Gravel Permits Act 312 IAC 6
  - o IC 14-29-4 Construction of Channels Act No related code

For information on these Indiana (statutory) Code and Indiana Administrative Code citations, see the DNR Web site at: <http://www.in.gov/dnr/water/9451.htm> . Contact the DNR Division of Water at 317-232-4160 for further information.

The physical disturbance of the stream and riparian vegetation, especially large trees overhanging any affected water bodies should be limited to only that which is absolutely necessary to complete the project. The shade provided by the large overhanging trees helps maintain proper stream temperatures and dissolved oxygen for aquatic life.

6. For projects involving construction activity (which includes clearing, grading, excavation and other land disturbing activities) that result in the disturbance of one (1), or more, acres of total land area, contact the Office of Water Quality – Watershed Planning Branch (317/233-1864) regarding the need for of a Rule 5 Storm Water Runoff Permit. Visit the following Web page
  - o <http://www.in.gov/idem/4902.htm>

To obtain, and operate under, a Rule 5 permit you will first need to develop a Construction Plan (<http://www.in.gov/idem/4917.htm#constreg>), and as described in 327 IAC 15-5-6.5 (<http://www.in.gov/legislative/iac/T03270/A00150> [PDF], pages 16 through 19). Before you may apply for a Rule 5 Permit, or begin construction, you must submit your Construction Plan to your county Soil and Water Conservation District (SWCD) (<http://www.in.gov/isda/soil/contacts/map.html>).

Upon receipt of the construction plan, personnel of the SWCD or the Indiana Department of Environmental Management will review the plan to determine if it meets the requirements of 327 IAC 15-5. Plans that are deemed deficient will require re-submittal. If the plan is sufficient you will be notified and instructed to submit the verification to IDEM as part of the Rule 5 Notice of Intent (NOI) submittal. Once construction begins, staff of the SWCD or Indiana Department of Environmental Management will perform inspections of activities at the site for compliance with the regulation.

Please be mindful that approximately 149 Municipal Separate Storm Sewer System (MS4) areas are now being established by various local governmental entities throughout the state as part of the implementation of Phase II federal storm water requirements. All of these MS4 areas will eventually take responsibility for Construction Plan review, inspection, and enforcement. As these MS4 areas obtain program approval from IDEM, they will be added to a list of MS4 areas posted on the IDEM Website at: <http://www.in.gov/idem/4900.htm>.

If your project is located in an IDEM-approved MS4 area, please contact the local MS4 program about meeting their storm water requirements. Once the MS4 approves the plan, the NOI can be submitted to IDEM.

Regardless of the size of your project, or which agency you work with to meet storm water

requirements, IDEM recommends that appropriate structures and techniques be utilized both during the construction phase, and after completion of the project, to minimize the impacts associated with storm water runoff. The use of appropriate planning and site development and appropriate storm water quality measures are recommended to prevent soil from leaving the construction site during active land disturbance and for post construction water quality concerns. Information and assistance regarding storm water related to construction activities are available from the Soil and Water Conservation District (SWCD) offices in each county or from IDEM.

7. For projects involving impacts to fish and botanical resources, contact the Department of Natural Resources - Division of Fish and Wildlife (317/232-4080) for addition project input.
8. For projects involving water main construction, water main extensions, and new public water supplies, contact the Office of Water Quality - Drinking Water Branch (317-308-3299) regarding the need for permits.
9. For projects involving effluent discharges to waters of the State of Indiana , contact the Office of Water Quality - Permits Branch (317-233-0468) regarding the need for a National Pollutant Discharge Elimination System (NPDES) permit.
10. For projects involving the construction of wastewater facilities and sewer lines, contact the Office of Water Quality - Permits Branch (317-232-8675) regarding the need for permits.

## AIR QUALITY

The above-noted project should be designed to minimize any impact on ambient air quality in, or near, the project area. The project must comply with all federal and state air pollution regulations. Consideration should be given to the following:

1. Regarding open burning, and disposing of organic debris generated by land clearing activities; some types of open burning are allowed (<http://www.in.gov/ide/4148.htm>) under specific conditions. You also can seek an open burning variance from IDEM.

However, IDEM generally recommends that you take vegetative wastes to a registered yard waste composting facility or that the waste be chipped or shredded with composting on site (you must register with IDEM if more than 2,000 pounds is to be composted; contact 317/232-0066). The finished compost can then be used as a mulch or soil amendment. You also may bury any vegetative wastes (such as leaves, twigs, branches, limbs, tree trunks and stumps) onsite, although burying large quantities of such material can lead to subsidence problems, later on.

Reasonable precautions must be taken to minimize fugitive dust emissions from construction and demolition activities. For example, wetting the area with water, constructing wind barriers, or treating dusty areas with chemical stabilizers (such as calcium chloride or several other commercial products). Dirt tracked onto paved roads from unpaved areas should be minimized.

Additionally, if construction or demolition is conducted in a wooded area where blackbirds have roosted or abandoned buildings or building sections in which pigeons or bats have roosted for 3-5 years precautionary measures should be taken to avoid an outbreak of histoplasmosis. This disease is caused by the fungus *Histoplasma capsulatum*, which stems from bird or bat droppings that have accumulated in one area for 3-5 years. The spores from this fungus become airborne when the area is disturbed and can cause infections over an entire community downwind of the site. The area should be wetted down prior to cleanup or demolition of the project site. For more detailed

information on histoplasmosis prevention and control, please contact the Acute Disease Control Division of the Indiana State Department of Health at (317) 233-7272.

2. The U.S. EPA and the Surgeon General recommend that people not have long-term exposure to radon at levels above 4 pCi/L. (For a county-by-county map of predicted radon levels in Indiana, visit: <http://www.in.gov/idem/4145.htm>.)

The U.S. EPA further recommends that all homes (and apartments within three stories of ground level) be tested for radon. If in-home radon levels are determined to be 4 pCi/L, or higher, EPA recommends a follow-up test. If the second test confirms that radon levels are 4 pCi/L, or higher, EPA recommends the installation of radon-reduction measures. (For a list of qualified radon testers and radon mitigation (or reduction) specialists visit: [http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon\\_testers\\_mitigators\\_list.pdf](http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf).) It also is recommended that radon reduction measures be built into all new homes, particularly in areas like Indiana that have moderate to high predicted radon levels.

To learn more about radon, radon risks, and ways to reduce exposure visit: <http://www.in.gov/isdh/regsvcs/radhealth/radon.htm>, <http://www.in.gov/idem/4145.htm>, or <http://www.epa.gov/radon/index.html>.

3. With respect to asbestos removal: all facilities slated for renovation or demolition (except residential buildings that have (4) four or fewer dwelling units and which will not be used for commercial purposes) must be inspected by an Indiana-licensed asbestos inspector prior to the commencement of any renovation or demolition activities. If regulated asbestos-containing material (RACM) that may become airborne is found, any subsequent demolition, renovation, or asbestos removal activities must be performed in accordance with the proper notification and emission control requirements.

If no asbestos is found where a renovation activity will occur, or if the renovation involves removal of less than 260 linear feet of RACM off of pipes, less than 160 square feet of RACM off of other facility components, or less than 35 cubic feet of RACM off of all facility components, the owner or operator of the project does not need to notify IDEM before beginning the renovation activity.

For questions on asbestos demolition and renovation activities, you can also call IDEM's Lead/Asbestos section at 1-888-574-8150.

However, in all cases where a demolition activity will occur (even if no asbestos is found), the owner or operator must still notify IDEM 10 working days prior to the demolition, using the form found at <http://www.in.gov/icpr/webfile/formsdiv/44593.pdf>.

Anyone submitting a renovation/demolition notification form will be billed a notification fee based upon the amount of friable asbestos containing material to be removed or demolished. Projects that involve the removal of more than 2,600 linear feet of friable asbestos containing materials on pipes, or 1,600 square feet or 400 cubic feet of friable asbestos containing material on other facility components, will be billed a fee of \$150 per project; projects below these amounts will be billed a fee of \$50 per project. All notification remitters will be billed on a quarterly basis.

For more information about IDEM policy regarding asbestos removal and disposal, visit: <http://www.in.gov/idem/4983.htm>.

4. With respect to lead-based paint removal: IDEM encourages all efforts to minimize human

exposure to lead-based paint chips and dust. IDEM is particularly concerned that young children exposed to lead can suffer from learning disabilities. Although lead-based paint abatement efforts are not mandatory, any abatement that is conducted within housing built before January 1, 1978, or a child-occupied facility is required to comply with all lead-based paint work practice standards, licensing and notification requirements. For more information about lead-based paint removal visit: <http://www.in.gov/isdh/19131.htm>.

5. Ensure that asphalt paving plants are permitted and operate properly. The use of cutback asphalt, or asphalt emulsion containing more than seven percent (7%) oil distillate, is prohibited during the months April through October. See 326 IAC 8-5-2, Asphalt Paving Rule (<http://www.ai.org/legislative/iac/T03260/A00080.PDF>).
6. If your project involves the construction of a new source of air emissions or the modification of an existing source of air emissions or air pollution control equipment, it will need to be reviewed by the IDEM Office of Air Quality (OAQ). A registration or permit may be required under 326 IAC 2 (View at: [www.ai.org/legislative/iac/t03260/a00020.pdf](http://www.ai.org/legislative/iac/t03260/a00020.pdf).) New sources that use or emit hazardous air pollutants may be subject to Section 112 of the Clean Air Act and corresponding state air regulations governing hazardous air pollutants.
7. For more information on air permits visit: <http://www.in.gov/idem/4223.htm>, or to initiate the IDEM air permitting process, please contact the Office of Air Quality Permit Reviewer of the Day at (317) 233-0178 or OAMPROD atdem.state.in.us.

## LAND QUALITY

In order to maintain compliance with all applicable laws regarding contamination and/or proper waste disposal, IDEM recommends that:

1. If the site is found to contain any areas used to dispose of solid or hazardous waste, you need to contact the Office of Land Quality (OLQ) at 317-308-3103.
2. All solid wastes generated by the project, or removed from the project site, need to be taken to a properly permitted solid waste processing or disposal facility. For more information, visit <http://www.in.gov/idem/4998.htm>.
3. If any contaminated soils are discovered during this project, they may be subject to disposal as hazardous waste. Please contact the OLQ at 317-308-3103 to obtain information on proper disposal procedures.
4. If PCBs are found at this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding management of any PCB wastes from this site.
5. If there are any asbestos disposal issues related to this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding the management of asbestos wastes (Asbestos removal is addressed above, under Air Quality).
6. If the project involves the installation or removal of an underground storage tank, or involves contamination from an underground storage tank, you must contact the IDEM Underground Storage Tank program at 317/308-3039. See: <http://www.in.gov/idem/4999.htm>.

## FINAL REMARKS

Should you need to obtain any environmental permits in association with this proposed project, please be mindful that IC 13-15-8 requires that you notify all adjoining property owners and/or occupants within ten days your submittal of each permit application. However, if you are seeking multiple permits, you can still meet the notification requirement with a single notice if all required permit applications are submitted with the same ten day period.

Should the scope of the proposed project be expanded to the extent that a National Environmental Policy Act Environmental Assessment (EA) or Environmental Impact Statement (EIS) is required, IDEM will actively participate in any early interagency coordination review of the project.

Meanwhile, please note that this letter does not constitute a permit, license, endorsement or any other form of approval on the part of the Indiana Department of Environmental Management regarding any project for which a copy of this letter is used. Also note that it is the responsibility of the project engineer or consultant using this letter to ensure that the most current draft of this document, which is located at <http://www.in.gov/idem/5284.htm>, is used.

Sincerely,



Thomas W. Easterly  
Commissioner

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### Signature(s) of the Applicant

I acknowledge that the following proposed roadway project will be financed in part, or in whole, by public monies.

### Project Description

A new interchange is proposed at 106th Street and I-69 in Fishers, IN, to provide access to the Town of Fishers. On and off ramps will be located on each side of I-69 as well.

With my signature, I do hereby affirm that I have read the letter from the Indiana Department of Environment that appears directly above. In addition, I understand that in order to complete that project in which I am interested, with a minimum of impact to the environment, I must consider all the issues addressed in the aforementioned letter, and further, that I must obtain any required permits.

Date: 8/1/15

Signature of the INDOT  
Project Engineer or Other Responsible Agent



Evan Land

**State of Indiana**  
**DEPARTMENT OF NATURAL RESOURCES**  
**Division of Fish and Wildlife**  
**Early Coordination/Environmental Assessment**

**DNR #:** ER-17771

**Request Received:** August 13, 2014

**Requestor:** Corradino LLC  
Evan Land  
200 South Meridian Street, Suite 330  
Indianapolis, IN 46225-1076

**Project:** 106th Street and I-69 new interchange, Fishers; Des. #1298035

**County/Site info:** Hamilton

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

**Regulatory Assessment:** Formal approval by the Department of Natural Resources under the regulatory programs administered by the Division of Water is not required for this project.

**Natural Heritage Database:** The Natural Heritage Program's data have been checked. To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity.

**Fish & Wildlife Comments:** The tight diamond alternative appears to have the fewest impacts to existing and proposed infrastructure and resources, including the two existing storm water detention basins in the southwest and southeast quadrants. There was no discussion of wetland impacts provided for review at this time. The single point and diverging diamond alternatives would have the largest impacts on existing and proposed infrastructure and resources, and are not recommended.

Due to the presence or potential presence of wetlands on site, we recommend contacting and coordinating with the Indiana Department of Environmental Management (IDEM) 401 program and also the US Army Corps of Engineers (USACE) 404 program. Impacts to wetlands should be mitigated at the appropriate ratio according to the 1991 INDOT/IDNR/USFWS Memorandum of Understanding.

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

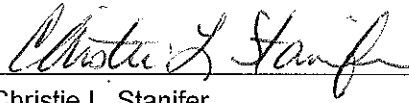
1. Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion.
2. Do not cut any trees suitable for Indiana bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark) from April 1 through September 30.
3. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
4. Seed and protect all disturbed streambanks and slopes that are 3:1 or steeper with erosion control blankets (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

**THIS IS NOT A PERMIT**

**State of Indiana**  
**DEPARTMENT OF NATURAL RESOURCES**  
**Division of Fish and Wildlife**  
**Early Coordination/Environmental Assessment**

**Contact Staff:**

Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife  
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.



**Date:** September 12, 2014

Christie L. Stanifer  
Environ. Coordinator  
Division of Fish and Wildlife

**Questionnaire for the Indiana Department of Transportation,  
Office of Aviation**

**Des/Bridge No:** 1298035

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**Project Description:**

New Interchange at 106<sup>th</sup> Street and I-69,  
Hamilton County, Indiana

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**Requested By:**

CORRADINO

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**Are there any existing or proposed airports within or near the project limits?** YES

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**If yes, describe any potential conflicts with air traffic during or after the construction of the project.**

The Indianapolis Metropolitan Airport is located 7,300' southwest of the

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project. If any permanent structures or equipment utilized for

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the project penetrates the 100:1 slope from the airport FAA

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Form 7460 (Notice of Proposed construction or alteration) must

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be filed. For assistance contact Marcus Dial, INDOT Office of Aviation, 317-232-1494.

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**This information was furnished by:**

**Name:** James W. Kinder

**Title:** Chief Airport Inspector – INDOT Office of Aviation

**Date:** August 18, 2014

August 19, 2014

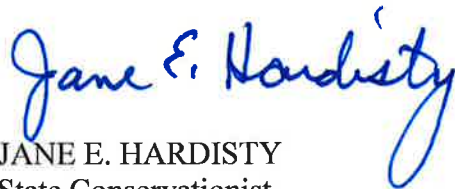
Evan Land  
Corradino LLC  
200 South Meridian Street, Suite 330  
Indianapolis, Indiana 46225

Dear Mr. Land:

The proposed project to construct a new interchange at 106<sup>th</sup> Street and I-69 in Hamilton County, Indiana, as referred to in your letter received August 15, 2014, will not cause a conversion of prime farmland.

If you need additional information, please contact Rick Neilson at 317-295-5875.

Sincerely,



JANE E. HARDISTY  
State Conservationist

Enclosure



# FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

<b>PART I (To be completed by Federal Agency)</b>		3. Date of Land Evaluation Request <b>8/13/14</b>	4. Sheet 1 of <b>1</b>
1. Name of Project <b>106th Street Interchange at I-69</b>		5. Federal Agency Involved <b>INDOT/FHWA</b>	
2. Type of Project <b>New Interchange</b>		6. County and State <b>Hamilton, IN</b>	
<b>PART II (To be completed by NRCS)</b>		1. Date Request Received by NRCS <b>8-15-14</b>	2. Person Completing Form <b>Lisa Bo 10m</b>
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form.) YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		4. Acres Irrigated   Average Farm Size	
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %	
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS <b>8-19-14</b>	

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	0			
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0			
C. Total Acres In Corridor	0	0	0	0

<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value				

<b>PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)</b>				
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PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points				
1. Area in Nonurban Use	15	0	0	0	0
2. Perimeter in Nonurban Use	10	0	0	0	0
3. Percent Of Corridor Being Farmed	20	0	0	0	0
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Size of Present Farm Unit Compared To Average	10	0	0	0	0
6. Creation Of Nonfarmable Farmland	25	0	0	0	0
7. Availability Of Farm Support Services	5	0	0	0	0
8. On-Farm Investments	20	0	0	0	0
9. Effects Of Conversion On Farm Support Services	25	0	0	0	0
10. Compatibility With Existing Agricultural Use	10	0	0	0	0
<b>TOTAL CORRIDOR ASSESSMENT POINTS</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

<b>PART VII (To be completed by Federal Agency)</b>					
Relative Value Of Farmland (From Part V)	100				
Total Corridor Assessment (From Part VI above or a local site assessment)	160	0	0	0	0
<b>TOTAL POINTS (Total of above 2 lines)</b>	<b>260</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

1. Corridor Selected: <b>Corridor 3 - Roundabout</b>	2. Total Acres of Farmlands to be Converted by Project: <b>0.0</b>	3. Date Of Selection: <b>7/1/14</b>	4. Was A Local Site Assessment Used? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
---	---	--	---

5. Reason For Selection:  
**The roundabout option is the preferred alternative due to its low cost, high capacity, and minimal right-of-way impact. It is also preferred by the Town of Fishers.**

Signature of Person Completing this Part: <b>Evan Land</b>	DATE <b>8/13/14</b>
---	------------------------

NOTE: Complete a form for each segment with more than one Alternate Corridor

**Evan Land**

---

**From:** McWilliams, Robin <robin\_mcwilliams@fws.gov>  
**Sent:** Tuesday, August 19, 2014 1:40 PM  
**To:** Evan Land  
**Subject:** Des. 1298035; New Interchange at 106th St. and I-69; Hamilton Co.

Dear Mr. Land,

This responds to your recent letter, requesting our comments on the aforementioned project.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

Based on a review of the information you provided, the U.S. Fish and Wildlife Service has no objections to the project as currently proposed. This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. However, should new information arise pertaining to project plans or a revised species list be published, it will be necessary for the Federal agency to reinitiate consultation.

Wetland and stream impacts may require permits from the US Army Corps of Engineers, the Indiana Department of Environmental Management's Water Quality Certification program and the Indiana Department of Natural Resources. Wetland impacts should be avoided, and any unavoidable impacts should be compensated for in accordance with the Corps of Engineers mitigation guidelines.

We appreciate the opportunity to comment at this early stage of project planning. If project plans change such that fish and wildlife habitat may be affected, please recoordinate with our office as soon as possible. If you have any questions about our recommendations, please call (812)334-4261.

Sincerely,

Robin McWilliams Munson

Robin McWilliams Munson

U.S. Fish and Wildlife Service  
620 South Walker Street

Bloomington, Indiana 46403  
812-334-4261 Fax: 812-334-4273

Monday, Tuesday - 7:30a-3:00p  
Wednesday, Thursday - telework 8:30a-3:00p



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

100 N. Senate Avenue • Indianapolis, IN 46204  
(800) 451-6027 • (317) 232-8603 • [www.idem.IN.gov](http://www.idem.IN.gov)

Michael R. Pence  
Governor

Thomas W. Easterly  
Commissioner

8/22/2014

66-33  
Mr. Evan Land  
The Corradine Group  
200 S. Meridian Street, Suite 330  
Indianapolis, IN 46225

RE: Wellhead Protection Area Proximity  
Determination for  
Intersection of 106<sup>th</sup> St. & I-69

Dear Mr. Land:

Upon review of the above referenced site, it has been determined that the site **is not located** within a Wellhead Protection Area.

This information is accurate to the best of our knowledge. However, there are in some cases, a few factors that could impact the accuracy of this determination. For example, some Wellhead Protection Area Delineations have not been submitted or many have not been approved by this office. In these cases, we use a 3,000 foot fixed radius buffer to make the proximity determination. To find the status of a Public Water Supply System's Wellhead Protection Area Delineation, please visit our tracking database at <http://www.in.gov/idem/4289.htm>.

Note, the Drinking Water Branch has launched a new self service feature which allows one to determine a wellhead proximity without submitting the application form. Use the following instructions: 1) Go to <http://idemmaps.idem.in.gov/whpa/>; 2) Using the icon/tools in the upper right hand corner of the application, zoom to your site location or address, and 3) once you have located your site of interest click on the "I" icon, and then using your mouse click on your location... The site wellhead protection area proximity determination will be displayed below the icon tools in the upper right hand corner of tool. In the future, please consider using this self service feature if it is suitable for your needs.

If you have any additional questions, please feel free to contact me at the address above or at (317) 234-7476.

Sincerely,

James Sullivan, Chief  
Ground Water Section  
Drinking Water Branch  
Office of Water Quality

JS:ar



D-19  
A State that Works

## **Evan Land**

---

**From:** Vahl, Steve <steve.vahl@hud.gov>  
**Sent:** Tuesday, September 02, 2014 3:59 PM  
**To:** Evan Land  
**Subject:** Des. No. 1298035

Interchange at 106<sup>th</sup> St and I-69  
Fishers, Hamilton Co., IN

This office has no environmental concern or comment regarding the subject activity.

Steve Vahl  
Dept. of Housing and Urban Development  
Region 5 Environmental Officer  
77 West Jackson Blvd, Room 2420  
Chicago, IL 60604  
(312) 913-8728

Project No. \_\_\_\_\_ DES No. 1298035

Project Description new interchange at 106<sup>th</sup> Street and I-69

Hamilton County

Name of Organization requesting early coordination:

Corradino for INDOT

**QUESTIONNAIRE FOR THE INDIANA GEOLOGICAL SURVEY**

- 1) Do unusual and/or problem ( ) geographic, ( ) geological, ( ) geophysical, or ( ) topographic features exist within the project limits? Describe:

NO

- 2) Have existing or potential mineral resources been identified in this area? Describe:

NO

- 3) Are there any active or abandoned mineral resources extraction sites located nearby? Describe: NO

This information was furnished by:

*M. Karaffa*

Marni D. Karaffa , Research Geologist  
611 N Walnut Grove, Bloomington, IN 47405  
(812) 855-7428 / (812) 855-2862  
[karaffam@indiana.edu](mailto:karaffam@indiana.edu)

Monday, October 20, 2014

**United States Department of the Interior  
National Park Service  
Land & Water Conservation Fund**

**Detailed Listing of Grants Grouped by County**

Today's Date: 6/23/2015

Page: 11

**INDIANA - 18**

Grant ID & Element	Type	Grant Element Title	Grant Sponsor	Amount	Status	Date Approved	Exp. Date	Cong. District
HAMILTON								
17 - XXX	D	FOREST PARK DEVELOPMENT	NOBLESVILLE PARK BOARD	\$8,383.88	C	12/17/1969	12/31/1969	6
58 - XXX	A	FOREST PARK ADDITION	NOBLESVILLE PARK BOARD	\$45,744.50	C	5/8/1969	12/31/1970	6
128 - XXX	C	MORSE PARK	HAMILTON COUNTY PARK BOARD	\$142,332.00	C	12/6/1972	6/30/1975	6
198 - XXX	D	TRI-TOWN COMMUNITY PARK	CICERO PARK BOARD	\$34,242.81	C	5/6/1975	12/31/1977	6
236 - XXX	D	FOREST PARK POOL	HAMILTON COUNTY PARK BOARD	\$125,000.00	C	2/3/1976	6/30/1978	6
493 - XXX	C	FLOWING WELL PARK	CARMEL/CLAY TWP PARK BOARD	\$75,000.00	C	4/23/1993	6/30/1998	6
502 - XXX	D	COOL CREEK PARK NATURE CENTER	HAMILTON COUNTY PARK BOARD	\$75,000.00	C	5/20/1994	6/30/1999	6
519 - XXX	C	KOTEEWI PARK ACQUISITION & DEVELOPMENT	HAMILTON COUNTY PARK BOARD	\$200,000.00	C	9/6/2000	12/31/2005	5
551 - XXX	C	D/MACGREGOR PARK	WASHINGTON TOWNSHIP PARK BOARD	\$200,000.00	C	3/9/2005	12/31/2007	0
Hamilton County Total:				\$905,703.19	County Count:		9	
HANCOCK								
350 - XXX	D	RILEY PARK AND POOL RENOVATION	GREENFIELD PARK BOARD	\$220,000.00	C	1/30/1979	12/31/1983	6
552 - XXX	C	BECKENHOLDT PARK	GREENFIELD PARK BOARD	\$200,000.00	C	4/19/2005	12/31/2009	5
561 - XXX	C	SUGAR CREEK TOWNSHIP PARK	SUGAR CREEK PARK BOARD	\$200,000.00	C	9/7/2006	12/31/2009	5
575 - XXX	D	BECKENHOLDT PARK PHASE II	GREENFIELD PARK & RECREATION BOARD	\$156,466.00	C	4/15/2011	12/31/2015	0
Hancock County Total:				\$776,466.00	County Count:		4	

# **Appendix E**

## Red Flag Survey



# INDIANA DEPARTMENT OF TRANSPORTATION

*Driving Indiana's Economic Growth*

100 North Senate Avenue  
Room N642  
Indianapolis, Indiana 46204-2216 (317) 232-5348 FAX: (317) 233-4929

Date: September 19, 2013

To: Hazardous Materials Unit  
Environmental Services  
Indiana Department of Transportation  
100 N Senate Avenue, Room N642  
Indianapolis, IN 46204

From: Kirk Roth  
Corradino, LLC  
200 S. Meridian Street  
Indianapolis, IN 46225  
[kroth@corradino.com](mailto:kroth@corradino.com)

Re: RED FLAG INVESTIGATION  
DES #1298035  
New Interchange Project I-69 and 106<sup>th</sup> Street  
Fishers, Hamilton County, Indiana

## NARRATIVE

This project is being developed by the Indiana Department of Transportation (INDOT), Central Office, in coordination with the Town of Fishers Department of Engineering and Public Works and the Hamilton County Highway Department. The project is federally funded. New right-of-way is required. All existing right-of-way will be verified during the land acquisition process, which may reveal the need for additional parcels. Several interchange alternatives are under consideration: a tight diamond, a single-point, and teardrop roundabouts linking ramp ends. A traffic analysis will determine the preferred alternative. The teardrop alternative is used herein for illustrative purposes. Other alternatives would have similar footprints and impacts.

## SUMMARY

<b>Infrastructure</b> Indicate the number of items of concern found within ½ mile, including an explanation why each item within the ½ mile radius will/will not impact the project. If there are no items, please indicate N/A:			
Religious Facilities	<b>1</b>	Recreational Facilities	<b>1</b>
Airports	<b>N/A</b>	Pipelines	<b>1</b>
Cemeteries	<b>N/A</b>	Railroads	<b>1</b>
Hospitals	<b>N/A</b>	Trails	<b>6</b>
Schools	<b>1</b>	Managed Lands	<b>1</b>

### Explanation:

Note that all distances below are referenced to the intersecting centerlines of I-69 and 106<sup>th</sup> Street.

Cheaney Creek Natural Area is located approximately 1500 feet northwest of the reference point and extends northeast from there. The address is 11030 Fishers Pointe Boulevard. Due to the limited nature of construction and the project right-of-way, no impacts are anticipated to the Natural Area. A portion of the stormwater from the interchange area flows to Cheaney Creek today and would continue to, but two detention ponds are planned as part of the project to reduce peak flows.

Four existing trails and two planned trails are within a half-mile. None will be impacted by the project. The Cheaney Creek Natural Area Trail is a natural trail approximately 2,000 feet northwest of the reference point. . An asphalt trail connects Cheaney Creek Natural Area to 106<sup>th</sup> Street approximately 1,000 feet to the west of the reference point. Another asphalt trail extends 1,500 feet east of the reference point along the south side of 106<sup>th</sup> Street connecting Lantern Road and Muir Lane. There is an asphalt trail 1,500 feet to the east of the reference point running from 106<sup>th</sup> Street to the south. A planned asphalt trail along the south side of 106<sup>th</sup> Street will connect Hague Road and Lantern Road west of the project. Finally, a second planned asphalt trail will connect Cheaney Creek and Lantern Road along the north side of 106<sup>th</sup> street. Coordination with the Town of Fishers will be required and adjustments to the trail layout may be necessary. Although it is not listed as a named recreational facility, there is a baseball diamond in the northeast quadrant, approximately 1580 feet northwest of the reference point. This is a privately owned property and is not open for public use. The minimal strip of right-of-way that will likely be acquired from this parcel along I-69 will not impact the ball diamond.

The Eastern Star Church building is approximately 2300 feet east of the reference point, at 8850 E. 106<sup>th</sup> Street. The project may improve access to the church. The limited nature of the road construction is not expected to impact this infrastructure.

A refined products pipeline is approximately 3,200 feet north of the reference point. It is owned by the Buckeye Pipeline Company. The limited nature of the road construction is not expected to impact this infrastructure.

The Hoosier Heritage Port Authority Railroad, an active railroad, crosses 106<sup>th</sup> Street approximately 2200 feet west of the reference point. The limited nature of the road construction is not expected to impact this infrastructure.

Lantern Road Elementary School is in the southeast quadrant of the USA Parkway roundabout. The limited nature of the road construction is not expected to impact the school since it is located one mile from the project location; however, coordination with the School will be necessary during construction.

<b>Water Resources</b>			
Indicate the number of items of concern found within ½ mile, including an explanation why each item within the ½ mile radius will/will not impact the project. If there are no items, please indicate N/A:			
NWI - Points	<b>N/A</b>	NWI - Wetlands	<b>0 (3 new)*</b>
Karst Springs	<b>N/A</b>	IDEM 303d Listed Lakes	<b>N/A</b>
Canal Structures – Historic	<b>N/A</b>	Lakes	<b>8</b>
NWI - Lines	<b>1</b>	Floodplain - DFIRM	<b>1</b>
IDEM 303d Listed Rivers and Streams (Impaired)	<b>N/A</b>	Cave Entrance Density	<b>N/A</b>
Rivers and Streams	<b>1</b>	Sinkhole Areas	<b>N/A</b>
Canal Routes - Historic	<b>N/A</b>	Sinking-Stream Basins	<b>N/A</b>

**Explanation:**

Cheaney Creek is located approximately 1,650 feet to the northwest of the project. Cheaney Creek is also a wetland line, but no impact is expected. Cheaney Creek runs to the southwest for a short while and then eventually to the west. There is a floodplain associated with Cheaney Creek. No impact to Cheaney Creek or the associated floodplain is expected.

No National Wetland Inventory wetlands are present, but there are two ponds in the immediate area of the interchange, just outside the right-of-way. The larger pond is in the southeast quadrant and the smaller pond is in the southwest quadrant. Both are Palustrine, Unconsolidated Bottom with mud substrate (PUB3). A mix of vegetation characteristic of both wetland and upland areas are present at the shoreline areas. \*Three other emergent wetlands have been delineated through field review. Mitigation of impacted wetlands will be determined during the design process.

There are six more ponds within a half-mile of the project area: two 2,500 feet to the southeast, two 2,600 feet to the south, one 2,800 feet to the east, and one 1,980 feet to the northeast. All are PUB3 waterways. Sixteen other small standing bodies of water exist at distances between a half-mile and a mile.

<b>Mining/Mineral Exploration</b>			
Indicate the number of items of concern found within ½ mile, including an explanation why each item within the ½ mile radius will/will not impact the project. If there are no items, please indicate N/A:			
Petroleum Wells	<b>N/A</b>	Petroleum Fields	<b>1</b>
Mines – Surface	<b>N/A</b>	Mines – Underground	<b>N/A</b>

**Explanation:**

Petroleum Field: One (1) petroleum field is located within the 0.5 mile search radius. The no longer active Trenton Oil Field covers the entire 0.5 mile search radius from sections C through E. When this field was active, abandoned wells were not usually plugged. Within plugged wells, occasionally oil and brine would migrate upward and surface past the often ineffective plugs. It is possible these contaminants could make their way to the streams and rivers. Minimal right of way is required for this project from previously disturbed/developed ground along I-69 and 106<sup>th</sup> Street. No impact is expected; however, workers should be made aware of the presence of the inactive oil field.

<b>Hazmat Concerns</b>			
Indicate the number of items of concern found within ½ mile, including an explanation why each item within the ½ mile radius will/will not impact the project. If there are no items, please indicate N/A:			
Brownfield Sites	N/A	Restricted Waste Sites	N/A
Corrective Action Sites (RCRA)	N/A	Septage Waste Sites	N/A
Confined Feeding Operations	N/A	Solid Waste Landfills	N/A
Construction Demolition Waste	N/A	State Cleanup Sites	N/A
Industrial Waste Sites (RCRA Generators)	N/A	Tire Waste Sites	N/A
Infectious/Medical Waste Sites	N/A	Waste Transfer Stations	N/A
Lagoon/Surface Impoundments	N/A	RCRA Waste Treatment, Storage, and Disposal Sites (TSDs)	N/A
Leaking Underground Storage Tanks (LUSTs)	N/A	Underground Storage Tanks	N/A
Manufactured Gas Plant Sites	N/A	Voluntary Remediation Program	N/A
NPDES Facilities	N/A	Superfund	N/A
NPDES Pipe Locations	N/A	Institutional Control Sites	N/A
Open Dump Sites	N/A		

**Explanation:**

According to Indiana GIS data, there are no HAZMAT issues within a half mile radius of the project site. There are some sites within or just over a mile's distance.

**Ecological Information**

The Indiana Natural Heritage Data Center has been checked and there are no ETR species and significant areas documented within 0.5 mile of the project area.

**Cultural Resources**

There are currently no properties listed in the National Register of Historic Places (NRHP) within the Area of Potential Effects (APE) of this project. Two properties formerly listed in the Hamilton County Interim Report are near the project area; however, one is no longer extant. The other property, the Flanagan House (Site No. 057-206-50019), is recommended as eligible for listing in the NRHP in the Historic Properties Report (HPR), dated August 1, 2013 and submitted to INDOT on August 15, 2013. The Flanagan House, and in particular its potential eligibility under Criterion C, was discussed in a July 25, 2013 conference call attended by INDOT Cultural Resources, Indiana Department of Natural Resources – Division of Historic Preservation and Archeology (IDNR-DHPA), and the consultant team. It is not yet known if a strip of right-of-way will be required from the Flanagan House parcel. It is anticipated that the project will not affect the actual Flanagan House structure.

Archeological records check states that there is no potential for eligible below ground resources.

## RECOMMENDATIONS

Include recommendations from each section. If there are no recommendations, please indicate N/A:

**INFRASTRUCTURE:** No negative impacts to infrastructure are expected, but coordination with the Town of Fishers, regarding their pedestrian and trail plan, and the Fishers School Corporation, regarding maintenance of traffic during construction, will be necessary.

**WATER RESOURCES:** Project design should consider the two ponds in the immediate area and the three delineated emergent wetlands. Mitigation of impacted wetlands will be determined during the design process.

**MINING/MINERAL EXPLORATION:** No mineral activities are within the project area. No further study required.

**HAZMAT CONCERNS:** N/A

**ECOLOGICAL INFORMATION:** Commence early coordination with DNR due to additional ROW requirements.

**CULTURAL RESOURCES:** Continue coordination with IDNR-DHPA and other consulting parties to determine if the Flanagan House is eligible for listing in the NRHP and if so, determine the effects of the undertaking. Complete the Section 106 and Section 4(f) procedures, as required.

INDOT Environmental Services concurrence:

Marlene Mathas

Digitally signed by Marlene Mathas  
DN: cn=Marlene Mathas, o=INDOT Environmental  
Services, ou=Hazardous Materials,  
email=mmathas@indot.in.gov, c=US  
Date: 2013.10.02 15:21:52 -0400

(Signature)

Prepared by:

Kirk Roth  
Environmental Scientist  
Corradino, LLC

## Graphics:

A map for each report section with a ½ mile radius buffer around all project area(s) showing all items identified as possible items of concern is attached. If there is not a section map included, please change the YES to N/A:

**GENERAL SITE MAP SHOWING PROJECT AREA (AERIAL MAP):** YES

**INFRASTRUCTURE:** YES

**WATER RESOURCES:** YES


**MINING/MINERAL EXPLORATION:** YES

**HAZMAT CONCERNS:** YES

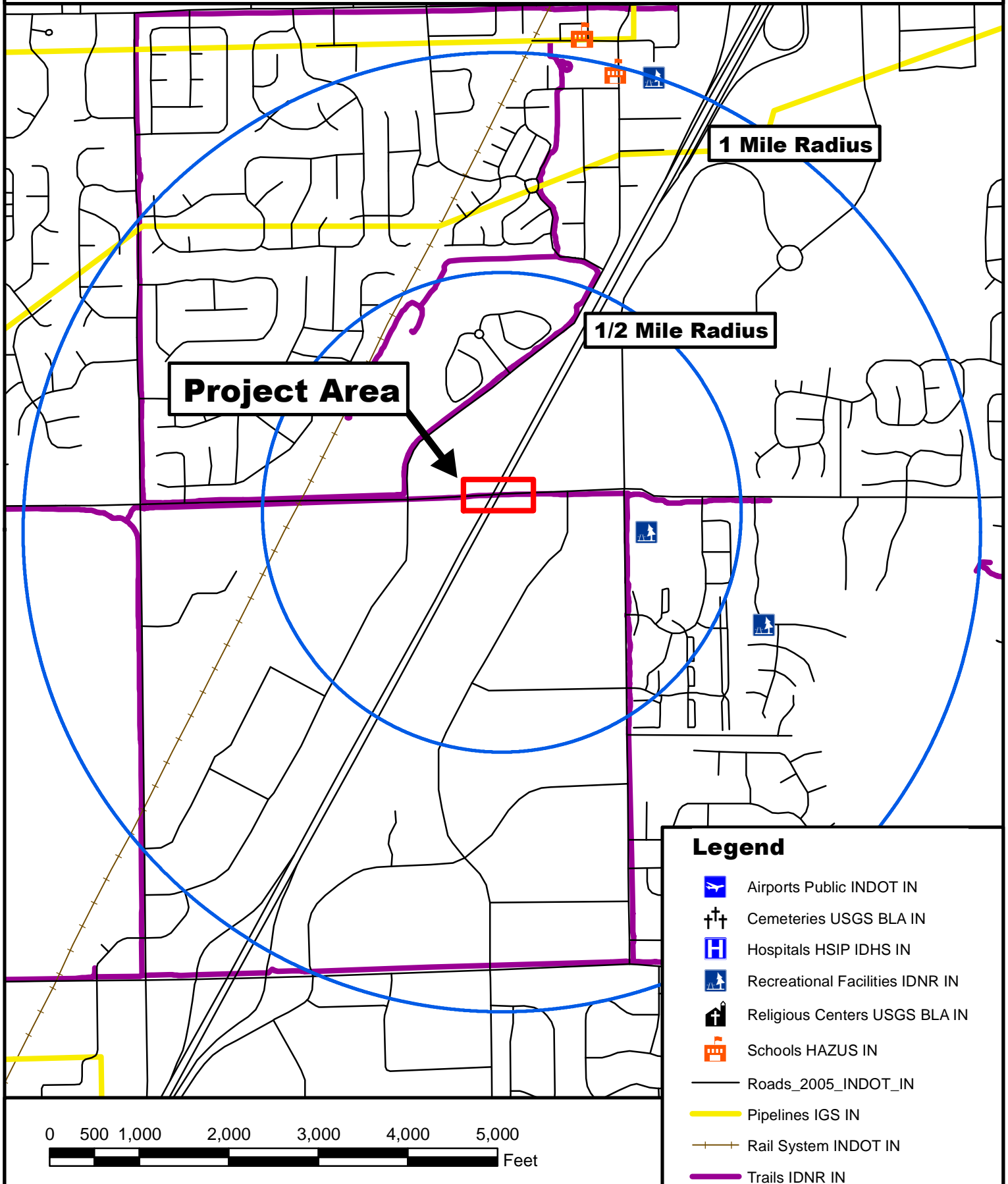
# A 2009 aerial photograph showing the project location.



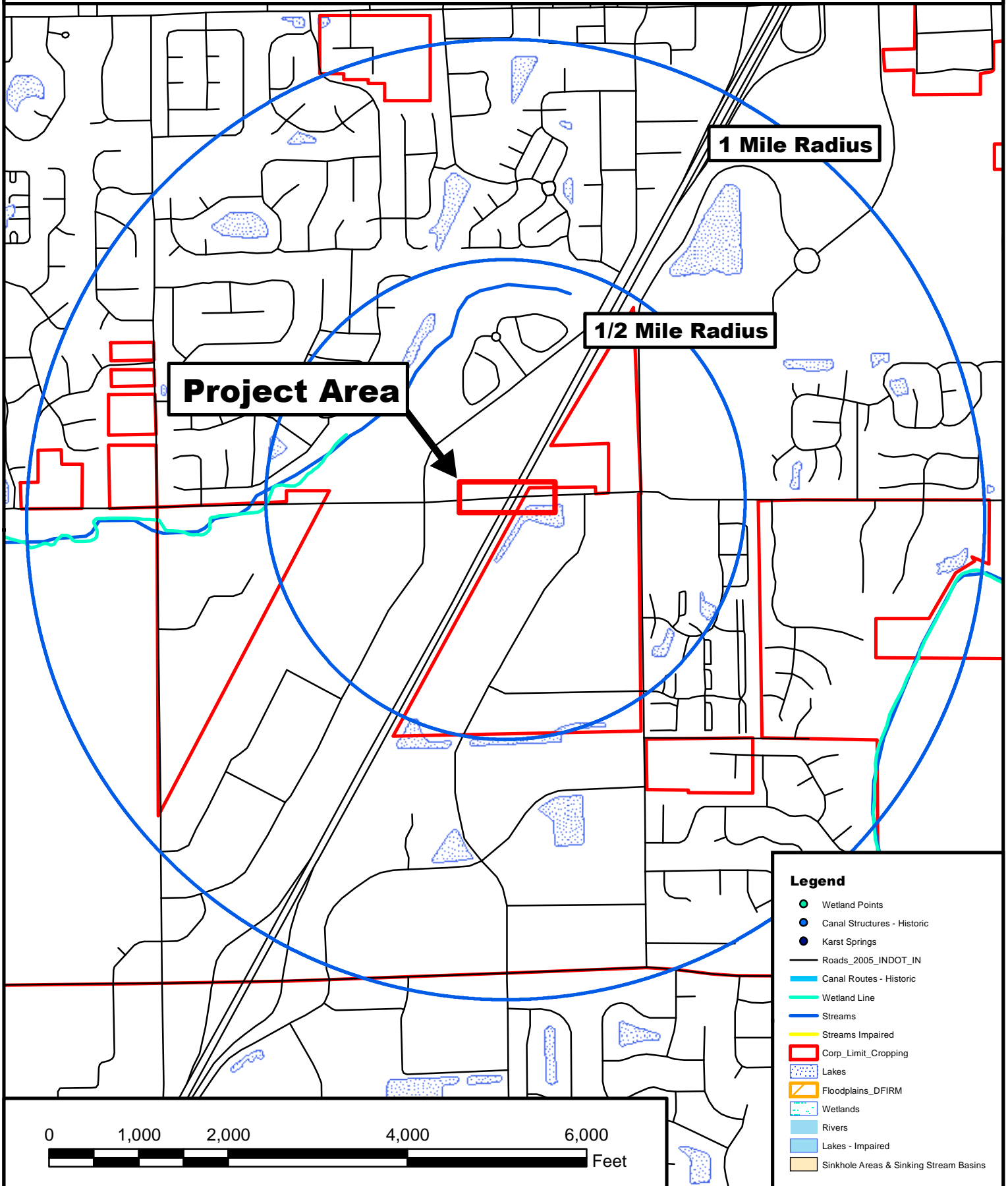
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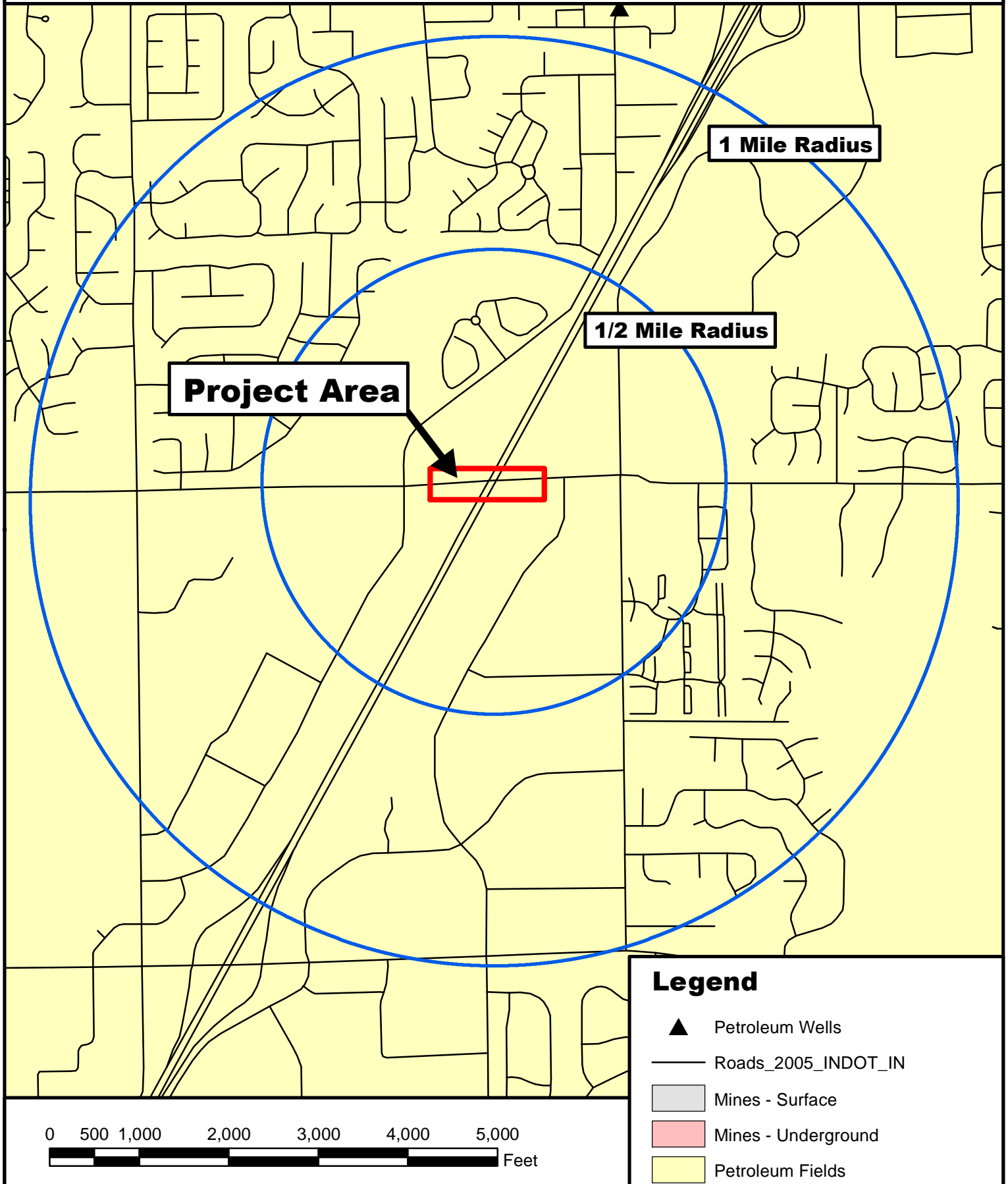
# INFRASTRUCTURE



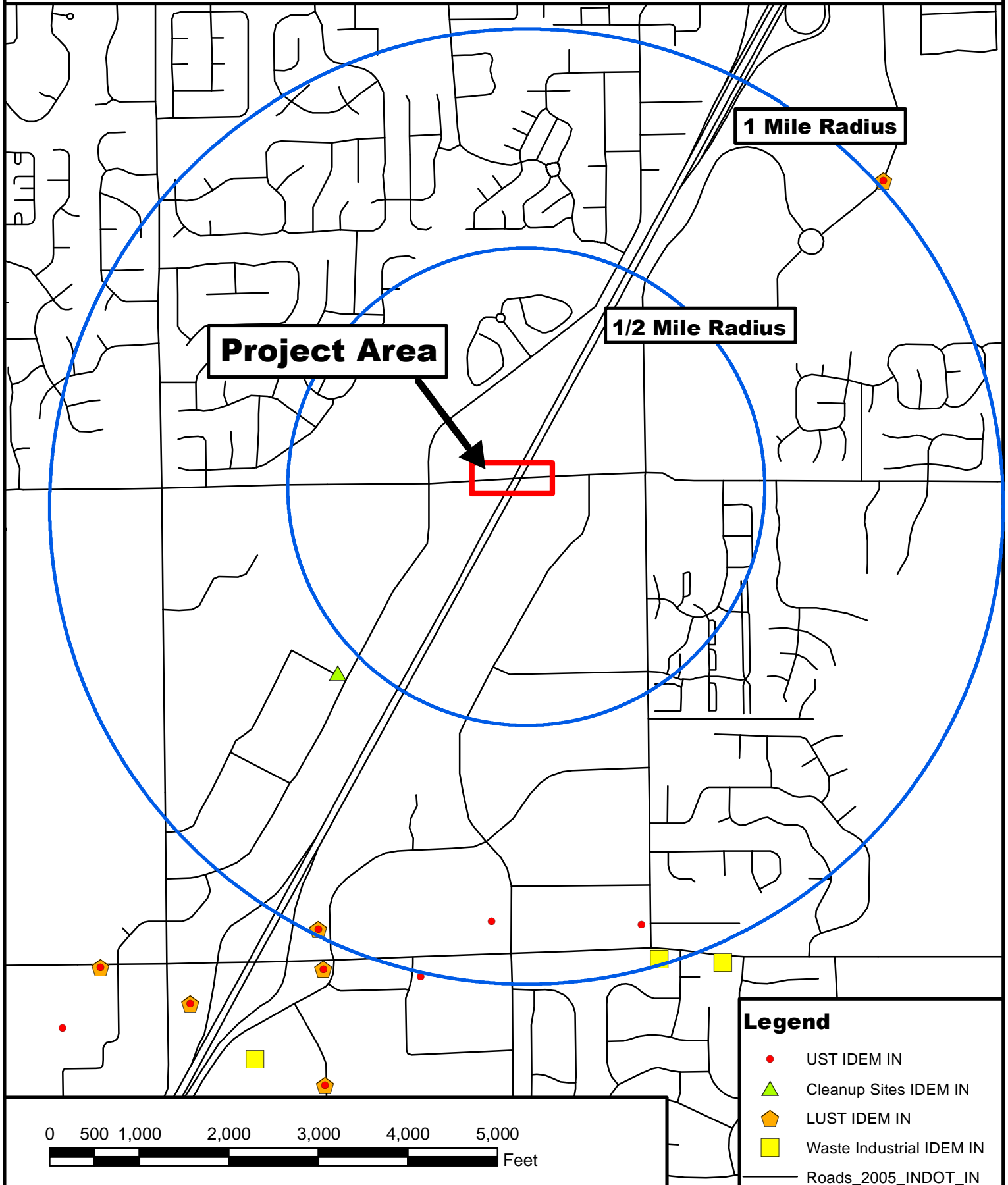
# Water Resources



# Mining/Mineral Exploration



# HAZMAT



# **Appendix F**

## **Section 106 Documentation**

# **Appendix F1**

SHPO Comment Letter for 800.11 (d)  
Documentation

# DNR

## Indiana Department of Natural Resources

Michael R. Pence, Governor  
Cameron F. Clark, Director

Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 • Indianapolis, IN 46204-2739  
Phone 317-232-1646 • Fax 317-232-0693 • [dhpa@dnr.IN.gov](mailto:dhpa@dnr.IN.gov)



May 11, 2015

Patrick Carpenter  
Manager, Cultural Resources Office  
Environmental Services  
Indiana Department of Transportation  
100 North Senate Avenue, Room N642  
Indianapolis, Indiana 46204

Federal Agency: Indiana Department of Transportation ("INDOT")  
on behalf of Federal Highway Administration ("FHWA")

Re: INDOT's finding, with supporting documentation, of "No Historic Properties Affected" or the I-69 and East 106<sup>th</sup> Street Interchange Project, Fishers, Delaware Township, Hamilton County, Indiana (Des. No. 1298035; DHPA No. 15147)

Dear Mr. Carpenter:

Pursuant to Section 106 of the National Historic Preservation Act (recently recodified at 54 U.S.C. § 306108), 36 C.F.R. Part 800, and the "Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation and the Indiana State Historic Preservation Officer Regarding the Implementation of the Federal Aid Highway Program In the State of Indiana," the staff of the Indiana State Historic Preservation Officer has reviewed the documents enclosed with Corradino's review request submittal dated April 29, 2015, and received on April 30, for the aforementioned project in Hamilton County, Indiana.

As you know, the Flanagan House (or Flanagan-Kincaid House; Indiana Historic Sites and Structures Inventory No. 057-206-50019) was the only property within the area of potential effects of this project that was eligible for inclusion in the National Register of Historic Places. To prevent the house's demolition by a new, private owner, other private parties acquired the house and on October 5, 2014, moved it from its historical location on the south side of 106<sup>th</sup> Street approximately one-half mile to the north, where it now faces I-65. As Paul Diebold of my staff wrote in his October 22, 2014, letter to INDOT:

The house now faces and addresses a major man-made structure that has no relationship to its history. From a preservation point of view, we believe that this so compromises integrity of setting, location and feeling as to render the building ineligible for listing on the National Register of Historic Places.

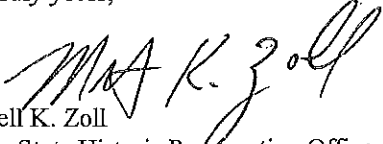
Accordingly, we concur with INDOT's April 10, 2015, finding, on behalf of FHWA, of "No Historic Properties Affected" for the I-69 and East 106<sup>th</sup> Street Interchange Project in Hamilton County.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and -29) requires that the discovery be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and -29 does not obviate the need to adhere to applicable federal statutes and regulations.

If you have questions regarding about buildings or structures, please contact John Carr at (317) 233-1949 or [jcarr@dnr.IN.gov](mailto:jcarr@dnr.IN.gov). Questions about archaeological matters should be addressed to Wade T. Tharp at (317) 2321650.

If there should happen to be a need for future correspondence about the I-69 and East 106th Street Interchange Project in Hamilton County, please continue to refer to DHPA No. 15147.

Very truly yours,



Mitchell K. Zoll  
Deputy State Historic Preservation Officer

MKZ:JLC:jlc

cc: David Cleveland, Corradino LLC

emc: Lawrence Heil, Federal Highway Administration, Indiana Division  
Patrick Carpenter, Indiana Department of Transportation  
Shaun Miller, Indiana Department of Transportation  
Mary Kennedy, Indiana Department of Transportation  
Shirley Clark, Indiana Department of Transportation  
David Cleveland, Corradino LLC, PE, PTOE  
Candace Hudziak, H&H Associates, LLC  
Linda Weintraut, Ph.D., Weintraut & Associates, Inc.

# **Appendix F2**

Indianapolis Star Affidavit

# PUBLISHER'S AFFIDAVIT

STATE OF INDIANA,  
County Of Marion

} SS:

Fee, \$480.43

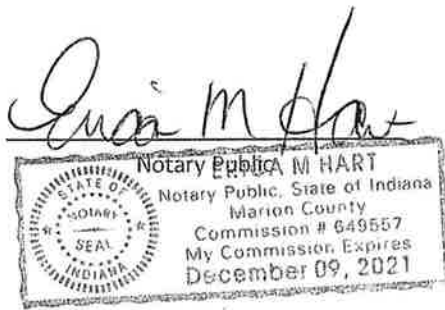
Personally appeared before me, a notary public in and for said county and state, the undersigned

I, being duly sworn, say that I am a clerk for THE INDIANAPOLIS NEWSPAPERS a DAILY STAR newspaper of general circulation printed and published in the English language in the city of INDIANAPOLIS in state and county aforesaid, and that the printed matter attached hereto is a true copy, which was duly published in said paper for 1 times., the dates of publication being as follows:

The insertion being on the

05/02/2015

Subscribed and sworn to before me this 4 day of May, 2015



### Public Notice

The Indiana Department of Transportation (INDOT), in partnership with the city of Fishers and Hamilton County, propose to utilize federal funding to construct a new interchange along I-69 at East 106th Street in the city of Fishers, Delaware Township, Hamilton County, Indiana. The project area can be found on the Fishers, Indiana USGS Topographic Quadrangle map in T17N, R5E, Sections 6 and 7, and in T17N, R4E, Sections 1 and 12.

The project limits are Crosspoint Boulevard/Lantern Road and 106th Street intersection east approximately 2,400 feet (0.45 mile) to the USA Parkway/Lantern Road and 106th Street roundabout, with a minimum coverage width of 200 feet included on both sides of 106th Street; both northbound and southbound lanes of I-69 extending approximately 2,700 feet north and south of 106th Street, a total length of 5,400 feet (1.02 miles), with a coverage width of the existing right of way fence to a minimum of 125 feet beyond this right of way; Kincaid Drive extending approximately 300 feet north and south of 106th Street (0.06 mile), with a minimum coverage width of 75 feet left and right of the centerline of Kincaid Drive. The project is designed to relieve congestion and to provide pedestrian connectivity in this heavily developed suburban area of southeastern Hamilton County.

An Area of Potential Effect (APE) for above-ground resources encompasses adjacent properties on all sides of the undertaking and/or with a viewshed of it. The APE limits are approximately 2,930 feet north and 3,120 feet south of the center point of 106th Street over I-69, and approximately 1,950 feet west and 2,720 feet east of the center point of 106th Street over I-69. The archaeological APE has been defined as the project footprint.

INDOT, acting on the Federal Highway Administration's (FHWA's) behalf, has determined a "No Historic Properties Affected" finding is appropriate for this undertaking because no properties listed on or eligible for listing on the National Register of Historic Places (NRHP) are present within the APE.

In accordance with the National Historic Preservation Act, the views of the public are being sought regarding the effect of the proposed project on the historic elements as per 36 CFR 800.2(d), 800.3(e) and 800.6(a)(4). Pursuant to 36 CFR 800.6(a)(4), the documentation specified in 36 CFR 800.11(d) is available for inspection from Corradino LLC at the contact listed below. This documentation serves as the basis for the FHWA's "No Historic Properties Affected" finding. The views of the public on this finding are being sought. Please reply to the contact listed below no later than May 31, 2015.

David Cleveland  
Corradino LLC  
200 South Meridian Street  
Suite 330  
Indianapolis, IN 46225  
dcleveland@corradino.com

(S - 5/2/15 - 0000435404)

(Governmental Unit)

To: Indianapolis Star

County, Indiana

Indianapolis, IN

### PUBLISHER'S CLAIM

#### COMPUTATION OF CHARGES

Acct #:INI-12843

Ad #: 0000435404

50 lines, 1 columns wide equals 50 equivalent

\$467.93

lines at \$9.36 per line @ 1 days,

Website Publication

\$0

Charge for proof(s) of publication

\$12.50

TOTAL AMOUNT OF CLAIM

\$480.43

#### DATA FOR COMPUTING COST

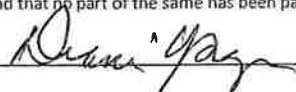
Width of single column 9.5 ems

Number of insertions 1

Size of type 7 point

Pursuant to the provisions and penalties of Ch. 155, Acts 1953,

I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all just credits, and that no part of the same has been paid.



Date: 8-4 2015 Title: Clerk

Claim No. \_\_\_\_\_ Warrant No. \_\_\_\_\_

IN FAVOR OF

**The Indianapolis Star**

Indianapolis, IN

Marion County

130 S. Meridian St. Indianapolis, IN 46225

\$ \_\_\_\_\_

On Account of Appropriation For

FED. ID

#13-2599556

Allowed \_\_\_\_\_, 20\_\_\_\_

In the sum of \$ \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I certify that the within claim is true and correct; that the  
services there-in itemized and for which charge is made were  
ordered by me and were necessary to the public business.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_, 20\_\_\_\_

I have examined the within claim and hereby

certify

as follows:

That it is in proper form.

This it is duly authenticated as required by law.

That it is based upon statutory authority.

That it is apparently (correct)

~~(incorrect)~~

# **Appendix F3**

Signed Finding and 800.11(d) Documentation

**FEDERAL HIGHWAY ADMINISTRATION'S  
SECTION 4(F) COMPLIANCE REQUIREMENTS (for historic properties) AND  
SECTION 106 FINDINGS AND DETERMINATIONS  
AREA OF POTENTIAL EFFECTS  
ELIGIBILITY DETERMINATIONS EFFECT FINDING  
I-69 AND EAST 106th STREET INTERCHANGE PROJECT  
FISHERS, DELAWARE TOWNSHIP, HAMILTON COUNTY, INDIANA  
DES NO. 1298035  
FEDERAL DES NO: PENDING**

**AREA OF POTENTIAL EFFECTS**

**(Pursuant to 36 CFR 800.4(a)(1))**

The Area of Potential Effects (APE) is the area in which an undertaking may cause direct or indirect changes in the character or use of an historic property. The APE was drawn to encompass properties in which the undertaking may cause visual and audible intrusions, changes in traffic patterns and alterations in land use or public access. The APE was developed in regard to the scope of the project, which consists of the construction of a new interchange at I-69 and East 106th Street. The APE extends approximately 2930 feet north and 3120 feet south of the center point of East 106th Street over I-69, and approximately 1950 feet west and 2720 feet east of the center point of East 106th Street over I-69. Please see Appendix B for a map of the APE.

**ELIGIBILITY DETERMINATIONS**

**(Pursuant to 36 CFR 800.4(c)(2))**

There are no historic properties listed on or eligible for listing in the National Register of Historic Places present within the APE.

**EFFECT FINDING**

The Indiana Department of Transportation (INDOT), acting on the Federal Highway Administration's (FHWA) behalf, has determined a "No Historic Properties Affected" finding is appropriate for this undertaking because no properties listed on or eligible for listing on the NRHP are present within the APE. INDOT respectfully requests the Indiana State Historic Preservation Officer provide written concurrence with the Section 106 determination of effect for the project's overall effect finding.

**SECTION 4(F) COMPLIANCE REQUIREMENTS (for historic properties)**

This undertaking will not convert property from the Section 4(f) property to a transportation use. INDOT, acting on FHWA's behalf, has determined the appropriate Section 106 finding is "No Historic Properties Affected"; therefore no Section 4(f) evaluation is required.

Consulting parties will be provided a copy of the findings and determinations of INDOT on behalf of FHWA, in accordance with INDOT and FHWA's Section 106 procedures. Comments will be accepted for thirty (30) days upon receipt of the findings.



---

Patrick Carpenter, for FHWA  
Manager  
INDOT Cultural Resources Office

4-10-2015

---

Approved Date

**FEDERAL HIGHWAY ADMINISTRATION'S  
DOCUMENTATION OF SECTION 106 FINDINGS OF  
NO HISTORIC PROPERTIES AFFECTED  
SUBMITTED TO THE STATE HISTORIC PRESERVATION OFFICER  
PURSUANT TO 36 CFR 800.4(d)(1)  
I-69 AND EAST 106TH STREET INTERCHANGE PROJECT  
FISHERS, DELAWARE TOWNSHIP, HAMILTON COUNTY, INDIANA  
DES NO. 1298035  
FEDERAL DES NO. PENDING**

## **1. DESCRIPTION OF THE UNDERTAKING**

The town of Fishers, the Hamilton County Highway Department and the Indiana Department of Transportation propose to construct a new interchange along I-69 at East 106th Street in the town of Fishers, Delaware Township, Hamilton County, Indiana. The project area can be found on the *Fishers, Indiana* USGS Topographic Quadrangle map in T17N, R5E, Sections 6 and 7, and in T17N, R4E, Sections 1 and 12. The project's main objectives include the following:

- Construction of two teardrop shaped roundabouts with two lane entrances and exits on each approach on East 106th Street St;
- Construction of two-lane entrance ramps and one-lane exit ramps that will transition to two lanes from I-69;
- Modification of East 106th Street St with a new curb and gutter system and a continuous median;
- Construction of a new two-span bridge carrying East 106th Street St over I-69 to accommodate a ten-lane configuration for I-69 at the completion of the Operation Indy Commute project;
- Installation of a multi-use path along the north and south sides of East 106th Street St with a crosswalk at Crosspoint Boulevard and USA Parkway/Lantern Road; a six feet grass buffer will be added between the curb and gutter and the multi-use path; and
- Creation of two retention ponds at the project's northern end to collect runoff.

The project limits are Crosspoint Boulevard/Lantern Road and 106<sup>th</sup> Street intersection east approximately 2,400 feet (0.45 mile) to the USA Parkway/Lantern Road and 106<sup>th</sup> Street roundabout, with a minimum coverage width of 200 feet included on both sides of 106<sup>th</sup> Street; both northbound and southbound lanes of I-69 extending approximately 2,700 feet north and south of 106<sup>th</sup> Street, a total length of 5,400 feet (1.02 miles), with a coverage width of the existing right of way fence to a minimum of 125 feet beyond this right of way; Kincaid Drive extending approximately 300 feet north and south of 106<sup>th</sup> Street (0.06 mile), with a minimum coverage width of 75 feet left and right of the centerline of Kincaid Drive. The project is designed to relieve congestion and to provide pedestrian connectivity in this heavily developed suburban area of southeastern Hamilton County. (See Appendix A: Project Design Plans.)

This is a federally funded project that requires coordination with the Federal Highway Administration (FHWA) as required by the Section 106 process. An Area of Potential Effect (APE) was established for the proposed project. Per 36 CFR 800.16(d), the APE is defined as the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic

properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.” The APE for above ground resources has been drawn to encompass adjacent properties on all sides of the undertaking and/or with a viewshed of it. The APE limits are approximately 2930 feet north and 3120 feet south of the center point of 106<sup>th</sup> Street over I-69, and approximately 1950 feet west and 2720 feet east of the center point of 106<sup>th</sup> Street over I-69. The archaeological APE has been defined as the project footprint. (See Appendix B: Maps and APE.)

## **2. EFFORTS TO IDENTIFY HISTORIC PROPERTIES**

### Historic Properties Report

Pursuant to 36 CFR 800.4(b), project historians from H&H Associates, LLC (H&H) initiated identification efforts in May 2013 by reviewing the National Register of Historic Places (NRHP), the Indiana Register of Historic Sites and Structures (SR), the State Historic Architectural and Archaeological Research Database (SHAARD), the Indiana Historic Bridge Inventory, the Indiana Historical Bureau’s Historical Markers Database, and the 1992 *Hamilton County Interim Historic Sites and Structures Inventory* (IHSSI) for previously-identified properties. Primary and secondary documentary research included numerous published county and local histories, newspaper articles, governmental reports, documented oral histories, historical and current atlases and maps, and online resources. Additionally on June 7, 2013 the historian conducted a field survey by walking all the streets within the APE in an effort to identify and evaluate any historic resources present.

As a result of identification and evaluation efforts for this project, one property historically known as the Flanagan House, but also called the Kincaid House, was recommended eligible for listing in the National Register of Historic Places under Criterion C. The historian recommended no portion of the APE eligible for NRHP listing as a historic district. On August 13, 2013, the INDOT CRO stated in an email that their office concurred with the evaluations and recommendations made in this report. The Abstract and Conclusion sections of the HPR are presented in Appendix D: Report Summaries.

### Archaeological Survey

Archaeologists from Weintraut and Associates conducted an archaeological reconnaissance survey on June 26, 2013 and examined an approximate thirty-nine acres in the project area. A pedestrian walkover survey and shovel testing were utilized to examine the project right-of-way. The archaeologist also conducted a literature review at the Department of Historic Preservation and Archaeology (DHPA). On July 17, 2013 archaeologists for Weintraut and Associates completed an archaeological field reconnaissance and literature review report. The report concluded that the project area does not have the potential to contain archaeological resources and that no further work is recommended before the project is allowed to proceed. On July 11, 2013, the INDOT CRO stated in an email that their office concurred with the evaluations and recommendations made in this report. The archaeology report’s Summary and Recommendations are presented in Appendix D: Report Summaries.

### Consultation

On September 6, 2013 the following parties were sent the Historic Properties Report and were invited to be Section 106 consulting parties and to aid in the identification of historic properties. Those organizations that accepted the invitation are identified in bold print.

- Indiana Landmarks
- Hamilton County Historian

- **Hamilton County Historical Society**
- Fishers Historic Preservation Committee
- Hamilton County Highway Director
- Hamilton County Commissioners
- Hamilton County Council of Governments
- Fishers Town Council
- **Dan Kincaid, Kincaid Developers, Inc.**

The FHWA, INDOT, and Indiana State Historic Preservation Officer are automatically considered consulting parties. Comments were requested within 30 days of receipt of these materials. Additionally, on August 13, 2014 the Indianapolis Metropolitan Planning Organization was sent an Early Coordination Letter in accordance with the National Environmental Policy Act, which contained a red flag survey commenting on the possible NRHP eligibility of the Flanagan House.

On September 16, 2013 a consulting parties site meeting was held at the Flanagan House to discuss concerns regarding potential impacts to historic resources resulting from the project. Attendees included the following:

- Mr. Larry Heil, FHWA
- Ms. Mary Kennedy, INDOT CRO
- Mr. John Carr, Mr. Wade Tharp and Mr. Chad Slider, SHPO
- Ms. Dorothy Young, Hamilton County Historical Society
- Mr. Dan Kincaid, Kincaid Developers (owner of the Flanagan House)
- Mr. Roger Kessler, Logan Limited
- Mr. Jeromy Richardson, United Consulting
- Mr. David Cleveland, Corradino Group
- Ms. Candy Hudziak, H&H Associates

Ms. Kennedy conducted the meeting. Mr. Richardson spoke of the engineering components of the project, and of the design considerations being taken to minimize impacts to the Flanagan House. He described the three preferred interchange alternatives for Kincaid Drive and East 106th Street, which are a tight diamond interchange, a single point urban interchange, and a roundabout interchange. All three proposed alternatives widen East 106<sup>th</sup> Street to the north, away from the Flanagan House, to accommodate the needed additional lanes. The proposed NRHP boundary line for the Flanagan House was discussed at length and the consensus was a smaller footprint would be sufficient to convey the property's historic context. Mr. Heil advised the design team to make every effort to avoid encroachment into the historic boundary, which they agreed to do.

The attendees then discussed the three preferred interchange designs in detail as they pertained to the potential impacts to the Flanagan House. All three options required the profile grade of East 106th Street to be raised a few feet to accommodate larger beams for the new bridge over I-69, and grassed slopes will extend down from the new profile grade to the existing ground. Additionally, all three options included the installation of curb and gutter systems and an eight feet pedestrian/non-motorized path paralleling East 106th Street. After each alternative was evaluated, Mr. Heil stated that the roundabout interchange configuration appeared to register the least amount of impact to the Flanagan House, as no right-of-way from the historic property lines would be required. Additionally, this type of interchange would require lower speed limits in the area that would lessen the audible impact of increased traffic.

The attendees then discussed the appropriate Effect Finding, and Mr. Heil stated that if the preferred method of the roundabout interchange is utilized and no right-of-way is taken from the history boundary of the Flanagan House, then he believed “No Adverse Effect” to be the appropriate finding. No consensus on this matter was met, however, as some attendees requested more definite project information before deciding on the appropriate effect (the meeting minutes are provided in Appendix E: Correspondence). The SHPO in a letter dated October 4, 2013 stated their concurrence with the HPR’s opinion that the Flanagan House is NRHP eligible under Criterion C.

In late 2013 Dan Kincaid, owner of the Flanagan House, sold the property to real estate developers Thompson Thrift. Thompson Thrift acquired the property to develop retail and office space at that location, and the Flanagan House was slated for demolition in June 2014. Area preservation groups successfully raised funds to move the Flanagan House. In October 2014 the Flanagan House was relocated to a two-acre parcel located approximately 0.5 mile north on the west side of the “T” intersection at USA Parkway and USA Drive. An aerial map identifying the house’s new location is provided in Appendix E: Correspondence.

Though the Flanagan House was moved it continued to be located within the project’s APE, which necessitated a review of the house’s continued eligibility by the consulting parties. On October 9, 2014 the INDOT CRO requested the SHPO to issue a formal opinion stating whether they believed the Flanagan House remained NRHP eligible. On October 22, 2014 the SHPO responded that the house’s relocation adversely impacted the property’s integrity and their office no longer recommend this house as eligible for NRHP inclusion under any criteria.

Copies of consulting party comments are presented in Appendix E: Correspondence.

### **3. BASIS FOR FINDING**

Subsequent to the Flanagan House’s relocation the SHPO on October 4, 2013 had concurred with H&H Associates’ recommendation that it was NRHP eligible under Criterion C. Additionally, the archaeological records check and field reconnaissance identified no sites eligible for inclusion on the NRHP present in the project’s vicinity. On July 11, 2013 the INDOT CRO accepted the report and authorized its transmittal to the SHPO for their review and comment. The SHPO concurred with the archaeological report in a letter dated August 16, 2013, stating that “based upon the submitted information and the documentation available to the staff of the Indiana SHPO, we have not identified any currently known archaeological resources listed in or eligible for inclusion in the National Register of Historic Places (“NRHP”) within the proposed project area.” No other invited consulting party formally commented on either report (see Appendix D: Report Summaries and Appendix E: Correspondence).

However, in late 2013 transfer of ownership of the Flanagan House led to the threat of its demolition in June 2014. To avoid its demolition local preservation activists successfully arranged to move the house to a location 0.5 mile north of its original location, where it was still located within the project’s APE. Upon review of the house’s continued eligibility post-relocation, the SHPO formally issued its opinion that the house no longer retained sufficient integrity for NRHP inclusion. Therefore, as the Flanagan House is no longer considered NRHP eligible, the project’s APE currently does not contain any historic properties. As a result, it is recommended that this project receive a finding determination of “No Historic Properties Affected.” Consulting parties will be provided a copy of the INDOT findings and determinations in accordance with Section 106 procedures. In addition, a public notice will be placed in a newspaper of general circulation. Comments will be accepted for thirty days from the date of publication. Appropriate revisions to this document will be made based upon comments received. If no party expresses objections to the “No Historic Properties Affected”

finding within the thirty-day comment period then the Section 106 review for this project will be considered complete.

**APPENDICES:**

*Appendix A: Project Design Plans*

*Appendix B: Maps and APE*

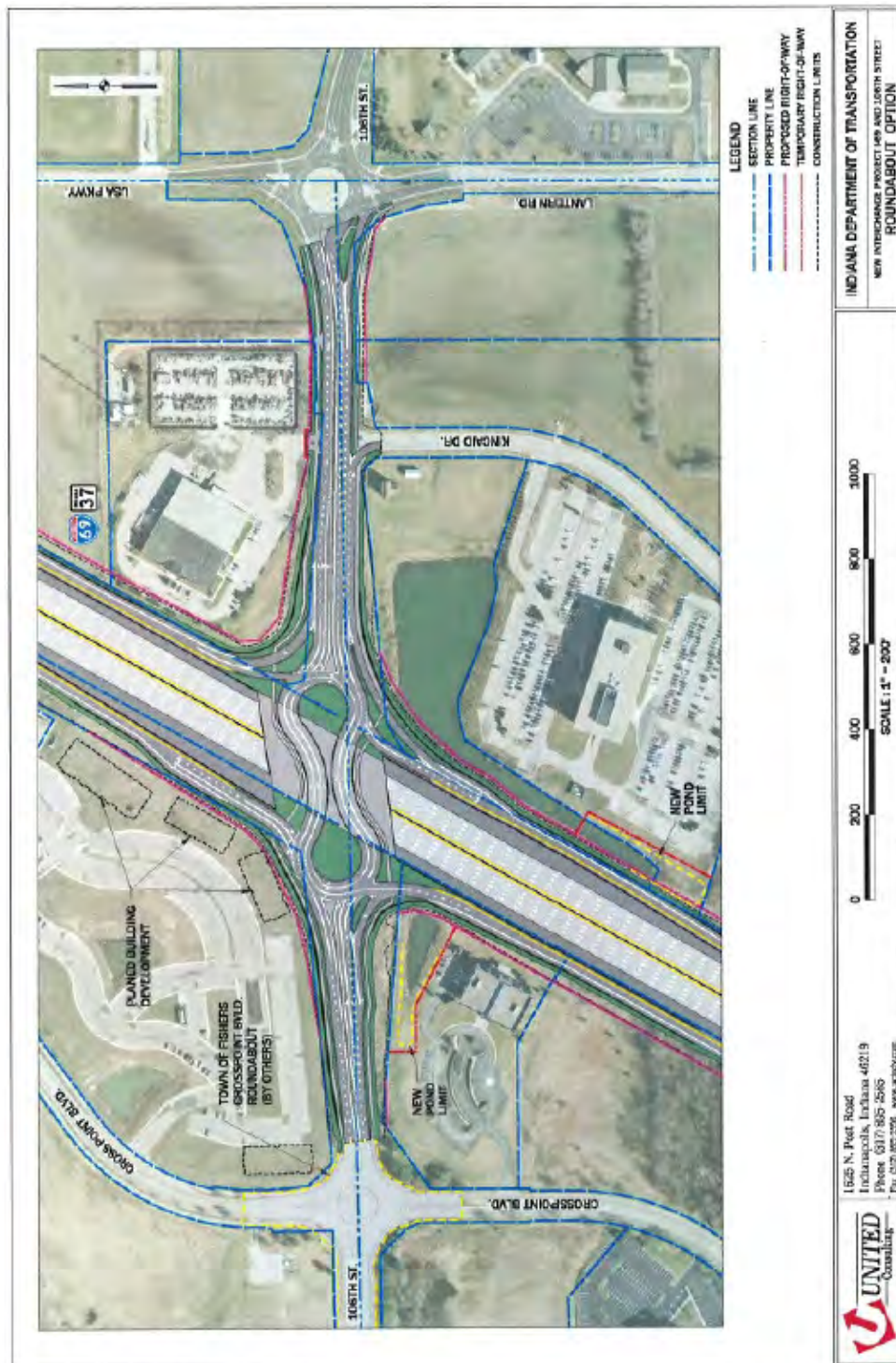
*Appendix C: Photo Key Maps and Project Site Photographs*

*Appendix D: Report Summaries*

*Appendix E: Correspondence*

# Section 106

## Appendix A: Project Design Plans

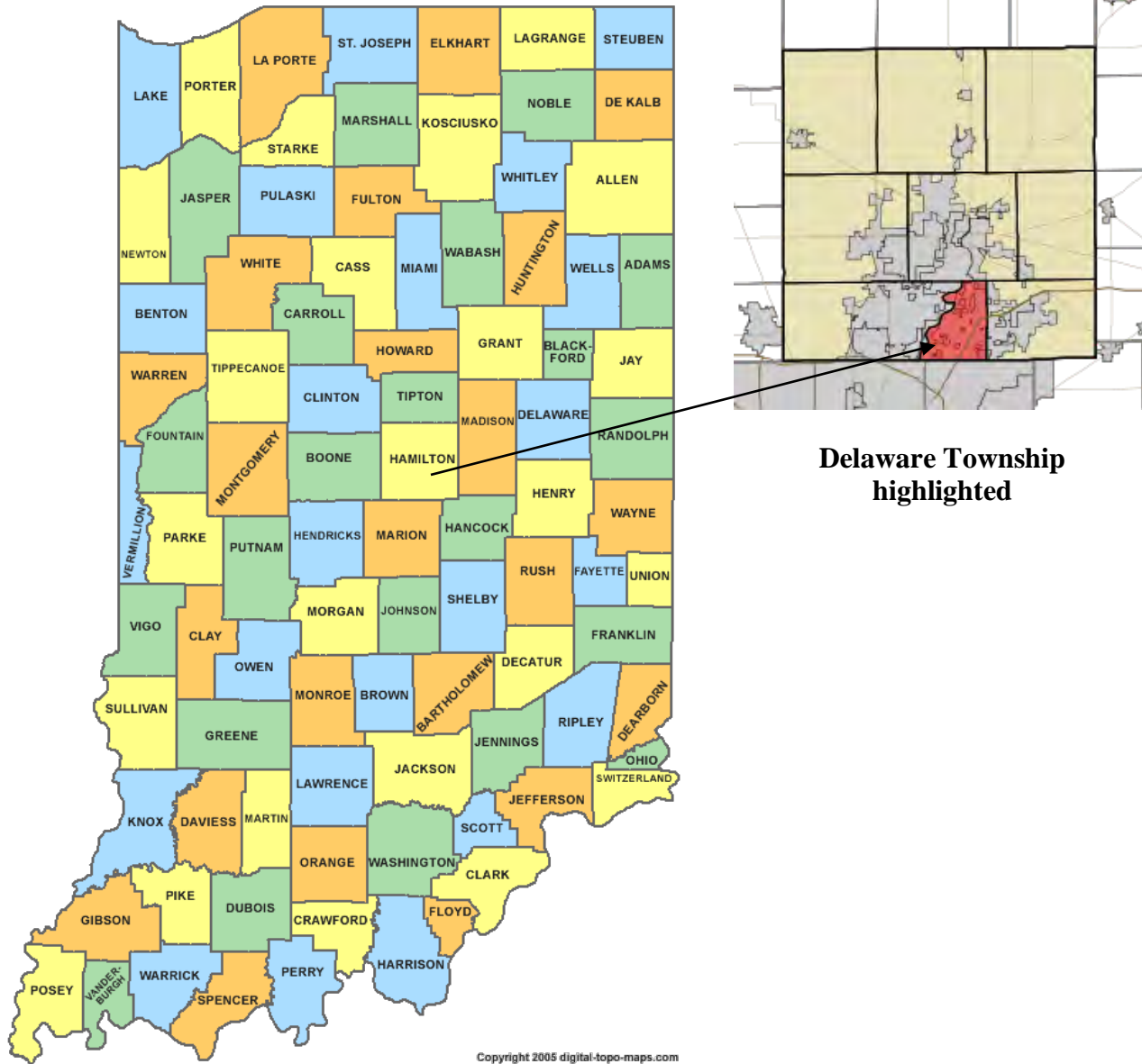


**Project plans with roundabout interchange option at Kincaid Dr and E 106<sup>th</sup> St**

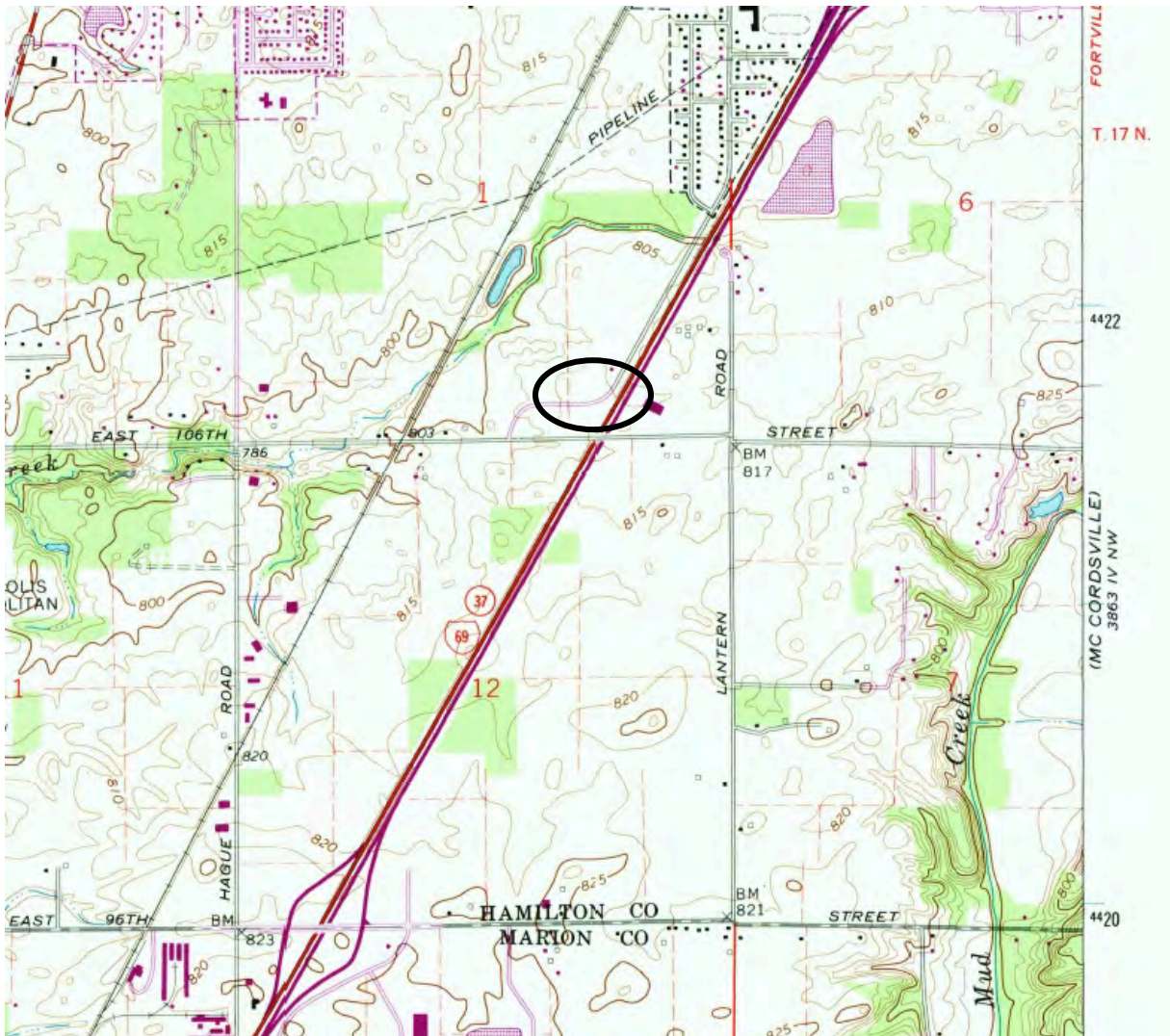
*Image courtesy of United Consulting*

# Section 106

## *Appendix B: Maps and APE*



**Hamilton County, Indiana, identified**



**Close up of 1:24,000 USGS Topographical Map (*Fishers, IN Quadrangle; 1967*) with project location identified**



Close up of 1:24,000 USGS Topographical Map (*Fishers, IN Quadrangle*; 2013)  
with project location identified



**Aerial map showing proposed APE boundary from the Historic Properties Report (HPR) with the Flanagan House's former location identified; the next two maps show close up views of the APE**

*Image provided by Hamilton County Flex Viewer GIS*



**Aerial map showing north end of the proposed APE boundary**  
***Image provided by Hamilton County Flex Viewer GIS***



Aerial map showing south end of the proposed APE boundary with the Flanagan House identified at its original location before it was moved (see Appendix E: Correspondence for a map of the house's current location)

*Image provided by Hamilton County Flex Viewer GIS*



**Aerial map outlining the legal parcel boundary owned by Kincaid Developers (Dan Kincaid) that originally included the Flanagan House; the house and land were sold to Thompson Thrift in late 2013**

*Image provided by Hamilton County Flex Viewer GIS*

# Section 106

## *Appendix C: Photo Key Maps and Project Site Photographs*



**Key Map – North end of APE (1 of 2)**



**Key Map – South end of APE (2 of 2)**



**1. View south from north end of APE on Lantern Rd, I-69 is on left**



**2. Lantern Woods apartments, 10950 Lantern Woods Blvd**



**3. Medical center building across from Lantern Woods apts, 10765 Lantern Rd**



**4. Prairie View Business Complex, south side of Lantern Rd**



**5. Prairie View business complex looking SE from Lantern Rd**



**6. View SE to East 106th Street St bridge over I-69 from Prairie View entrance**

	
<p><b>7. Prairie View two-story commercial building, 10711 Lantern Rd</b></p>	<p><b>8. View SE to East 106th Street St bridge over I-69 from 10711 Lantern Rd</b></p>
	
<p><b>9. Lantern Rd and East 106th Street St intersection looking SW</b></p>	<p><b>10. View to East 106th Street St bridge from west end of APE</b></p>
	
<p><b>11. Vacant commercial building, 10500 Crosspoint Blvd</b></p>	<p><b>12. Raymond James Building, 9998 Crosspoint Blvd</b></p>



**13. Wiley Building, 10475 Crosspoint Blvd**



**14. Tyco Building, 10405 Crosspoint Blvd**



**15. View to East 106th Street St bridge from 10500 Crosspoint Blvd**



**16. View to East 106th Street St bridge over I-69 looking NE from 10500 Crosspoint Blvd**



**17. East 106th Street St bridge looking east toward Kincaid Dr**



**18. I-69 looking N from East 106th Street St bridge**



**19. East 106th Street St bridge looking W toward Lantern Rd**



**20. Sallie Mae Building, 11100 USA Pkwy**



**21. Eastern Star Church, 8850 E 106th Street St**



**22. E 106th Street St looking W toward USA Pkwy intersection at east end of APE**



**23. Architectural Brick and Tile, 8610 E 106th Street St**



**24. Flanagan House, SW corner of E 106th Street St and Kinkaid Dr (former location)**



**25. Freedom Mortgage Building, 10500 Kincaid Dr**



**26. Roche Building, 10300 Kincaid Dr**



**27. Commercial building, 10206-10212 Lantern Rd**



**28. Lantern Rd and Park Central Dr intersection looking N from south end of APE**



**29. Wellington Place Apartments looking S from Lantern Road Elementary**



**30. Wellington Place apartments looking S from Lantern Road Elementary**



**31. Lantern Road Elementary, 10595  
Lantern Rd**



**32. Lantern Road Elementary looking NE from  
E 106th Street St**



**33. E 106th Street St and Lantern Rd  
roundabout intersection looking N from  
Lantern Rd**



**34. View toward project area NW from  
Lantern Road Elementary**

# Section 106

## *Appendix D: Report Summaries (HPR and Archaeology)*

**HISTORIC PROPERTY REPORT FOR:  
I-69 AND 106TH STREET INTERCHANGE PROJECT  
FISHERS, DELAWARE TOWNSHIP, HAMILTON COUNTY, INDIANA**

**DES NO: 1298035**

**FEDERAL PROJECT NO: PENDING**

**8/16/2013**

**PREPARED FOR UNITED CONSULTING**

*Candace Hudziak*

H&H Associates, LLC  
Principal Investigator: Candace Hudziak, M.A.  
218 E. North Street  
Greenfield, IN 46140  
317.462.7177  
historian@hhpast.com

## **Abstract**

### **I-69 and 106<sup>th</sup> Street Interchange Project**

### **Fishers, Delaware Township, Hamilton County, Indiana**

In May 2013 United Consulting contracted H&H Associates, LLC, to conduct an architectural and historical investigation in support of the I-69 and 106<sup>th</sup> Street Interchange Project, located in Fishers, Delaware Township, Hamilton County, Indiana.

The project historian who meets or exceeds the Secretary of the Interior's standards for Section 106 work identified and evaluated historic properties within the proposed Area of Potential Effects (APE) for this project. Historic properties were identified and evaluated in accordance with Section 106, National Historic Preservation Act (NHPA) of 1966, as amended, and CFR Part 800 (Revised January 2001), Final Rule on Revision of Current Regulations, December 12, 2000, and incorporating amendments effective August 5, 2004.

This Historic Properties Report documents the methodology and findings of eligibility as part of the Section 106 process. Survey and documentation were completed for the entire APE, including above ground resources previously recorded in the 1992 *Hamilton County Interim Historic Sites and Structures Inventory* report. There are no individual properties currently listed in the National Register of Historic Places (NRHP) or in the Indiana Register of Historic Places (SR) within the proposed APE. As a result of identification and evaluation efforts for this project, one individual property within the APE of this project known as the Flanagan House has been determined as eligible for inclusion in the NRHP.

## **Conclusion**

In summary, a literature review and field reconnaissance was conducted for the I-69 and 106<sup>th</sup> Street Interchange Project's APE in Delaware Township, Hamilton County, Indiana. The APE for this project encompasses all areas adjacent to the proposed project and was expanded in areas where there is a greater viewshed, capturing a total of fifteen sites. There are currently no properties listed in the National Register of Historic Places within the Area of Potential Effects (APE) of this project. The historian identified and evaluated one resource within the APE that is at least fifty years old, known as the Flanagan House, and recommends it eligible for NRHP listing under Criterion C.



## INDIANA ARCHAEOLOGICAL SHORT REPORT

State Form 54566 (1-11)

INDIANA DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF HISTORIC PRESERVATION  
AND ARCHAEOLOGY  
402 West Washington Street, Room W274  
Indianapolis, Indiana 46204-2739  
Telephone Number: (317) 232-1646  
Fax Number: (317) 232-0693  
E-mail: [dhpa@dnr.IN.gov](mailto:dhpa@dnr.IN.gov)

Where applicable, the use of this form is recommended but not required by the Division of Historic Preservation and Archaeology.

Author: Jason Goldbach

Date (month, day, year): July 17, 2013

Project Title: New Interchange Project at I-69 and 106<sup>th</sup> Street

### PROJECT OVERVIEW

The proposed project includes the construction of a new interchange along I-69 at 106th Street in Fishers, Indiana. This project is being developed by the Indiana Department of Transportation (INDOT), Central Office in coordination with the Town of Fishers Department of Engineering and Public Works and the Hamilton County Highway Department. The project is federally funded. Land will be acquired; all existing right-of-way will be verified during the land acquisition process, which may reveal the need for additional parcels.

Project Description:

The project proposes two tear drop roundabouts with 16 foot circulating lanes and two lane entrances and exits on each approach. The I-69 exit ramps will be designed with a single 16 foot lane, which will transition to two 12 foot lanes. The I-69 entrance ramps will exit the roundabout with two lanes, but will be transitioned to a single 16 foot lane for the majority of the ramp. Rather than ending the northbound entrance ramp with a merge taper, the northbound ramp will continue approximately 350 feet further and connect directly to the SR 37 exit lane. 106th Street will be constructed with two 12 foot lanes, with curb and gutter, in each direction with a continuous median between the roundabouts at the interchange and the adjacent roundabout intersections. A six foot grass buffer will be provided between the curb and gutter and an eight foot multi-use path. Finally, a two foot buffer will be provided between the multi-use path and the concrete barrier wall/pedestrian railing as recommended by the "Guide for the Development of Bicycle Facilities - 2012, Fourth Edition." Access to both Kincaid Drive and Architectural Brick & Tile will be limited to right-in, right-out. Pedestrian connectivity will be created between the proposed Crosspoint Blvd roundabout and the USA Parkway/Lantern road roundabout through the use of an eight foot multi-use path along the north and south sides of 106th Street.

INDOT Designation Number/ Contract Number: 1298035

Project Number:

DHPA Number:

Approved DHPA Plan Number:

Prepared For: United Consulting

Contact Person: Jeromy A. Richardson

Address: 1625 N. Post Road

City: Indianapolis

State: IN

ZIP Code: 46219

Telephone Number: 317.895.2585

E-mail Address: [Jeromyr@ucindy.com](mailto:Jeromyr@ucindy.com)

Principal Investigator: Jason Goldbach

Indiana Archaeological Short Report: New Interchange Project at I-69 & 106<sup>th</sup> Street  
July 2013 | WEINTRAUT & ASSOCIATES, INC.

Signature: \_\_\_\_\_  
Company/Institution: Weintraut & Associates, Inc.  
Address: 4649 Northwestern Drive  
City: Zionsville State: IN ZIP Code: 46077  
Telephone Number: 317.733.9770 E-mail Address: Linda@weintrautinc.com

### PROJECT LOCATION

County: Hamilton  
USGS 7.5' series Topographic Quadrangle: Fishers (USGS 1988)  
Civil Township: Delaware  
Legal Location:  

<input type="checkbox"/> 1/4, <input type="checkbox"/> 1/4, <input type="checkbox"/> SW 1/4, <input type="checkbox"/> SE 1/4, Section: <u>1</u>	Township: <u>17N</u>	Range: <u>4E</u>
<input type="checkbox"/> 1/4, <input type="checkbox"/> 1/4, <input type="checkbox"/> SE 1/4, <input type="checkbox"/> SE 1/4, Section: <u>1</u>	Township: <u>17N</u>	Range: <u>4E</u>
<input type="checkbox"/> 1/4, <input type="checkbox"/> 1/4, <input type="checkbox"/> NW 1/4, <input type="checkbox"/> NE 1/4, Section: <u>12</u>	Township: <u>17N</u>	Range: <u>4E</u>
<input type="checkbox"/> 1/4, <input type="checkbox"/> NW 1/4, <input type="checkbox"/> SW 1/4, <input type="checkbox"/> NE 1/4, Section: <u>12</u>	Township: <u>17N</u>	Range: <u>4E</u>

Topographic Map Datum: NAD 1927 Grid Alignment: SE  
Comments: Project area centered on the intersection of Interstate 69 and North 106th Street  
Property Owner: \_\_\_\_\_

### PROJECT AREA DETAILS

Length meters: 1455 feet: 4774 Width meters: 472 feet: 1550 hectares: 15.692 acres: 38.777  
Natural Region: Tipton Till Plain Section Glaciated Section  
Topography: Till Plain  
Soil Association: Crosby-Brookston  
Soils: Brookston silty clay loam: very deep, poorly drained soils formed in silty material and the underlying loamy till in depressions on till plains and moraine, and Crosby silt loam (0-3% slopes): very deep, somewhat poorly drained soils that are moderately deep to dense till.  
Drainage: White River

Surface Visibility:

Factors Affecting Visibility:

Visual Walkover ☒ Pedestrian Survey ☐ Shovel Test ☒ Screened ☐ Mesh Size

Interval 5 m ☐ 10 m ☐ 15 m ☐ Other (describe below) ☒

Number of Shovel Test Units Excavated:

Describe Methods:

Attach photographs documenting disturbances below

Describe Disturbances:

Comments:

### RESULTS

- ☒ Archaeological records check has determined that the project area does not have the potential to contain archaeological resources.
- ☐ Archaeological records check has determined that the project area has the potential to contain archaeological resources.
- ☐ Phase Ia reconnaissance has located no archaeological resources in the project area.
- ☐ Phase Ia reconnaissance has identified landforms conducive to buried archaeological deposits.

Actual Area Surveyed hectares:  acres:

Comments:

### RECOMMENDATION

- ☐ The archaeological records check has determined that the project area has the potential to contain archaeological resources and a Phase Ia archaeological reconnaissance is recommended.
- ☒ The archaeological records check has determined that the project area does not have the potential to contain archaeological resources and no further work is recommended before the project is allowed to proceed.
- ☐ The Phase Ia archaeological reconnaissance has located no archaeological sites within the project area and it is recommended that the project be allowed to proceed as planned.
- ☐ The Phase Ia archaeological reconnaissance has determined that the project area includes landforms which have the potential to contain buried archaeological deposits. It is recommended that Phase Ic archaeological subsurface reconnaissance be conducted before the project is allowed to proceed.
- ☐ The Phase Ia archaeological reconnaissance has determined that the project area is within 100 feet of a cemetery and a Cemetery Development Plan is required per IC-14-21-1-26.5.

Cemetery Name:

Other Recommendations/Commitments:

Pursuant to IC-14-21-1, if any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery

# Section 106

## Appendix E: Correspondence



Indiana Department of Natural Resources

Michael R. Pence, Governor  
Cameron F. Clark, Director

Division of Historic Preservation & Archaeology-402 W. Washington Street, W274-Indianapolis, IN 46204-2739  
Phone 317-232-1646 Fax 317-232-0693 dhp@dnr.IN.gov



August 16, 2013

Linda Weintraut, Ph.D.  
Weintraut & Associates, Inc.  
P.O. Box 5034  
Zionsville, Indiana 46077

Federal Agency: Federal Highway Administration ("FHWA")

Re: Indiana archaeological short report (Goldbach, 7/17/2013) concerning the new interchange project at I-69 and 106th Street (Designation No. 1298035; DHPA No. 15147)

Dear Dr. Weintraut:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f), 36 C.F.R. Part 800, and the "Programmatic Agreement among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation, the Indiana State Historic Preservation Officer regarding the implementation of the Federal Aid Highway Program in the State of Indiana," the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated and received on July 17, 2013, for the above indicated project in Delaware Township, Hamilton County, Indiana.

In regard to the Indiana archaeological short report (Goldbach, 7/17/2013), based upon the submitted information and the documentation available to the staff of the Indiana SHPO, we have not identified any currently known archaeological resources listed in or eligible for inclusion in the National Register of Historic Places ("NRHP") within the proposed project area. However, this identification is subject to the project activities remaining within areas disturbed by previous construction of a recent and non-historical nature. If archaeological deposits are encountered from the post-contact period, they will be evaluated regarding their eligibility for the National Register of Historic Places in consultation with the staff of the Indiana SHPO. Please contact our office if such deposits are encountered. The archaeological recording must be done in accordance with the Secretary of the Interior's "Standards and Guidelines for Archaeology and Historic Preservation" (48 F.R. 44716) and a report of the archaeological documentation must be submitted to our office for review and comment.

Additionally, in regard to field investigation methodology, please note that, per the current draft of "Guidebook for Indiana Historic Sites and Structures Inventory—Archaeological Sites," the DHPA must be consulted with prior to implementation of changes in field techniques such as a change in shovel probe intervals from 15 meters to 30 or 45 meters.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and 29 does not obviate the need to adhere to applicable federal statutes and regulations.

If you have questions about archaeological issues please contact Wade T. Tharp at (317) 232-1650 or wtharp1@dnr.IN.gov. If you have questions about buildings or structures please contact John Carr at (317)


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Linda Weintraut, Ph.D.  
August 16, 2013  
Page 2

233-1949 or jcarr@dnr.IN.gov. Additionally, in all future correspondence regarding the above indicated project, please refer to DHPA No. 15147.

Very truly yours,



Chris Smith  
Deputy Director  
Indiana Department of Natural Resources

CS:WTT:wt

cc: Lawrence Hall, Federal Highway Administration, Indiana Division  
Patrick A. Carpenter, Indiana Department of Transportation  
Mary Kennedy, Indiana Department of Transportation  
Shaun Miller, Indiana Department of Transportation  
Melany Prather, Indiana Department of Transportation  
Linda Weintraut, Ph.D., Weintraut & Associates, Inc.

September 6, 2013

Mr. Larry Heil  
Federal Highway Administration  
Room 254, Federal Office Building  
575 North Pennsylvania Street  
Indianapolis, IN 46204

Re: Des. No.: 1298035, New Interchange Project at I-69 and 106<sup>th</sup> Street, Hamilton County  
Consulting Parties Meeting, September 19, 2013 at 9:00A.M. (on site)

Dear Mr. Heil:

The Indiana Department of Transportation intends to proceed with a project involving a new interchange on I-69 at 106<sup>th</sup> Street in the Town of Fishers, Hamilton County (Appendix 1). The project involves the historic Flanagan House, situated in the southeast quadrant of the proposed interchange. An *Historic Properties Report* (HPR – Attachment 1) and *Indiana Archeological Short Report* have been prepared for the project. The HPR discusses the Flanagan House and other historic resources in the project area.

This letter invites you to a Consulting Parties Meeting September 19, 2013 at 9:00 A.M., to discuss the project and its potential effects on cultural resources, notably the Flanagan House. The meeting will be held on site at the southwest corner of 106<sup>th</sup> Street and Kincaid Drive. (Parking is available along Kincaid Drive.) This meeting is consistent with regulatory requirements of the National Historic Preservation Act (36 CFR 800).

We are inviting comments from you in your capacity as an interested party. **Please use the above designation number and description in any future interactions.** We will review your comments as the Section 106 process continues.

This project is being developed by the Indiana Department of Transportation (INDOT), Central Office, in coordination with the Town of Fishers Department of Engineering and Public Works and the Hamilton County Highway Department. The project is federally funded. New right-of-way is required.

**Existing Conditions.** 106<sup>th</sup> Street passes over I-69 with no access to I-69. 106<sup>th</sup> Street is a two-lane road with a posted speed limit of 40 mph. I-69 is four lanes in each direction, plus auxiliary lanes for entrance/exit to 96<sup>th</sup> and 116<sup>th</sup> streets, and inside and outside shoulders. The posted speed is 65 mph. There are no pedestrian facilities along 106<sup>th</sup> Street. Crosspoint Boulevard/Lantern Road is signalized at the west project limit, and there is a full two-lane roundabout at USA Parkway/Lantern Road, the east project limit. The Town of Fishers has plans to construct a full two-lane roundabout at Crosspoint Boulevard.

**Project Description.** Several interchange alternatives are under consideration: a tight diamond interchange, a single-point urban interchange (SPUI) interchange, and roundabout interchange. Operational and cost analysis, along with impacts, will determine the preferred alternative. Preliminary schematics of these three interchange alternatives are used herein for illustrative purposes (Appendix 2). According to the draft, *Indiana Archeological Short Report*, the “project is in an area of heavy disturbance with no potential for deeply buried cultural deposits.” The draft *Historic Property Report* identified and evaluated one resource within the Area of Potential Effect that is at least fifty years old,

200 S MERIDIAN STREET • SUITE 330  
INDIANAPOLIS, IN 46225  
TEL 317.488.2363 • 800.291.8242  
FAX 317.488.2373  
WWW.CORRADINO.COM

known as the Flanagan House (Appendix 3). Its eligibility for National Register of Historic Places (NRHP) listing is now under review.

Should we not receive your response **within thirty (30) calendar days** from the date of this letter, it will be assumed that you feel that there will be no adverse effects incurred as a result of the proposed project. However, should you find that an extension to the response time is necessary; a reasonable amount may be granted upon request. If you have any questions regarding this matter, please feel free to contact David Cleveland of The Corradino Group, a subconsultant to Untied Consulting, and the consultant responsible for this coordination activity. Thank you in advance for your input.

Sincerely,



David Cleveland, PE, PTOE

TS/KH  
Appendices and Attachments

i:\projects\4184\wp\section 106 consulting parties meeting invitation letter.docx

## Kincaid Developers, Inc.

9701 N by Northeast Blvd.  
Fishers, IN 46037  
(317) 841-9092

September 6, 2013

Mr. David Cleveland  
Corradino LLC  
200 South Meridian, Suite 330  
Indianapolis, IN 46225

RE: 106<sup>th</sup> Street Interchange, Designation No. 1298035

Dear Mr. Cleveland,

All of us at Kincaid Developers and the entire Kincaid family are highly supportive of the 106<sup>th</sup> Street interchange as we have been promoting it for more than 20 years. My personal favorite is the roundabout design as roundabouts have proven to be very effective in a similar situation in Carmel.

The design does not appear to affect the Flannigan House much, if at all. Actually we feel that the interchange project is far more important than the house. This is a very necessary interchange for the entire community.

I will be glad to meet you on September 19<sup>th</sup> at 9:00 A.M. the house to go over anything you would like to discuss. Our main objective is to move the project along as fast as possible for all concerned.

You may always contact me by phone or email if you wish.

Sincerely,



Dan Kincaid  
Kincaid Developers  
darkincaid@hotmail.com  
Office (317) 841-9092  
Cell Phone (317) 432-3521

**I-69/106<sup>th</sup> St Interchange Project (Des # 1298035)**  
**Consulting Parties Meeting Agenda**

September 19, 2013

9 a.m.

Location: Flanagan House Property, located at Kincaid Dr and 106<sup>th</sup> Street

Invitees: Larry Heil, FHWA; Mary Kennedy, INDOT CRO; Chad Slider, SHPO; Bradley Davis, Hamilton Co Hwy Dir; John Weingardt, Fishers Council President; Jeff Hill, Fishers Engineer; John Dillinger, Hamilton Co Commissioners; David Heighway, Hamilton Co Historian; Mark Dollase, Indiana Landmarks; Randy Kincaid of Kincaid Developers and Flanagan House property owner; Jeromy Richardson, United Consulting; David Cleveland, Corradino Group; Candace Hudziak, H&H Associates

- I. Introductions            Ms. Kennedy, INDOT CRO
- II. Brief overview of the Section 106 process and meeting purpose ---- Mr. Heil, FHWA
- III. Historic Properties Report overview and recommendations ---- Ms. Hudziak, H&H Associates
- IV. Tour of the Flanagan House interior ---- Mr. Kincaid, Property owner
- V. Brief description of the project as it relates to the NRHP-eligible Flanagan House property ---- Mr. Cleveland, Corradino Group
- VI. Discussion of potential impacts to this property, and the appropriate effect finding for the project based upon those impacts ---- Meeting participants
- VII. If necessary, a discussion of possible mitigation items if it is believed the project will result in an Adverse Effect finding ---- Meeting participants
- VIII. Adjournment

## Meeting Summary

**PROJECT:** Des. No. 1298035  
New Interchange at 106<sup>th</sup> Street and I-69 in Fishers, Indiana

**DATE/TIME:** September 19, 2013  
9:00am – 11:00am

**SUBJECT:** **Section 106 Consulting Parties Meeting**

**LOCATION:** Flanagan House (southwest quadrant of 106<sup>th</sup> Street and Kincaid Drive)

**ATTENDEES:** Larry Heil (FHWA)  
John Carr (IDNR-DHPA)  
Chad Slider (IDNR-DHPA)  
Wade Tharp (IDNR-DHPA)  
Dorothy Young (Hamilton County Historian)  
Mary Kennedy (INDOT)  
Dan Kincaid (Kincaid Developers) – owner of the Flanagan House  
Roger Kessler (Logan Limited) – owner of adjacent parcel to the Flanagan House  
Jeromy Richardson (United Consulting)  
Candy Hudziak (H&H)  
David Cleveland (Corradino)

The following items are of note:

1. **Introduction:** Mary Kennedy, Indiana Department of Transportation (INDOT) Cultural Resources, thanked everyone for participating and led the introductions of the meeting participants. Ms. Kennedy briefly highlighted the previously distributed consulting parties meeting packet, containing the meeting invitation; a description of the proposed new interchange project including project mapping and interchange alternatives schematic diagrams; and the Historic Property Report. The Historic Property Report, prepared by H&H Associates, Inc., contains the area of potential effect (APE) and eligibility recommendations. Ms. Kennedy noted that the Historic Property Report documents only one eligible historic resource within the APE, the Flanagan House, which is eligible under criterion C due to the scarcity of the I-house architectural type within Hamilton County.
2. **Overview of the Section 106 process:** Larry Heil, Federal Highway Administration (FHWA), provided a brief overview of the Historic Preservation Act and the Section 106 procedures. Mr. Heil noted that the use of federal funds for this project triggers the Section 106 requirements and that the team's responsibility is to 1) identify historic resources within the APE, 2) avoid adverse effects to historic properties as possible, and 3) minimize adverse effects to historic properties when not possible to avoid.

3. **Overview of the Flanagan House:** Candy Hudziak, H&H Associates, Inc., discussed the characteristics of the Flanagan House that make it eligible under criterion C. The Flanagan House was listed as “notable” in the 1992 Interim Report. It is eligible for inclusion in the National Register for its I-house floor plan and architectural features, and not for its setting. The Flanagan House was once part of a working farm, but over the years the area has changed to a suburban commercial, office, residential setting.
4. **Historic Boundary:** The historic boundary, defined in the Historic Property Report, contains the house and the barn, but not the entire parcel. Mr. Heil noted that the northern line of the historic boundary, as illustrated in the Historic Property Report, appears to extend beyond and into the existing right-of-way along 106<sup>th</sup> Street. This was confirmed by Jeromy Richardson, United Consulting, based on detailed survey collected as part of the project’s design effort. Mr. Heil directed the team to revise the northern line of the historic boundary to match the existing right-of-way line along the south side of 106<sup>th</sup> Street. This change eliminates a utility corridor from the historic boundary, which is not a contributing feature to the property. Ms. Kennedy responded that this revision can be included in the next Section 106 submittal.
5. **Overview of the Project as it Relates to the Flanagan House:** Mr. Richardson described the interchange project and the three interchange alternatives being considered: tight diamond interchange (TDI), single point urban interchange (SPUI), and roundabout interchange. Team members from Indiana Department of Natural Resources – Division of Historic Preservation and Archeology (IDNR-DHPA) asked numerous design related questions regarding horizontal alignment, vertical alignment, number of lanes, drainage, access, screening, and proposed pedestrian facilities. All three interchange alternatives widen 106<sup>th</sup> Street to the north, away from the Flanagan House, to accommodate the proposed additional lanes. While none of the interchange alternatives encroach upon the Flanagan House structure, the SPUI option requires right-of-way to be acquired from the historic boundary in front of the Flanagan House, as well as drainage improvements south of the Flanagan House outside of the historic boundary. The TDI and roundabout interchange options do not require this additional right-of-way. All three interchange options will require the profile grade of 106<sup>th</sup> Street to be raised a couple of feet to accommodate deeper beams for the bridge over I-69, and will have grassed slopes extending down from the new profile grade to the existing ground. All three interchange options include curb to collect drainage within a closed system and an 8’ wide pedestrian/non-motorized path paralleling the roadway. Dorothy Young, Hamilton County Historian, requested the team to consider planting a handful of ornamental trees in the vicinity of the Flanagan House, along the right-of-way but outside of the historic boundary, as part of the project, to soften the view from the Flanagan House to the widened 106<sup>th</sup> Street. Mr. Heil concurred that adding a few strategically placed trees would be desirable, and the goal is not to block the view of 106<sup>th</sup> Street from the Flanagan House, but to soften it. Some small trees and bushes are currently located along 106<sup>th</sup> St. between the Flanagan House and the 106<sup>th</sup> St. overpass and currently soften the view of the overpass from the house. They will be cleared as a result of the project.

6. **Avoidance of Encroachment into Historic Boundary:** Mr. Heil reiterated that the team should make every effort to avoid encroachment into the historic boundary so as not to create an adverse effect on the Flanagan House.
7. **Tour of the Flanagan House:** Dan Kincaid, owner of the Flanagan House, and Roger Kessler, owner of the property adjacent to the Flanagan House, led a tour of the house. Windows have been replaced but the original window openings and architectural elements surrounding the windows were not modified. The masonry exterior is in good condition. The team visited the first floor and second floor, but not the cellar/basement. Many of the original interior architectural features such as wood trim, transom windows, etc. are intact. Some modifications to the floor plan have been made over the years, including addition of a doorway entrance between two rooms on the first floor and the incorporation of two small rooms, within the area of the back room on the first floor. A closet was also added to one of the second floor rooms. David Cleveland questioned if these interior modifications are significant enough to change the National Register eligibility recommendation for the Flanagan House. The group concurred that the recommendation of eligible is still appropriate.
8. **Roundabout Interchange Alternative:** Mr. Heil commented that all things equal (i.e. traffic capacity, cost, etc.) among the interchange alternatives, the roundabout interchange configuration might foster lower average speeds near the historic boundary, which is desirable.
9. **Effect Discussion:** Ms. Kennedy asked the group's opinion concerning potential for adverse effect. Mr. Heil commented that assuming no right-of-way is acquired from the historic boundary and trees are strategically placed along 106<sup>th</sup> St., he does not see the project creating an adverse effect on the Flanagan House. IDNR-DHPA commented that they are reserving opinion until review the Effects Finding documentation. In particular, IDNR-DHPA would like to see more information regarding the raising of the profile grade along 106<sup>th</sup> Street to accommodate the new interchange bridge structure. Mr. Richardson and Mr. Cleveland commented that proposed cross sections are being developed as part of the design process, and cross sections exhibits can be created showing the profile grade and side slopes in relation to the Flanagan House. Ms. Hudziak responded that she can include that information within the Effect Finding recommendations and 800.11 documentation.
10. **Next Steps:** Ms. Kennedy reminded the group that we are halfway through the 30-day comment period for APE and eligibility, and requested that any comments be submitted in the next couple of weeks. Ms. Kennedy mentioned the next step is for the consultant team is to prepare the Effect Finding recommendations and distribute for review/comment. This will occur shortly after a preferred interchange configuration is selected. Ms. Kennedy adjourned the meeting.



Indiana Department of Natural Resources

Michael R. Pence, Governor  
Cameron F. Clark, Director

Division of Historic Preservation & Archaeology 402 W. Washington Street, W274-Indianapolis, IN 46204-2739  
Phone 317-232-1646 Fax 317-232-0693 dhp@dnr.IN.gov



October 4, 2013

David Cleveland, PE, PTOE  
Corradino LLC  
200 South Meridian Street, Suite 330  
Indianapolis, Indiana 46225

Federal Agency: Federal Highway Administration ("FHWA")

Re: Project information and *Historic Property Report for: I-69 and 106<sup>th</sup> Street Interchange Project, Fishers, Delaware Township, Hamilton County, Indiana* (Hudziak, 8/16/2013) (Des. No. 1298035; DHPA No. 15147)

Dear Mr. Cleveland:

Pursuant to Section 106 of the National Historic Preservation Act, as amended (16 U.S.C. § 470f), implementing regulations at 36 C.F.R. Part 800, and the "Programmatic Agreement . . . Regarding the Implementation of the Federal Aid Highway Program In the State of Indiana," the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has reviewed the materials submitted with your September 6, 2013, cover letter, which we received on September 9, for the aforementioned project in Hamilton County, Indiana.

The area of potential effects, as proposed in the historic property report ("HPR"), appears to be appropriate to the nature and scale of this project.

We agree with the opinion expressed in the HPR that the Flanagan House (IHSSI No. 057-206-50019) is eligible for inclusion in the National Register of Historic Places under Criterion C. It also appears to us, based on the HPR, that the Flanagan House is the only property within the APE that is eligible for the National Register.

During the September 19, 2013, consulting parties meeting, there was a discussion of the boundaries of the eligible Flanagan House property. As we recall, it was proposed by FHWA that the historic property boundaries be considered to be the current legal boundaries of the land on which the house sits. It apparently was assumed that the northern boundary (i.e., the boundary closest to 106<sup>th</sup> Street) would not include the area under the utility lines in front of the house. As we recall, the legal boundaries of the Flanagan House property are going to be checked. We think it is important to ascertain the location of that northern property line, because FHWA also indicated that the project should avoid encroaching on the Flanagan House property. In comparing the alternatives for the project design that are represented schematically in Appendix 2 of your September 6 cover letter, we see that the Roundabout Option and the Tight Diamond Option apparently would avoid encroachment upon the legal boundaries of the Flanagan House property, assuming that the legal boundaries are as depicted on those schematic drawings. On the other hand, it appears that the Single Point Option would require temporary right-of-way from the Flanagan House property and that the construction limits would extend into the historic property.

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A cross section drawing showing the proposed elevation of 106<sup>th</sup> Street with respect to the Flanagan House—or, at least, an elevation drawing showing the increase in elevation between the current street and the proposed, rebuilt street—would be helpful to our effort to assess the visual impact of the rebuilt roadway on the historic house.

We recall, as well, that the planting of a few trees between the rebuilt 106<sup>th</sup> Street and the Flanagan House property was discussed on September 19 and was generally thought to be beneficial in providing a limited, visual buffer between the house and traffic passing by. We would appreciate clarification as to whether those trees could be planted in the 106<sup>th</sup> Street right-of-way, as distinguished from the Flanagan House property, given their likely proximity to the pavement and to the overhead utility lines and in light of any clear zone restrictions that might be applicable.

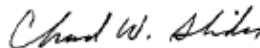
We would like to have these points clarified about the Flanagan House property boundary and its relationship to right-of-way that might need to be acquired, about the construction limits, about the increased elevation of the roadway, and about the prudence of planting trees in the right-of-way, before we comment further on the project's likely effects.

As we previously had commented in regard to the Indiana archaeological short report (Goldbach, 7/17/2013), based upon the submitted information and the documentation available to the staff of the Indiana SHPO, we have not identified any currently known archaeological resources listed in or eligible for inclusion in the National Register within the proposed project area. However, this identification is subject to the project activities remaining within areas disturbed by previous construction of a recent and non-historical nature. If archaeological deposits are encountered from the post-contact period, they will be evaluated regarding their eligibility for the National Register in consultation with the staff of the Indiana SHPO. Please contact our office if such deposits are encountered. The archaeological recording must be done in accordance with the Secretary of the Interior's "Standards and Guidelines for Archaeology and Historic Preservation" (48 F.R. 44716) and a report of the archaeological documentation must be submitted to our office for review and comment.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and -29) requires that the discovery be reported to the Department of Natural Resources within two (2) business days. In that event, please call (317) 232-1646. Be advised that adherence to Indiana Code 14-21-1-27 and -29 does not obviate the need to adhere to applicable federal statutes and regulations.

If you have questions about archaeological issues, please contact Wade T. Tharp at (317) 232-1650 or wtharp1@dnr.IN.gov. Questions about buildings or structures should be directed to John Carr at (317) 233-1949 or jcarr@dnr.IN.gov. In all future correspondence regarding the New Interchange Project at I-69 and 106<sup>th</sup> Street, please refer to DHPA No. 15147.

Very truly yours,



 Mitchell K. Zoll  
Deputy State Historic Preservation Officer

MKZ:JLC:jlc

David Cleveland, PE, PTOE  
October 4, 2013  
Page 3

cc: Lawrence Heli, PE, Federal Highway Administration, Indiana Division  
Patrick Carpenter, Indiana Department of Transportation  
Mary Kennedy, Indiana Department of Transportation  
Shaun Miller, Indiana Department of Transportation  
Melany Prather, Indiana Department of Transportation  
David Cleveland, PE, PTOE, Corradino LLC  
Candace Hudziak, H&H Associates, LLC  
Linda Weintraut, Ph.D., Weintraut & Associates, Inc.



## INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue  
Room N642  
Indianapolis, Indiana 46204

PHONE: (317) 233-2061  
FAX: (317) 233-4929

Michael R. Pence, Governor  
Karl B. Browning, Commissioner

October 9, 2014

Chad Slider  
Assistant Director, Environmental Review  
AND  
Paul Diebold  
Team Leader, Survey & Registration  
Division of Historic Preservation and Archaeology  
Staff of the Indiana State Historic Preservation Officer  
402 W. Washington St., Room W274  
Indianapolis, IN 46204

RE: Flanagan-Kincaid House, IHSSI No. 057-206-50019  
Des. No. 1298035, I-69 & 106<sup>th</sup> St. Interchange Project, Fishers, Delaware Township, Hamilton  
County, Indiana, DHPA No. 15147  
AND  
Des. Nos. 1383332 & 1383336, Added Travel Lanes on I-69 from 106<sup>th</sup> St. to SR 13, Delaware, Fall  
Creek & Wayne Townships, Hamilton County, and Green Township, Madison County, Indiana,  
DHPA No. 16485

Dear Mr. Slider and Mr. Diebold,

As you are probably aware, the structure known as the Flanagan House or the Kincaid House (Indiana Historic Sites & Structures Inventory [IHSSI] No. 057-206-50019) in Hamilton County was recently moved to a new location on October 4, 2014 (See <http://www.indystar.com/picture-gallery/news/local/hamilton-county/2014/10/04/moving-the-250-ton-153-year-old-kincaid-house/16717043/>). This house fell within the Area of Potential Effects (APE) for both of the above-mentioned projects in its original location. During the consultation for these projects, your office concurred with the recommendation that the Flanagan House is eligible for inclusion in the National Register of Historic Places (National Register) under Criterion C. The following excerpt from the historic properties report (HPR) for Des. No. 1298035 provides the justification for its eligibility (H&H Associates, 8/16/13):

The Flanagan House is a good example of a mid-1800s I-house with some high-styled Italianate features. Due to encroaching suburban growth in Hamilton County, many such farmsteads have been lost to recent development and only a few similar examples remain in the county. The house has suffered from neglect and vandalism over many decades while it sat vacant that has caused the loss of the original front door and most interior features. Additionally, the house's original setting has been altered by the demolition of numerous outbuildings over time that has left only one small barn, as well as from the lack of landscaping that once included entrance walkways and a driveway entrance from E 106<sup>th</sup> Street, as well as many shade trees according to historic images of the property. The property once included 160 acres and was an active farm, and today it only retains about 1 acre in the middle of suburban residential and commercial growth. Recent attempts to stabilize the building have resulted in the loss of original windows with vinyl replacements and the addition of a second-story balcony that may be historically accurate but no historic images of the house found by the historian depict a balcony there. The

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house does retain its distinctive I-house floorplan, however. Despite its integrity loss, enough of the building's original materials and design remains to recommend it eligible for NRHP listing under Criterion C for its scarce architectural type in the area, as well as for being one of the oldest extant houses in Hamilton County.

The Flanagan House's new location, just over 0.25 mile to the north of its original location, continues to be located within the APEs for these projects. The purpose of this letter is to inquire as to your office's opinion on the continued eligibility of the Flanagan House since its relocation. It is the opinion of our office that in its new location the house continues to maintain the features that had been determined to make it National Register eligible. The house still retains its distinctive I-house floorplan and high-styled Italianate features. It maintains integrity of design, materials, and workmanship. Even in its original location, its integrity of setting, feeling, and association had been compromised due to the surrounding modern development and the loss of all but one of its outbuildings. Its new setting, very close in proximity and character to its previous setting, does not detract from the house's features that made it National Register eligible.

Per the National Register criteria for evaluation, ordinarily structures that have been moved from their original location shall not be considered eligible for the National Register. However, such properties will qualify if they are primarily significant for architectural value (Criterion Consideration b). The HPR excerpt above outlines how the Flanagan House's primary significance is for its architectural value as one of the few extant I-houses in Hamilton County. This remains to be the case. Therefore, our office thinks that the Flanagan House continues to be National Register eligible under Criterion C and is also now eligible under Criterion Consideration b.

We ask that you please review this letter and the enclosed mapping and photographs in order to provide us with your opinion on the National Register eligibility of the Flanagan House. Because the Added Travel Lanes project on I-69 is under a tight project schedule, we request your opinion on this matter as soon as possible so that the schedule is not hindered.

If you have any questions regarding this matter or if you need further information, please feel free to contact Ms. Mary Kennedy at 317-232-5215 or [mkennedy@indot.in.gov](mailto:mkennedy@indot.in.gov).

Sincerely,



Patrick Carpenter, Manager  
Cultural Resources Office  
Environmental Services

PAC/MEK/mek  
Enclosure

cc: ES project files

emc: Runfa Shi, INDOT Project Manager  
Anthony Jones, INDOT Project Manager  
David Cleveland, Corradino Group  
Candace Hudziak, H&H Associates  
Daniel Miller, Parsons  
Linda Weintraut, Weintraut & Associates

# Flanagan House IHSSI No. 057-206-50019

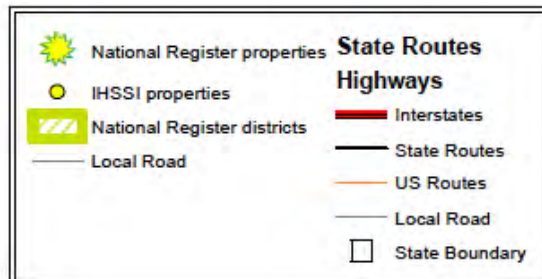


Scale 1:3,388

0.065 0.0325 0 0.065 Miles

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Sources: Non Orthophotography  
Data - Obtained from the State of Indiana Geographical Information Office Library  
Orthophotography - Obtained from Indiana Map Framework Data ([www.indianamap.org](http://www.indianamap.org))  
Map Projection: UTM Zone 16 N Map Datum: NAD83



Flanagan House  
IHSSI No. 057-206-50019



Scale 1:1,108

0.02 0.01 0 0.02 Miles

This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

Sources: Non Orthophotography  
Data - Obtained from the State of Indiana Geographical Information Office Library  
Orthophotography - Obtained from Indiana Map Framework Data ([www.indianamap.org](http://www.indianamap.org))  
Map Projection: UTM Zone 16 N Map Datum: NAD83





Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

# DNR

Indiana Department of Natural Resources

Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 • Indianapolis, IN 46204-2738  
Phone 317.232.1846 • Fax 317.232.0693 • [dhpa@dnr.in.gov](mailto:dhpa@dnr.in.gov) • [www.in.gov/dnr/historic](http://www.in.gov/dnr/historic)

Michael R. Pence, Governor  
Cameron F. Clark, Director



October 22, 2014

Mary Kennedy  
Architectural Historian/History Team Lead  
Cultural Resources Office  
Environmental Services  
100 N. Senate Ave., Room N642  
Indianapolis, IN 46201

Re: Flanagan-Kincaid House, IHSSI No. 057-206-50019  
Des. No. 1298035, DHPA No. 15147 and  
Des. Nos. 1383332 & 1383336, DHPA No. 16485

Dear Mary,

Per your request of October 9<sup>th</sup>, National Register staff has reevaluated the eligibility of the Flanagan-Kincaid House, following its relocation on October 4<sup>th</sup>. We appreciate the photos and documentation you attached to your letter and email. Several staff members have also viewed the building on its new site.

After some debate, we have reached the conclusion that the house no longer meets the National Register criteria. In particular, the siting and orientation of the house render it incapable of conveying its architectural significance.

Orientation of the main mass of the house in relationship to its intended viewer has long been understood as one of the key elements of vernacular architecture. Orientation and placement also correlate to several of the seven aspects of integrity used by the National Park Service to evaluate properties, namely; location, setting, feeling, and, to a degree, design. Examples of vernacular architecture like the Kincaid House convey their sense of time and place, in good measure, by their orientation. Placement of the main house on a traditional, mid-nineteenth century farm in Central Indiana is almost universally marked by orientation to the cardinal points of the compass. Additionally, the status of the house was typically conveyed by formal design of the front elevation, ornament, and placement of the front door in a highly visible location with relation to the main road visitors are likely to use.

It may be possible that a particular use might be aided by the placement the house now has. We believe, however, that our role is focused on the current situation. The house now faces and addresses a major man-made structure that has no relationship to its history. From a preservation point of view, we believe that this so compromises integrity of setting, location and feeling as to render the building ineligible for listing on the National Register of Historic Places.

We appreciate the opportunity to comment on the eligibility of the house. Please contact me if you should have any questions about our opinion.

Sincerely,

A handwritten signature in dark ink, appearing to read "Paul C. Diebold".

Paul C. Diebold  
Assistant Director of Preservation Services

copies: ER files.  
enclosures: none.

*The DNR mission: Protect, enhance, preserve and wisely use natural, cultural and recreational resources for the benefit of Indiana's citizens through professional leadership, management and education.*

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# **Appendix G**

## **Operational Adequacy Confirmation and Interchange Justification Report (body only)**

## David Cleveland

---

**To:** dcleveland@corradino.com  
**Subject:** FW: I-69 at 106th St Determination of Engineering and Operational Acceptability  
**Attachments:** RE: I-69 and 106th Street Interchange, Roundabout Geometry and Signing  
**Importance:** Low

**From:** [eryn.fletcher@dot.gov](mailto:eryn.fletcher@dot.gov) [<mailto:eryn.fletcher@dot.gov>]  
**Sent:** Friday, March 06, 2015 3:11 PM  
**To:** [rshi@indot.IN.gov](mailto:rshi@indot.IN.gov)  
**Cc:** Richardson, Jeromy; [Jay.DuMontelle@dot.gov](mailto:Jay.DuMontelle@dot.gov)  
**Subject:** [SPAM] I-69 at 106th St Determination of Engineering and Operational Acceptability  
**Importance:** Low

Dear Runfa,

As a follow-up to our conversation regarding the **1/16/15 Conditional Approval /Determination of Engineering and Operational Acceptability for the proposed interchange at 106<sup>th</sup> St.**, INDOT is meeting the conditions of the approval thru ongoing coordination with our office. Since 1/16/15, we have received, reviewed and commented on the revised geometrics and signing plan. Our review confirmed that the design is improved. The conditions in the letter will be fully satisfied upon review of the Stage 1 plans and completion of NEPA. At that time, we should be positioned to issue final approval of the new interstate access point (also known as IJ approval).

It was my intent to confirm our satisfaction with the progress to date in my email of 2/19/15 (attached). FHWA does not require additional submittals until Stage 1 design is complete. The next approval for the access point will be the final access approval.

Since this is a Project of Division Interest, we are requesting ongoing design coordination beyond the approval of the IJ. As we discussed last Friday, the division would like to have concurrent reviews of the Field Check plans and Stage 3 plans. If issues arise, please keep us advised and see us as a resource in the design of this unique interchange concept.

Please let me know if additional clarification is needed.

Regards,

Eryn MH Fletcher, PE

FHWA - Indiana Division Office

575 N Pennsylvania St w Indianapolis, IN

(317)-226-7489

# Interchange Justification Report

## New Interchange

106<sup>th</sup> Street and I-69 in Fishers, Hamilton County

Des. No. 1298035

Prepared For:



Federal Highway Administration

and



Indiana Department of Transportation

Prepared By:

United Consulting  
Corradino LLC



August 29, 2014

## EXECUTIVE SUMMARY

New interstate access is requested on I-69 for the construction of a new interchange at 106<sup>th</sup> Street and I-69 in Hamilton County, Indiana. The intent of this improvement is to provide direct access to the 106<sup>th</sup> Street area. Additional benefits include increased operational efficiency by relieving congestion at the existing adjacent interchanges. This report analyzes four interchange configurations in detail; Single Point Urban Interchange (SPUI), Tight Diamond Interchange (TDI), Roundabout Interchange, and Diverging Diamond Interchange (DDI). A comparison of the three interchange alternatives is illustrated in [Table ES-1](#). The preferred interchange alternative is the Roundabout Interchange.

Table ES-1 | Interchange Comparison

Criteria	Tight Diamond	SPUI	Roundabout	DDI
<b>Total Cost</b>	\$31.3 million	\$36.0 million	\$33.9 million	\$35.0 Million
<b>Right of Way Impacts</b>	9.0 acres	10.7 acres	9.5 acres	10.1 acres
<b>2035 Peak Hour Capacity Results (average delay)</b>	AM: 42.4 seconds PM: 45.5 seconds	AM: 33.3 seconds PM: 33.0 seconds	AM: 5.8 seconds PM: 28.7 seconds	AM East: 29.7 sec. AM West: 19.2 sec. PM East: 44.3 sec. PM West: 24.8 sec.
<b>24 Hour Operations</b>	Signal timings can be optimized during off-peak hours, but delay is unavoidable.	Signal timings can be optimized during off-peak hours, but delay is unavoidable.	Will operate with little to no delay off peak.	Signal timings can be optimized during off-peak hours, but delay is unavoidable.
<b>Future Expansion</b>	Bridge can be widened relatively easily in the future. Signal timings can be adjusted with changing traffic patterns.	Difficult and costly to expand the bridge.	Bridge can be widened relatively easily to provide third lane thru roundabout in the future.	Similar to SPUI, difficult and costly to expand the bridge.
<b>Driver Expectancy</b>	Common interchange configuration – high driver expectancy.	Not as common as traditional diamond; however, familiarity with nearby I-465/Allisonville Road interchange – medium driver expectancy.	Not a common interchange configuration; however, strong local familiarity with roundabouts and Keystone Parkway. 106 <sup>th</sup> Street is a roundabout corridor - medium driver expectancy.	No DDI interchanges exist in this area; however, DDI will be constructed along I-65 south of Greenwood, IN.

The proposed interchange will support the continued growth of Fishers and Hamilton County. As of 2010, the total Fishers population was 76,794, which has grown 102.97% since 2000. The existing interstate and local roadway network cannot satisfactorily address the traffic growth and economic development needs of the study area. All reasonable alternatives were considered including: no-build, roadway system improvements, interchange configuration alternatives, and transportation system management strategies. The preferred Roundabout Interchange alternative has no significant adverse impact on safety or operations of I-69 or the local roadway system. To the contrary, the result of the operational analysis shows construction of the proposed interchange enhances safety and operations of these highway facilities.

The proposed interchange at 106<sup>th</sup> Street satisfies each of FHWA's eight policy points for new access onto the interstate system. The preferred alternative was developed in conjunction with the National Environmental Policy Act (NEPA) process and an Environmental Assessment is concurrently being prepared for the project.

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## 1.0 INTRODUCTION

---

This Interchange Justification (IJ) Report documents the analysis and selection process for the request of a new access point onto Interstate 69 (I-69) at 106<sup>th</sup> Street in Fishers, Indiana. The IJ report fully addresses the eight Federal Highway Administration (FHWA) Policy Points outlined in the Federal Register of August 27, 2009, and has been prepared in accordance with Section 48-1.03 of the INDOT Design Manual.

The analysis conducted and described in this IJ report follows the procedures outlined in the Project Framework Document previously submitted and approved through FHWA.

### *1.1 Purpose and Need*

This project is being developed by the Indiana Department of Transportation (INDOT), with active support and sponsorship from 1) the Town of Fishers and 2) Hamilton County. Currently, there is no access to or from I-69 at 106<sup>th</sup> Street. Access at this location is needed to support the existing traffic volumes as well as the anticipated future growth. Motorists currently use the I-69 interchanges at 96<sup>th</sup> Street or 116<sup>th</sup> Street to gain access to the 106<sup>th</sup> Street area; however these existing interchanges currently experience congestion and delay during peak periods, and capacity is anticipated to deteriorate more over time. The I-69 interchanges at 96<sup>th</sup> Street and 116<sup>th</sup> Street are not easily expandable since, for critical movements, they currently have dual right and left turn lanes on the ramps at the signalized ramp junctions, as well as dual lane left turn lanes on the bridges. Further expansion would result in significant impacts and cost.

The Town of Fishers has seen tremendous growth over the past three decades and is currently the 8<sup>th</sup> most populated community in Indiana. U.S. Census data reports that Fishers had an approximate population of 2,000 in 1980, 7,200 in 1990, and 77,000 in 2010. Growth has been both residential and commercial in nature. The area near the proposed 106<sup>th</sup> Street interchange, and in particular the existing platted commercial office parks along the east side of I-69 between 96<sup>th</sup> Street and 116<sup>th</sup> Street, are currently experiencing development activity.

## 1.2 Project Location

Figure 1-1 illustrates the project location at 106<sup>th</sup> Street along I-69 within Fishers, northeast of Indianapolis, Indiana.

Figure 1-1 | Location Map

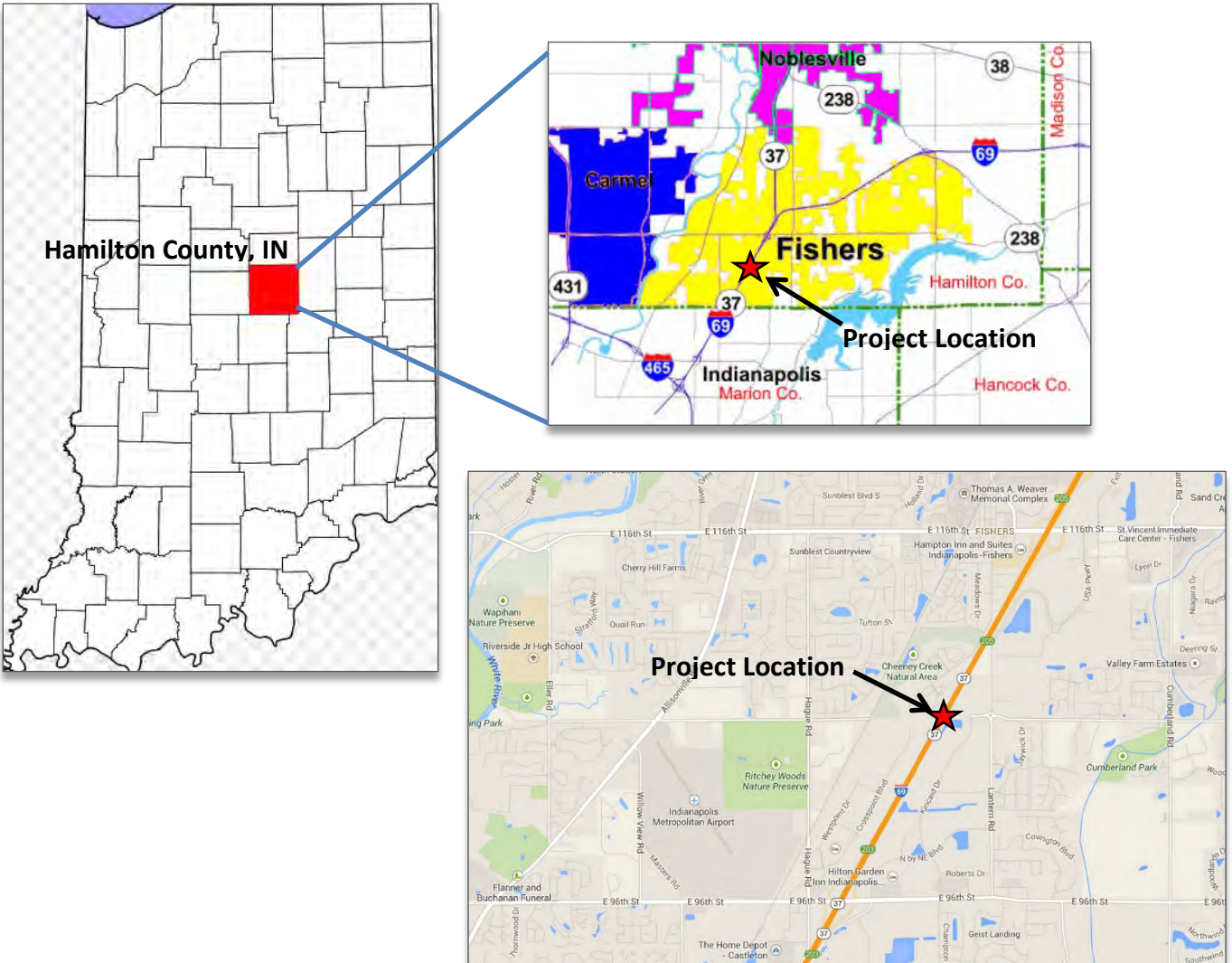


Figure 1-2 provides an aerial view of the immediate project at 106<sup>th</sup> Street and I-69.

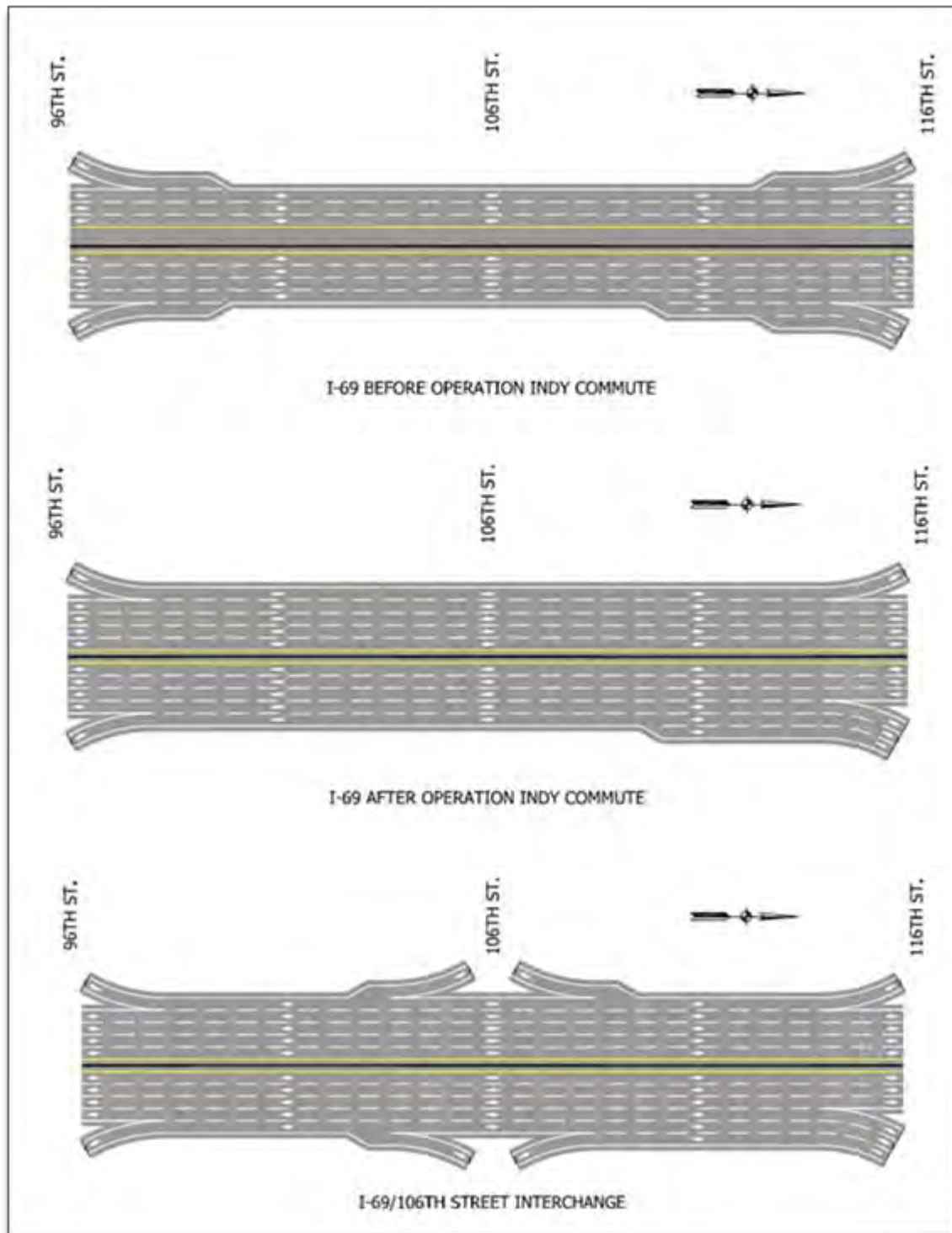
Figure 1-2 | Aerial View of Project Area



### 1.3 Operation Indy Commute

The Operation Indy Commute (OIC) project is currently under construction through the subject project area and is on schedule to be completed in 2014. All base year travel demand modeling and traffic capacity analysis will include the completed OIC project in the base year existing conditions. The OIC project adds a thru lane in the median for southbound I-69 and adds an auxiliary lane between the 82<sup>nd</sup> Street and 116<sup>th</sup> Street interchanges for both northbound and southbound I-69. OIC also constructs braid ramp bridge structures at the I-69/SR 37 interchange, north of 116<sup>th</sup> Street, which is anticipated to provide significant benefit for motorists within the study area. INDOT is constructing OIC to reduce recurring commuting “bottlenecks” along I-69 between the I-465/I-69 interchange and the I-69/SR 37 interchange. Figure 1-3 is a schematic of the proposed OIC improvements within the immediate project area.

Figure 1-3 | Operation Indy Commute Schematic Improvements



#### 1.4 Area of Influence

The study area for the project was agreed upon during a November 7, 2013 coordination meeting between INDOT and FHWA (Figure 1-4). The study area in the immediate vicinity of the proposed 106<sup>th</sup> Street interchange is bounded by 96<sup>th</sup> Street to the south, Allisonville Road to the west, 126<sup>th</sup> Street to the north, and Cumberland Road to the east. This provides adequate coverage to perform detailed capacity analysis for 1) the 106<sup>th</sup> Street interchange, 2) one interchange to each side of 106<sup>th</sup> Street (96<sup>th</sup> Street and 116<sup>th</sup> Street), and 3) one adjacent signalized intersection or roundabout to each side of the three previously mentioned interchange locations.

Due to the close spacing of the interchanges along I-69 from I-465/I-69 interchange to the I-69/SR 37 interchange, the study area extends south to include the I-465/I-69 interchange. The portion of the study area along I-69 between I-465 and 96<sup>th</sup> Street more closely “hugs” the I-69 corridor so that any potential effects that the proposed interchange at 106<sup>th</sup> Street may have on the I-69 corridor, and interchanges between I-465 and 96<sup>th</sup> Street, could be analyzed. The proposed interchange at 106<sup>th</sup> Street is not anticipated to have any significant impacts on the local network between I-465 and 96<sup>th</sup> Street; therefore, the local network was not analyzed for this area.

##### 1.4.1 Interstate 69

The existing I-69 typical cross section (post Operation Indy Commute) in each direction consists of: four 12-foot through lanes; a 12-foot auxiliary lane for entrance/exit to 96<sup>th</sup> and 116<sup>th</sup> streets, and to/from SR 37; a 10-foot paved outside shoulder; and, a 5-foot paved median shoulder. The posted speed of I-69 in the project area is 65 mph.

##### 1.4.2 106<sup>th</sup> Street

Currently 106<sup>th</sup> Street bridges over I-69 with no access to I-69. It is a two-lane road with 11-foot wide lanes and four-foot wide (2' paved) shoulders, and it is classified as a Minor Arterial with a posted speed limit of 40 mph. No pedestrian facilities exist along 106<sup>th</sup> Street within the project area. There is a signalized intersection with left-turn lanes at Crosspoint Boulevard/Lantern Road (west project limit) and a full two-lane roundabout at USA Parkway/Lantern Road (east project limit). Lantern Road used to be a continuous north-south route, but continuous access was cut by I-69 and so now Lantern Road exists on both sides of the interstate. In this report, the west intersection is referred to as Crosspoint Boulevard and the east roundabout is referred to as USA Parkway. The Town of Fishers has developed plans to construct a full two-lane roundabout at Crosspoint Boulevard as well.

Figure 1-4 | Project Study Area



#### 1.4.3 116<sup>th</sup> Street

116<sup>th</sup> Street is the closest interchange to the north of the proposed Interchange at 106<sup>th</sup> Street. Where 116<sup>th</sup> Street crosses I-69, it is a 4 lane road (2 lanes in each direction) with 11-foot wide lanes, separated by a variable width raised concrete median. The west leg of the west ramp junction is separated by a grass median while the east leg of the east ramp junction is separated by a 4' wide raised concrete median. A pedestrian sidewalk exists on the north side of the road within the interchange, and extends to Lantern Road to the west and USA Parkway to the east. A narrow 2' wide paved shoulder exists along the south side of 116<sup>th</sup> Street. The roadway has a posted speed limit of 40 mph.

#### 1.4.4 96<sup>th</sup> Street

96<sup>th</sup> Street is the closest interchange to the south of the proposed Interchange at 106<sup>th</sup> Street. Where 96<sup>th</sup> Street crosses I-69, it is a 4 lane road (2 lanes in each direction) with 11-foot wide lanes, separated by a raised concrete median. A pedestrian sidewalk exists on both sides of the road within the interchange, and extends to Hague Road west junction to the west and Hague Road east junction to the east. The roadway has a posted speed limit of 40 mph.

#### 1.4.5 82<sup>nd</sup> Street

The 82<sup>nd</sup> Street interchange is located approximately 2.5 miles south of 106<sup>th</sup> Street. I-69 bridges over 82<sup>nd</sup> Street at this interchange. The typical cross section of 82<sup>nd</sup> Street consists of three 11-foot wide lanes in each direction separated by a raised concrete median. A 2' wide curb with closed drainage exists along both sides of 82<sup>nd</sup> Street with a pedestrian sidewalk that exists on the south side separated by a grass strip.

#### 1.4.6 Interstate 465

The existing typical cross section along I-465 in this area consists of three 12-foot wide lanes in each direction along with 10' inside and 16' outside paved shoulders. A set of twin bridge structures carry I-465 over I-69.

#### 1.4.7 Intersections

The impacts of the proposed project on several area intersections will be studied. A brief description and aerial view of each intersection is provided below. [Table 1-1](#) represents the existing conditions at the signalized intersections at each interchange in the primary study area, and adjacent signalized intersections to each interchange.

Table 1-1 | Intersections

96<sup>th</sup> Street Interchange



- Located south of the proposed 106<sup>th</sup> Street interchange
- Standard diamond interchange
- Fully developed
- High traffic volumes particularly in PM peak

96th Street & Corporation Drive



- Located West of the I-69 – 96th St. Interchange.
- 3 Thru lanes East and West, with 1 left and one right turn each.
- 2 Thru lanes north and south, 1 left turn and 1 right turn each.

Table 1-1 | Intersections (continued)

96th Street & I-69 SB Ramp



- Located on the West side of the interchange.
- SB off ramp has 2 left and 2 right turn lanes
- SB on ramp has 2 lanes that merge into 1
- EB has 3 thru lanes & 1 left turn lane
- West bound has 2 thru and 2 left lanes

96th Street & I-69 NB Ramp



- Located on the East side of the interchange
- NB off ramp has 2 left and 2 right turn lanes
- NB on ramp has 2 lanes that merge into 1
- EB has 3 thru lanes, 1 left turn lane
- West bound has 2 thru and 2 left lanes

Table 1-1 | Intersections (continued)

96th St & Hague Rd



- Located on the East side of the interchange
- EB has 1 left, 3 thru and 1 right turn lane
- WB has 1 left, 3 thru and 1 thru/right turn lane
- NB has 3 left, 1 thru and 1 right turn lane
- SB has 1 right, 1 thru and 1 left turn lane

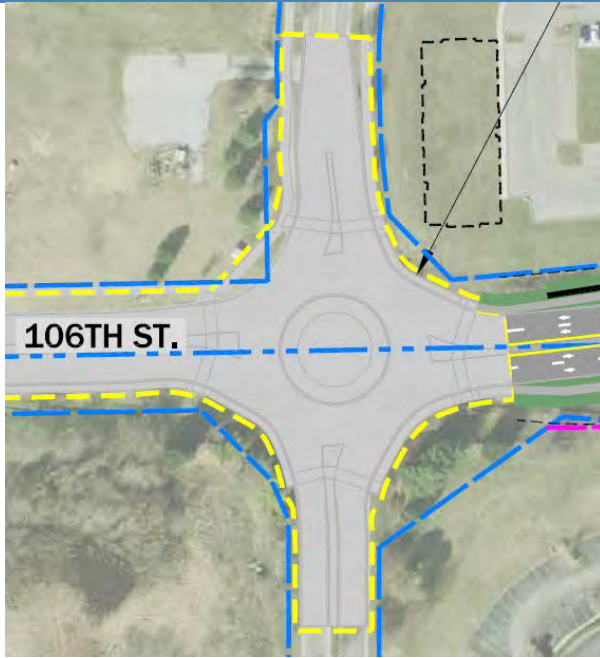
106th Street Interchange



- Proposed to be constructed
- One lane each direction along 106th
- Planned to be widened with proposed interchange

Table 1-1 | Intersections (continued)

106th Street & Crosspoint Blvd



- Located west of I-69
- Currently being reconstructed as a two lane roundabout.
- Two lanes entering and exiting.
- Transitions to one-lane each direction beyond roundabout

106th Street & USA Pkwy



- Located east of I-69
- Recently constructed two-lane roundabout
- Two-lanes entering and exiting
- Transitions to one-lane each direction beyond roundabout

Table 1-1 | Intersections (continued)

116th Street Interchange



- Located north of the proposed 106th Street interchange
- Jug handle interchange
- Originally built in a rural area now suburban
- Built up to the west
- High traffic volumes particularly in PM peak

116th Street & Commercial Drive



- Located on the West side of the interchange
- EB has 1 left and 2 thru lanes
- WB has 1 left, 2 thru and 1 right turn lane
- NB has 1 left and 1 shared thru / right turn lane
- SB has 2 left and 1 shared thru / right turn lane

Table 1-1 | Intersections (continued)

116th Street & SB Ramp




- Located on the West side of the interchange
- SB off ramp has 1 left, 1 left/thru, and 1 right turn lane
- SB on ramp has 2 lanes that merge into 1
- EB has 2 thru lanes and 1 right turn lane
- WB has 2 thru and 2 left lanes
- Sidewalk along north side

116th Street & NB Ramp



- Located on the East side of the interchange
- NB has 2 left and 1 right turn lane
- EB has 2 thru and 1 right turn lane
- WB has 2 thru and 1 left turn lane

Table 1-1 | Intersections (continued)

116th Street & USA Pkwy	
	<ul style="list-style-type: none"> <li>■ Located on the West side of the interchange</li> <li>■ NB has 1 shared left/thru/right turn lane</li> <li>■ EB has 1 left, 2 thru and 1 right turn lane</li> <li>■ WB has 2 thru and 1 left turn lane</li> <li>■ The north leg of the intersection is an entrance/exit to a business commercial area.</li> </ul>

### 1.5 Project Schedule and Funding

Key milestone dates for the project include the following.

- FHWA Engineering and Operational Acceptability: July 2014
- NEPA Approval: April 2015
- INDOT Letting: March 2016

The project is federally funded. Hamilton County is committed to providing \$2,000,000 and the Town of Fishers will provide \$8,000,000 of the project cost.

### 1.6 Alternatives Considered

The No-Build alternative was considered. An alternative that looks at the possibility of a collector-distributor (CD) through the interchange area was also analyzed and is discussed later in Section 4.3.4 of this report. The following four interchange configurations were analyzed; however, the DDI was eliminated prior to detailed analysis. See [Appendix A](#) for schematic diagrams of:

1. Tight Diamond (TD)
2. Single Point Urban Interchange (SPUI)
3. Roundabout Interchange
4. Diverging Diamond Interchange (DDI)

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## 2.0 METHODOLOGY

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### 2.1 *Travel Demand Modeling*

Brief summaries of the methodologies for traffic data collection, travel demand modeling, and traffic capacity analysis are provided in the following sections. For a more in-depth discussion of these methodologies, refer to [Appendix G: Technical Memorandum – Traffic Modeling Methodology Report](#).

Because no interchange currently exists at 106<sup>th</sup> Street, it is not possible to count existing traffic and turning movements at the interchange and simply apply an assumed growth factor to estimate design year traffic. For this situation, where no interchange currently exists, the best tool for estimating the traffic that will be attracted to the interchange and the overall traffic patterns for the study area is a travel demand model. The team used the most current version of the Indianapolis Metropolitan Planning Organization (MPO) TransCAD travel demand model and further refined the study area previously described.

The Indianapolis MPO travel demand model has growth built into it based on overall socio-economic data for Hamilton County; however, the model does not specifically look at vacant parcels and likely future development. This is why the land use analysis, described below, was performed. The team took the land use analysis data and refined the housing and employment inputs in the model for the area surrounding the proposed I-69/106<sup>th</sup> Street interchange. This did not “double-count” growth, but rather replaced the less detailed, less site-specific growth in the Indianapolis MPO travel demand model, with factors that determine growth that are more realistic for this location.

The overall travel demand modeling methodology is comprised of three major components:

- Travel Demand Model
- Traffic Simulation Model
- Capacity Analysis

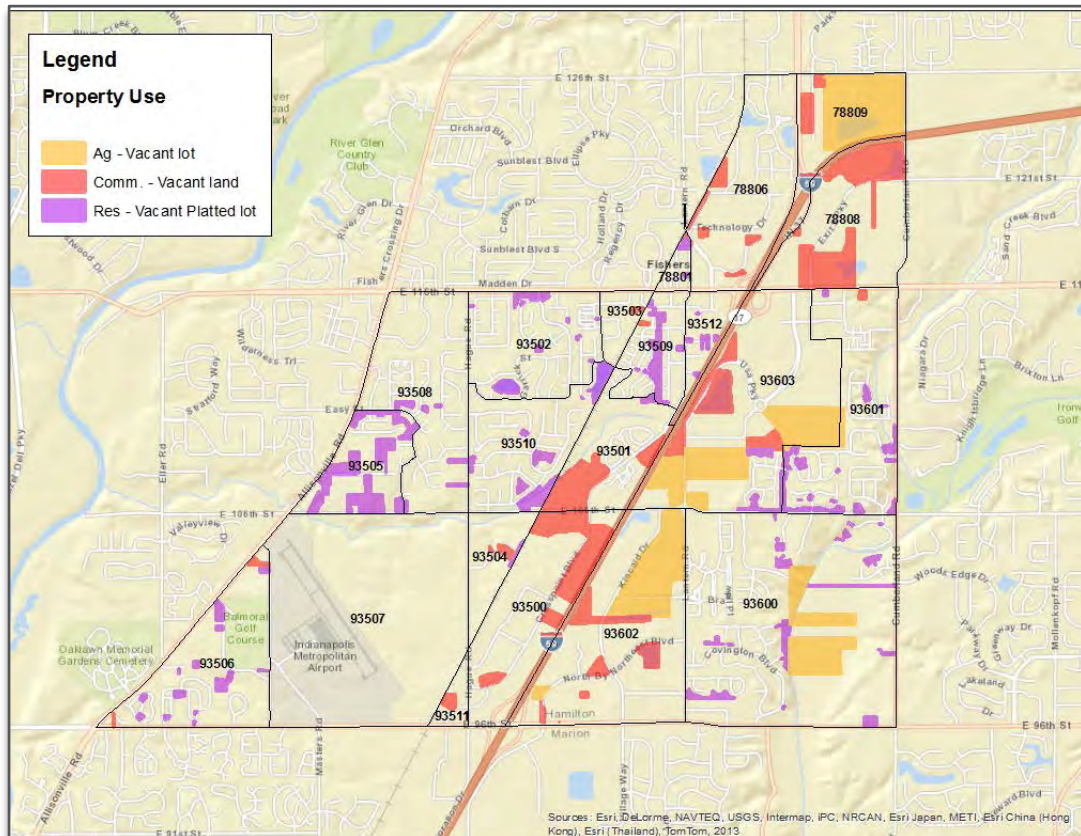
The first two components work together for travel demand and traffic volume forecasting purposes and then feed resulting traffic volume numbers to the third component for capacity analysis. Each of the three major model components, along with the study area coverage, model calibration and forecasting methods, are discussed in more detail in [Appendix G](#).

### 2.2 *Land Use*

Land Use analysis has been performed to provide inputs into the travel demand model for realistic growth projections for the project. A screening process was performed to identify developable parcels. The Town of Fishers provided GIS shape files including zoning, floodplains, and aerial photography for use in the screening process. The first step in the screening process was to identify vacant parcels in the zoning shape file. The next step was to identify planned urban development (PUD) parcels in the zoning shape file. Aerial photography was used to verify the status of all parcels. Any area within a floodplain was assumed undevelopable. Small parcels that serve as utility easements, driveways, etc. were assumed undevelopable. Protected parcel zonings, including open space, were assumed undevelopable. The Town of Fishers Downtown Illustrative Master Plan includes specific plans for development that were incorporated in the analysis. Vacant parcels were then assumed to develop with similar uses and densities as the existing development. For example, the vacant ground in the southeast quadrant of the

proposed I-69/106<sup>th</sup> Street interchange was assumed to develop with 3-story office buildings, with the same proportion of parking, infrastructure, storm water detention, etc., similar to the existing development on that site. Vacant parcels in residential areas were assumed to develop with residential with similar densities. [Figure 2-1](#) illustrates the type of information used for the analysis. After review, the Town of Fishers concurs with the land use forecasting and methodology and their letter of concurrence is attached in [Appendix G](#).

Figure 2-1 | Vacant Lots

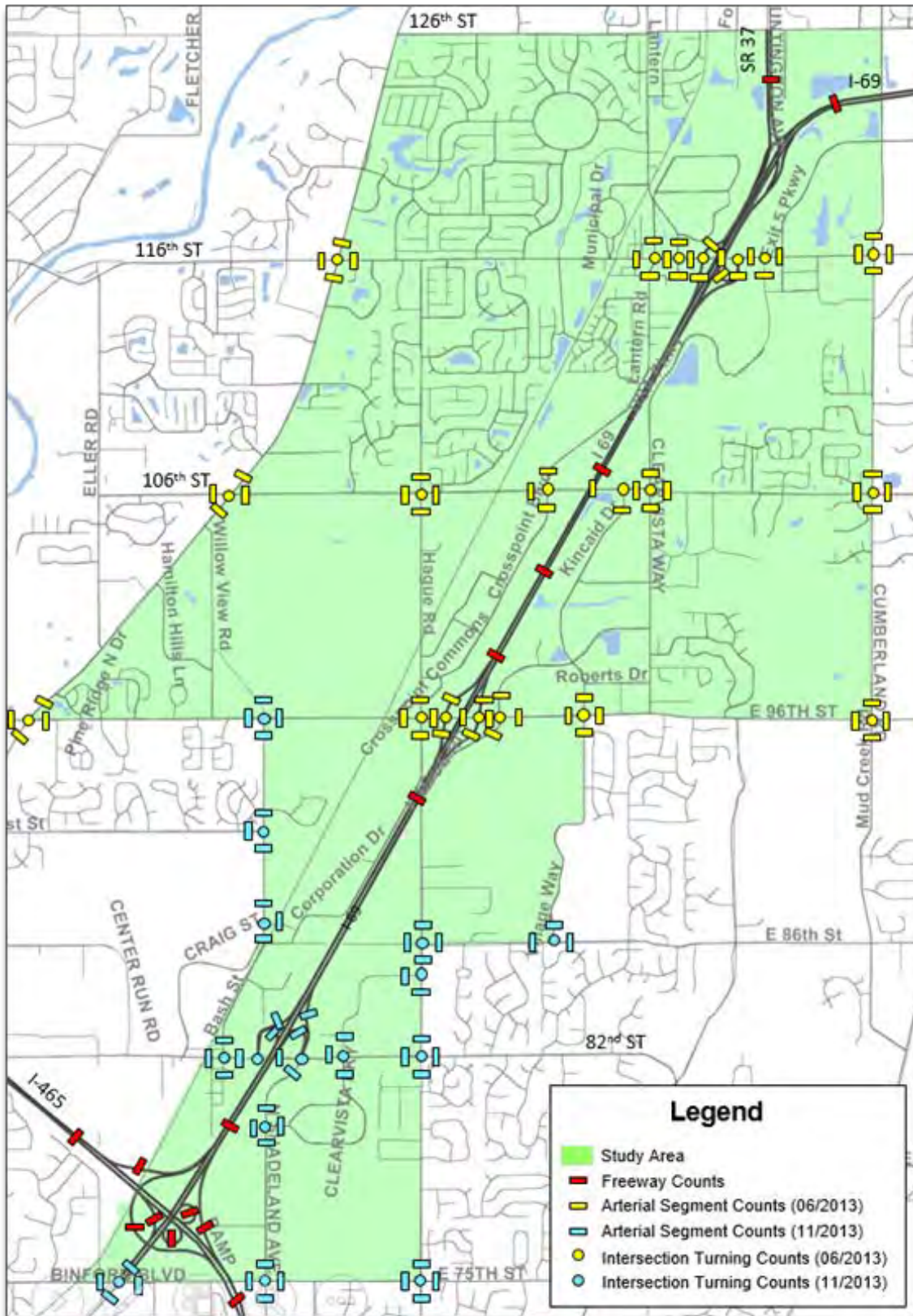


Source: Town of Fishers Zoning GIS Shape file, Indiana State Travel Demand Model TAZ

### 2.3 Traffic Counts

The travel demand model is a tool for determining the project's traffic data and was calibrated to the real world to make sure that the results are realistic. Traffic turning movement counts were taken at various intersections throughout the study area as shown in [Figure 2-2](#). These counts were used to calibrate the model. Speed data associated with these counts were used as a secondary measure of effectiveness in the calibration effort. Traffic data and associated speed data for mainline freeway segments were provided by the INDOT Traffic Management Center (TMC). Metrics for how well the model performs are included in the IJ Study ([Appendix G](#)).

Figure 2-2 | Traffic Count Location



## 2.4 Capacity Analysis

Capacity analysis was performed using Highway Capacity Software (HCS) 2010 for operations associated with mainline I-69, such as freeway segment capacity and ramp merge, diverge, and weaving. SIDRA software was used for roundabouts. These software packages are accepted by INDOT and FHWA for these types of applications.

I-69 analysis, including mainline, ramp merges, ramp diverges, and weaving were performed at, between, and within all interchanges from the I-465/I-69 interchange to the I-69/SR 37 interchange, including the proposed 106<sup>th</sup> Street interchange, via HCS software. Analysis of signalized ramp junctions was performed for the I-69 interchanges at 82<sup>nd</sup> Street, 96<sup>th</sup> Street, and 116<sup>th</sup> Street using Synchro 7 software. The ramp junctions for the proposed 106<sup>th</sup> Street interchange were analyzed via Synchro 7 for interchange alternatives incorporating signalized intersections and SIDRA for alternatives incorporating roundabouts for ramp junctions. Synchro 7 and/or SIDRA software was used to analyze the adjacent signalized intersection or roundabout to each side of the I-69 interchanges with 96<sup>th</sup> Street and 116<sup>th</sup> Street, as well as the proposed I-69/106<sup>th</sup> Street interchange.

All of the analysis locations discussed in the previous paragraph were analyzed for two scenarios, the “no-build 106<sup>th</sup> Street interchange” and the “build 106<sup>th</sup> Street interchange.” Each of these no-build and build options was run for the analysis years and the peak periods described later in this document.

## 2.5 Safety

A safety analysis was performed to evaluate the proposed interchange's effect on safety. This analysis included a review of historic crash information as well as a comparison of alternatives for safety performance of both the freeway and local streets. The team used 3-years' worth of crash data collected from the Automated Reporting Information Exchange System (ARIES). Crashes were geo-coded and plotted in GIS so that crash patterns, could be determined.

## 2.6 Analysis Years

Traffic capacity analysis was prepared for the “open to traffic” year, 5 years following open to traffic, and 20 years following open to traffic. The anticipated open to traffic date is 2016, which would have resulted in analysis years of 2016, 2021, and 2036. However, the Indianapolis MPO model has future year information for 2035. Because of this, the team used analysis years of 2015, 2020, and 2035. Capacity analysis at AM and PM peak hours was performed for the analysis years. There is no defined mid-day peak for the project area; therefore, no mid-day peak analysis was performed.

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### 3.0 PRELIMINARY ALTERNATIVES

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#### 3.1 *No-Build*

The No-Build Alternative includes all existing roads for the 2015, 2020, and 2035 scenarios, but with no interchange geometric improvements at 106<sup>th</sup> Street. This alternative serves as a baseline for comparison for build alternatives. For a build alternative to be selected, it must show an improvement over the no-build scenario and fulfill the purpose of the project.

#### 3.2 *TSM Methods*

The purpose and need of the project is to provide improved access to the 106<sup>th</sup> Street area, with a side benefit of alleviating traffic congestion at the upstream 116<sup>th</sup> Street and downstream 96<sup>th</sup> Street interchanges. In general, transportation system improvements will not satisfy this need. The following transportation systems management (TSM) methods were evaluated, and expanded upon in [Section 4.2, Policy Point #2](#).

- High Occupancy Vehicle Lanes (HOV);
- Ramp Metering;
- Mass Transit; and,
- Geometric Design.

#### 3.3 *Tight Diamond Interchange*

When evaluating different interchange alternative types, only urban interchanges were evaluated due to right-of-way constraints. This variant of the standard diamond interchange brings the ramp terminals together to reduce the right-of-way impact. This causes the two signals to operate essentially as one signal. This compression does not allow for nested left-turn bays; therefore additional lanes are required on the bridge.

##### *Advantages:*

- Leaves a small footprint;
- Utilizes simple bridge structure;
- All exits from the interstate made before reaching the 106<sup>th</sup> Street bridge;
- Allows for closer outer road spacing; and,
- Lowers cost, due to reduced right-of-way and limited outer road reconstruction.

##### *Disadvantages:*

- Cannot re-use existing bridge;
- Creates a wide bridge;
- Requires bridge widening to accommodate higher traffic volumes; and,
- Does not provide the unique gateway entrance desired by Town.

### 3.4 *Single Point Urban Interchange (SPUI)*

The Single Point Urban Interchange (SPUI) improves traffic operations over the standard diamond interchange by combining the ramp terminal signals into a single signal. All left-turning movements are completed at this signal. It is recommended that SPUIs be built with dual left-turn lanes on the cross road even if this is not warranted by current traffic. This is due to the difficulty in expanding on the complex bridge required for a crossroad-over SPUI. In general, the SPUI requires less right-of-way than a standard diamond interchange.

#### Advantages:

- Creates an efficient single signal;
- Utilizes Right turns with free-flow movements;
- Allows all exits from the interstate to be made before reaching the 106<sup>th</sup> Street bridge;
- Increases capacity, decreases delay over standard diamond interchange; and,
- Allows for tighter outer road spacing.

#### Disadvantages:

- Cannot re-use existing bridge;
- Creates a large, complex bridge structure;
- Widens intersection and reduces free-flow movements;
- Produces high cost; and,
- Does not provide the unique gateway entrance desired by Town.

### 3.5 *Roundabout Interchange*

Roundabouts improve the travel time over all interchange alternatives by creating continuous flow of traffic. Roundabouts work well in urban areas due to decreased delay and queuing.

#### Advantages:

- Provides the unique gateway entrance desired by Town;
- Creates an efficient interchange without traffic signal;
- Improves safety;
- Less severe collisions;
- Fewer conflict points due to central splitter island;
- Pedestrians cross only one direction of travel at a time;
- Eliminates right angle and head on collisions; and,
- Low construction costs

#### Disadvantages:

- Cannot re-use existing bridge;
- Increases pedestrian delay; and,
- May require wider eastbound bridge in future.

### 3.6 Diverging Diamond Interchange

The Diverging Diamond Interchange (DDI), also known as a Double Crossover Diamond Interchange, is a new interchange form in Indiana. A DDI is currently being designed for the interchange of I-65 & Worthsville Road near Greenwood, Indiana, and a DDI has been conceptually designed for the SR 265 and SR 62 interchange as part of the Ohio River Bridges Project. As of the writing of this report, no DDIs are operating in Indiana.

Drivers approach the interchange as normal, but then cross to the left-hand side of the bridge at a two-phase signal at either end of the bridge. By having drivers cross-over to drive on the left-hand side, this allows left-turn movements to be made without the need for a left-turn bay or signal. One typical advantage of a DDI is a re-use of the existing bridge for one direction of traffic. However, because the new interchange will span a wider footprint than the existing condition, the existing bridge must be removed, eliminating this advantage.

#### Advantages:

- Establishes efficient two phase signals;
- All exits from the interstate are made before reaching the 106<sup>th</sup> Street bridge;
- Increases capacity, decreases delay over standard diamond interchange;
- Can accommodate larger number of left turns;
- Creates fewer conflict points than standard diamond;
- Combines lanes for left-turn and through movements, thus narrowing bridge structure; and,
- Provides controlled pedestrian crossings by creating signal controls for all turning movements.

#### Disadvantages:

- Cannot re-use existing bridge;
- Does not provide the unique gateway entrance desired by Town;
- Counterintuitive for drivers;
- Lower speed for through movements on 106<sup>th</sup> Street; and,
- Large footprint due to the ramp geometry at 106<sup>th</sup> Street and the need to push ramps away from I-69; and,
- High construction costs.

This alternative was considered, but eventually eliminated after preliminary analysis confirmed that the DDI had similar cost and right-of-way impacts as the SPUI, but did not provide as much traffic capacity. The Town of Fishers, a major project stakeholder, recommended elimination of the DDI from further consideration due to driver expectancy issues and the desire to provide a gateway entrance to the Town.

### 3.7 Safety

A safety analysis was performed to evaluate the proposed interchanges' effect on safety. Historic crash data for I-465, I-69, and SR 37 within the study area was collected and reviewed in accordance with the Indiana Strategic Highway Safety Plan. Between 2010 and 2012, 268 crashes occurred along I-465 mainline, 1,211 crashes occurred along I-69 mainline, and 109 crashes occurred along SR 37 mainline within the study area. [Table 3-1](#) summarizes these crashes by location and provides a breakdown of crash severity and crash type. This safety analysis is based on crash data provided by INDOT which was retrieved from ARIES.

Table 3-1 | Crash Summary 2010-2012 (Crash Location and Severity)

Location	Off-Road			Rear End			Side Swipe			Head On			Right Angle/Turn			Other/Unknown			Total	
	PD	PI	F	PD	PI	F	PD	PI	F	PD	PI	F	PD	PI	F	PD	PI	F		
I-465 Mainline	19	11	0	108	17	0	65	8	0	9	2	0	5	3	0	15	6	0	268	12%
I-69 Mainline	38	29	0	662	116	0	178	25	0	30	12	0	27	16	0	62	16	0	1211	54%
82nd St Interchange	1	1	0	86	18	0	23	3	0	1	2	0	12	4	0	32	7	0	190	8%
96th St Interchange	1	0	0	114	20	0	50	2	0	6	0	0	40	14	0	37	11	0	295	13%
106th St	3	2	0	7	2	0	7	0	0	1	0	0	7	1	0	8	2	0	40	2%
116th St Interchange	1	0	0	73	6	0	12	0	0	2	0	0	6	1	0	35	1	0	137	6%
US 37 Mainline	2	0	0	67	15	0	9	0	0	2	1	0	4	2	0	4	3	0	109	5%
<b>Total</b>	<b>65</b>	<b>43</b>	<b>0</b>	<b>1117</b>	<b>194</b>	<b>0</b>	<b>344</b>	<b>38</b>	<b>0</b>	<b>51</b>	<b>17</b>	<b>0</b>	<b>101</b>	<b>41</b>	<b>0</b>	<b>193</b>	<b>46</b>	<b>0</b>	<b>2250</b>	<b>100%</b>
<b>Percentage</b>	<b>5%</b>			<b>58%</b>			<b>17%</b>			<b>3%</b>			<b>6%</b>			<b>11%</b>			<b>100%</b>	

PD = Property Damage

PI = Personal Injury

F = Fatality

Table 3-1 shows that 54 percent of the crashes occurred along the I-69 mainline, compared to the next highest amount on a mainline which occurred along I-465 at 12 percent, and the highest number of crashes at an interchange was at 96<sup>th</sup> Street with 13 percent. Over half of the accidents that occurred in the study area were rear end crashes with 58 percent. The next highest accident type was side swipe crashes at 17 percent. The higher frequency of rear end crashes along I-69 is likely due to high traffic volumes and congestion. Side swipe crashes are typically caused by improper lane changes that typically occur when vehicles are entering or exiting the interstate. The low crash rate at 106<sup>th</sup> street is due to no interchange with on and off ramps present.

Based on the primary cause reported for each crash along with pavement and daylight conditions, an analysis has been made on the crashes and the results are included in Table 3-2.

Table 3-2 | Crash Summary 2010-2012 (Pavement and Daylight Conditions)

	Off-Road		Rear End		Side Swipe		Head On		Right Angle/Turn		Other/Unknown		Total	
Dry Pavement	64	59%	1086	83%	316	83%	47	69%	100	70%	175	73%	1788	79%
Wet/Ice/Snow/Water	44	41%	225	17%	66	17%	21	31%	42	30%	64	27%	462	21%
<b>Total</b>	<b>108</b>	<b>100%</b>	<b>1311</b>	<b>100%</b>	<b>382</b>	<b>100%</b>	<b>68</b>	<b>100%</b>	<b>142</b>	<b>100%</b>	<b>239</b>	<b>100%</b>	<b>2250</b>	<b>100%</b>
Daylight	60	56%	1053	80%	288	75%	34	50%	112	79%	161	67%	1708	76%
Dark/Dawn/Dusk	48	44%	258	20%	94	25%	34	50%	30	21%	78	33%	542	24%
<b>Total</b>	<b>108</b>	<b>100%</b>	<b>1311</b>	<b>100%</b>	<b>382</b>	<b>100%</b>	<b>68</b>	<b>100%</b>	<b>142</b>	<b>100%</b>	<b>239</b>	<b>100%</b>	<b>2250</b>	<b>100%</b>

Over 75 percent of all crashes took place during dry, daylight conditions, which is typical for statewide averages since the majority of days are dry and the majority of traffic occurs during daylight hours. As previously mentioned, rear end crashes were the most common type of crash at 58 percent, much higher than the second most frequent crash type, sideswipe, at 17 percent. The primary cause listed in the INDOT provided crash data for the rear end crashes was “following too closely”, which indicates density is the primary predictor of crashes for the project.

Tables 4-7, 4-8, and 4-9, found in a later chapter of this report, contain summaries of density information for the “Build” 106<sup>th</sup> Street interchange and the “No Build” 106<sup>th</sup> Street interchange conditions. As density increases, number of crashes are anticipated to increase, and as density decreases, number of crashes are anticipated to decrease. The proposed 106<sup>th</sup> Street interchange creates ramp merges and diverges that currently do not exist, and crashes associated with these new merges and diverges, are anticipated to occur; however, the proposed 106<sup>th</sup> Street interchange provides safety benefits to the adjacent 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges. In general, the densities associated with the merges and diverges at the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges are anticipated to decrease, resulting in a reduction in crashes and an increase in safety.

All of the interchange configurations, associated with the build alternative, are anticipated to improve overall safety within the study area. Providing a new interchange at 106<sup>th</sup> Street will mitigate some of the existing and future operational challenges at the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges, and help to reduce the number of crashes at the existing signalized ramp junctions and the I-69 mainline diverge points that result from lack of capacity and queuing. As documented later in this report, all of the three new interchange alternatives can be designed and constructed in a manner that allows adequate mainline merge, diverge, and weaving operations. All three new interchange alternatives can be designed and constructed to meet all Indiana Design Manual and AASHTO Greenbook standards and guidance, with proper signage.

Even though all interchange configurations can be designed to meet INDOT geometrics and signage standards, the Roundabout interchange alternative is anticipated to provide the most safety benefit of all of the alternatives. As noted in the publication *Roundabouts: An Informational Guide, Second Edition*, developed by the National Cooperative Highway research Program (NCHRP) in conjunction with FHWA, roundabouts provide numerous safety benefits over traditional intersection treatments by:

- Providing more time for entering drivers to judge, adjust speed for, and enter a gap in circulating traffic, allowing for safer merges;
- Reducing the size of sight triangles needed for users to see one another;
- Increasing the likelihood of drivers yielding to pedestrians (compared to an uncontrolled crossing);
- Providing more time for all users to detect and correct for their mistakes or mistakes of others;
- Making crashes less frequent and less severe, including crashes involving pedestrians and bicyclists; and
- Making the intersection safer for novice users.

The safety benefits are particularly notable for fatal and injury type crashes because the speeds associated with roundabout operations are typically slower than for signalized intersection, and the angle of impact is typically not 90 degree or head-on.

### 3.8 Environmental Concerns

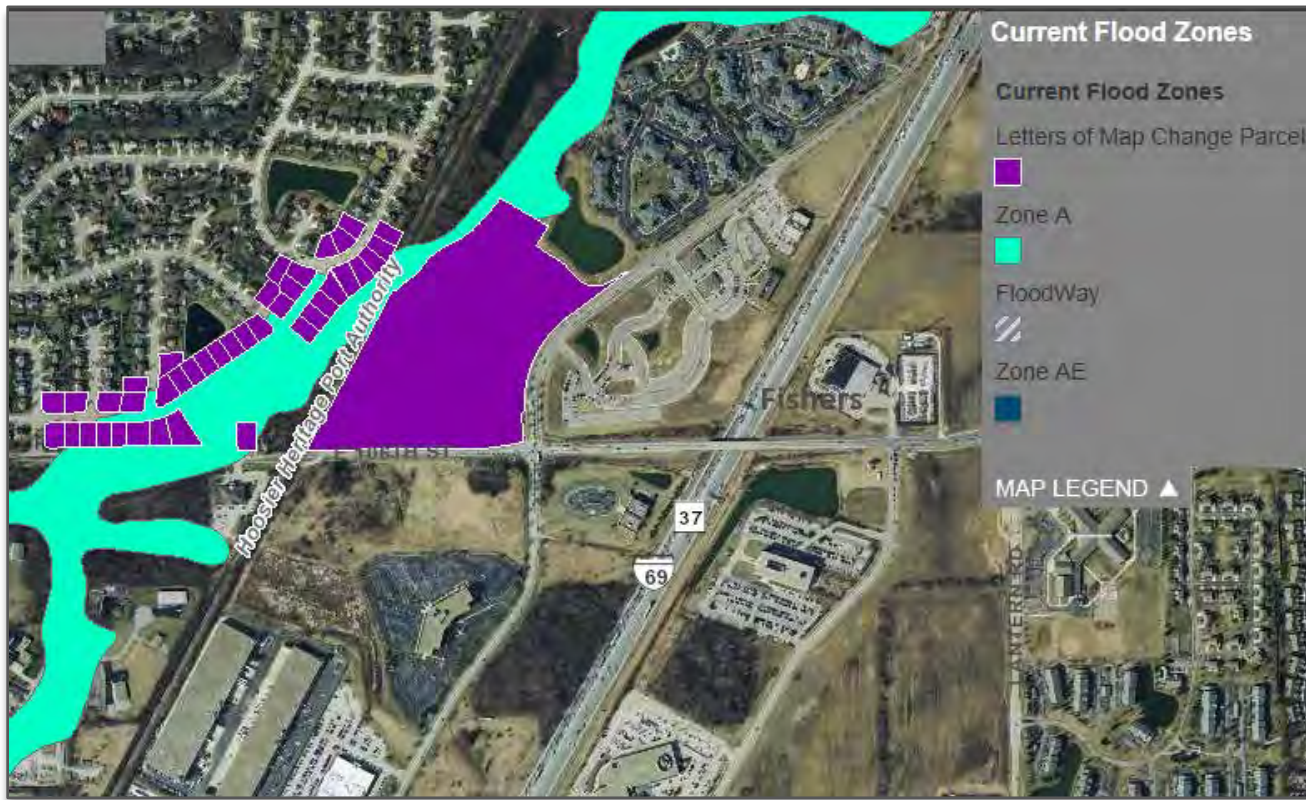
There are no apparent environmental “fatal flaws” for this project. Minor environmental concerns include a flood zone, two ponds, and low quality wetlands within the project area.

Figure 3-3 shows the Town of Fishers Flood Zone map. Land to the west of the project area is classified as Zone A. There would be no occupation of Zone A land as the subject project ties into the east project limits of the Town of Fisher’s separate roundabout construction project at Crosspoint Boulevard.

Drainage along I-69 flows to roadside ditches and storm inlet structures in the median, which discharge to the same ditches. Approximately two thirds of project storm runoff will flow north to Cheeney Creek (part of the RJ Craig Regulated Drain). Two detention ponds are proposed to reduce peak flow by intercepting this runoff.

The preliminary Red Flag survey identified two ponds in the immediate area of the interchange, just outside of the right-of-way. The larger pond is in the southeast quadrant and the smaller pond is in the southwest quadrant. Both are Palustrine, Unconsolidated Bottom with mud substrate (PUB3). A mix of vegetation characteristic of both wetland and upland areas are present at the shoreline areas. Three other emergent wetlands have been delineated through field review. Mitigation of impacted wetlands will be determined during the design process.

Figure 3-3 | Town of Fisher Flood Zone Map



Source: <http://23.23.127.197/apps/LOMC/>

The Flanagan House, eligible for listing in the National Register of Historic Places (NRHP), is located along the south side of 106th Street, in the southeast quadrant of the 106th Street intersection with Kincaid Drive, east of I-69. It appears that all of the interchange alternatives being analyzed can be constructed without requiring property from the historic boundary of the Flanagan House.

## 4.0 CONSISTENCY WITH FHWA POLICY

### 4.1 Policy Point #1

*"The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands (23 CFR 625.2(a))."*

Policy Point #1 was investigated via the following general steps:

- Analyze traffic operations for the 96<sup>th</sup> and 116<sup>th</sup> Street interchanges and adjacent road network for the future year (2035) no-build scenario;
- Identify the required improvements to the 96<sup>th</sup> and 116<sup>th</sup> Street interchanges and adjacent road network to bring them up to adequate level of operation;
- Identify the project footprint associated with item #2 above; and,
- Estimate infrastructure and right-of-way costs associated with item #2, above.

#### 4.1.1 No-build 2035 Operations Analysis

The 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges and adjacent corridors experience operational challenges in the current year. Conditions are only anticipated to deteriorate as traffic is forecast to grow between the current year and the 2035. [Table 4-1](#) illustrates the anticipated 2035 operations of 96<sup>th</sup> Street and 116<sup>th</sup> Street for the no-build scenario.

Table 4-1 | Existing Conditions Capacity Analysis

2035 No-build	Existing Conditions			
	AM		PM	
Location	LOS	Delay	LOS	Delay
<b>116th Street</b>				
Lantern Rd	B	15.5	E	57.1
Commercial Dr.	D	36.4	F	157.0
I-69 SB	F	174.8	F	165.6
I-69 NB	F	92.0	F	251.5
USA Pkwy	F	107.6	F	313.9
<b>96th Street</b>				
Corporation Dr.	D	41.0	E	56.3
I-69 SB	C	28.4	C	30.2
I-69 NB	C	24.8	F	138.6
Hague Rd	C	30.7	F	83.5

Per the Synchro analysis, the majority of the intersections along 116<sup>th</sup> Street in both the AM and PM peak conditions are anticipated to operate at level of service (LOS) F. 96<sup>th</sup> Street is anticipated to perform at LOS D or better in the AM peak; however, it is anticipated to perform at LOS E and LOS F in the PM peak. [Appendix E](#) contains the no-build scenario 2035 AM and PM peak period traffic for 96<sup>th</sup> Street and 116<sup>th</sup> Street.

#### *4.1.2 Required Improvements along 96<sup>th</sup> Street and 116<sup>th</sup> Street*

Synchro 2035 AM and PM peak analysis was also used to identify the required improvements to bring the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges and adjacent corridors up to an acceptable operational level. This analysis was performed in a logical manner by first focusing on the interchange ramp junctions, then moving outward from the interchanges to the adjacent signalized intersections, and then continuing outward to other intersections until no improvements were deemed necessary. It is important to note that traffic modeling indicates the addition of a new interchange at 106<sup>th</sup> Street draws traffic away from 96<sup>th</sup> Street and 116<sup>th</sup> Street. This “benefit” to 96<sup>th</sup> Street and 116<sup>th</sup> Street is realized most at the interchange locations, with the benefit decreasing as the distance from the interchange increases. Synchro reports and layouts can be found in [Appendix H](#).

The analysis described in this section for determining required improvements to 96<sup>th</sup> Street and 116<sup>th</sup> Street is only for those areas that would otherwise receive a benefit from the addition of an interchange at 106<sup>th</sup> Street. For example, the intersection of 116<sup>th</sup> Street and Cumberland Road is at the northeastern edge of the study area. The traffic forecasts for that intersection are similar for the no-build and build scenarios. Even though the intersection is anticipated to operate at a LOS F in 2035, improvement of this intersection was not included in the Policy Point 1 analysis. Likewise, Policy Point 1 analysis did not include the improvement of north-south corridors, as they have operational challenges for both the no-build and build scenarios. This approach is conservative, intended to ensure that identification of required improvements is not “over-stated” and really focuses on areas that would otherwise receive benefit from the construction of an interchange at 106<sup>th</sup> Street.

[Tables 4-2 and 4-3](#) summarize the required improvements to bring 96<sup>th</sup> Street and 116<sup>th</sup> Street up to an acceptable level of operation for the 2035 AM and PM peak periods. The final footprint was determined by combining the AM and PM peak improvements. LOS D is set as the minimum acceptable LOS. For signalized intersections, the overall minimum LOS is D, while the minimum allowable LOS for an approach is E, and the minimum LOS for an individual turning movement within an approach is F. However, any LOS F for an individual movement was investigated to determine the severity of the delays associated with the LOS F. If it was a critical movement for overall traffic operations, additional improvements were identified to bring that movement up to a LOS E, which increased the overall intersection LOS to C in some cases.

Table 4-2 | AM Peak Required Improvements

Location	Required Improvements
<b>116<sup>th</sup> Street</b>	
Lantern Rd	Optimized signal timing.
Commercial Dr.	Optimized signal timing.
I-69 SB	Optimized signal timing. Added a second SB right turn lane to the I-69 SB off ramp to prevent queuing.
I-69 NB	Optimized signal timing. Added a second NB right turn lane on the I-69 off ramp to prevent queuing.
USA Pkwy	Optimized signal timing.
<b>96<sup>th</sup> Street</b>	
Corporation Dr.	Optimized signal timing.
I-69 SB	Optimized signal timing.
I-69 NB	Optimized signal timing.
Hague Rd	Optimized signal timing.

The identification of required improvements was performed in a logical manner starting with minor improvements and increasing to major improvements. The first option was to improve the signal timing to see if that would provide adequate capacity. If this did not bring the facility up to an adequate level, turn lanes were added first to increase capacity because turn lanes typically only require a small increase in the size of the project footprint. Addition of thru lanes was the last option because of the potential for significant cost and footprint impacts. SimTraffic, the microsimulation package contained with Synchro, was then used to check the analysis to make sure that queues from one intersection were not backing into adjacent upstream intersections, which would result in a poorer level of operation than what the Synchro analysis indicated.

The PM peak required more improvements than the AM peak. [Table 4-3](#) summarizes the PM peak improvements required to bring 96<sup>th</sup> Street and 116<sup>th</sup> Street up to an acceptable level of operation.

Table 4-3 | PM Peak Required Improvements

Location	Required Improvements
<b>116<sup>th</sup> Street</b>	
<b>Lantern Rd</b>	WB - Added right turn only lane and converted thru/right thru only.
<b>Commercial Dr.</b>	EB - Added second thru turn lane and second left turn lane. WB - Added third thru lane.
<b>I-69 SB</b>	SB - Added second SB right turn lane to the I-69 SB off ramp. EB - Added two thru lanes (4 thru lanes total) and a thru/right turn lane. WB - Added third thru lane.
<b>I-69 NB</b>	NB - Added second NB right turn lane on the I-69 off ramp. EB - Added third thru lane. WB - Added third thru lane.
<b>USA Pkwy</b>	NB - Added second NB left turn lane. EB - Added third thru lane and converted right only lane to thru/right turn lane. WB - Added one thru/right turn lane.
<b>96th Street</b>	
<b>Corporation Dr.</b>	Optimized signal timing. Adjustments to adjacent intersection timing helped improved this intersection.
<b>I-69 SB</b>	WB - Added third thru lane.
<b>I-69 NB</b>	NB - Added third right turn lane. EB - Added second left turn lane. WB - Added fifth thru lane.
<b>Hague Rd</b>	EB - added fourth thru lane (either had to add 4th NB left, or 4th EB thru).
<b>Walmart/Meijer entrances</b>	EB - turned thru/right turn lane into a third thru only lane and added one right turn only lane. Used to terminate receiving lane.

Table 4-4 represents the anticipated LOS and delay following the implementation of improvements listed in Tables 4-2 and 4-3. All performed at a LOS of D or better.

Table 4-4 | Required Improvements Capacity Analysis

2035 No-Build	Required Improvements			
	AM		PM	
Location	LOS	Delay	LOS	Delay
<b>116<sup>th</sup> Street</b>				
Lantern Rd	C	27.1	D	38.2
Commercial Dr.	C	29.8	D	41.0
I-69 SB	D	49.2	C	27.7
I-69 NB	C	29.3	C	22.1
USA Pkwy	C	24.7	C	31.3
<b>96<sup>th</sup> Street</b>				
Corporation Dr.	D	35.4	D	37.2
I-69 SB	C	20.3	D	38.8
I-69 NB	C	25.6	D	37.7
Hague Rd	B	12.3	C	27.7

The SimTraffic microsimulation indicates that after implementing the required improvements, 96<sup>th</sup> Street will perform well without any queuing into adjacent intersections; however, 116<sup>th</sup> Street is anticipated to experience westbound queuing from Commercial Drive to USA Parkway due to heavy left turning movements turning onto southbound Commercial Drive, the I-69 northbound entrance ramp, and the I-69 southbound entrance ramp. The microsimulation report in Table 4-5 gives the average queue length at the intersections along 116<sup>th</sup> Street. This analysis indicates that while adding thru lanes along westbound 116<sup>th</sup> Street was required, the lanes will operate with reduced efficiency because motorists will favor the inside westbound lanes as they position themselves for downstream left turning movements.

Table 4-5 | 116<sup>th</sup> Street Westbound 2035 PM Queue Lengths

2035 PM	Queue Length
<b>116<sup>th</sup> Street Westbound</b>	
Commercial Dr.	414 ft
I-69 SB	548 ft
I-69 NB	508 ft
USA Pkwy	1697 ft

#### 4.1.3 Footprint and Cost Impacts

Appendix H contains cost estimates for the required improvements. These estimates include roadway and bridge costs, with contingencies for items such as utility relocations and engineering. Right-of-way costs are also included. Right-of-way costs are based on impacts of the footprint of the required improvements on adjacent parcels. The total estimated cost for the required improvements is \$31.6 million, with \$18.1 million for 116<sup>th</sup> Street and \$13.5 million for 96<sup>th</sup> Street. A commercial relocation would be required with the improvement to 96<sup>th</sup> Street and 116<sup>th</sup> Street identified in Policy Point #1. No relocations are necessary with the build alternative for a new interchange at 106<sup>th</sup> Street.

It is important to note that user costs are not included in this cost estimate. Reconstruction of the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges and corridors would have significant impacts on the motoring public. Impacts would include the time value of money for delay to personal vehicles and commercial traffic and impacts to businesses in the form of lost revenue due to reduced access.

#### 4.2 Policy Point #2

*"The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a))."*

The purpose and need of the project is to provide access to the 106<sup>th</sup> Street area. In general, transportation system improvements will not satisfy this need. In 2003, a Record of Decision (ROD) was issued for the ConNECTIONS (Northeast Corridor Transportation) Study Environmental Impact Statement (EIS), which addressed the entire northeast quadrant of the Indianapolis Metropolitan Area. The ConNECTIONS Study analyzed highway, transit, transportation systems management (TSM), and special use lanes. Highway alternative H5 was selected as preferred, and it was determined that transit alternatives should be investigated on a more regional level. Since that time there has been continuous study of transit options for the northeast corridor.

- **High Occupancy Vehicle Lanes (HOV)** – HOV lanes improve interstate capacity, and not necessarily interstate accessibility. The recent mainline I-69 improvements associated with the Operation Indy Commute (OIC) project provide sufficient mainline capacity through year 2035. There are no dedicated HOV lanes along the I-69 corridor, northeast of Indianapolis.
- **Ramp Metering** – Ramp metering is most effective for limiting the flow of local network vehicles accessing the mainline interstate. As previously mentioned, mainline I-69 capacity is sufficient through year 2035. There is no need to meter traffic.
- **Mass Transit** – Various studies over the years have investigated the viability of mass transit along this northeast corridor. The Town of Fishers currently has a mass transit option in place, the Fishers Express bus system, which runs from 106<sup>th</sup> Street to downtown Indianapolis. 2013 ridership averaged 96 one-way trips per day according to Indy Express Bus: <http://www.fishers.in.us/DocumentCenter/View/1665>.

- **Geometric Design** – Design improvements were considered in Policy Point #1. Improvements to the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges and corridors is not a viable alternative for meeting the purpose and need of the project.

#### 4.3 Policy Point #3

*"Policy Point 3: An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d))."*

##### 4.3.1 Scope of Analysis

The IJ Study is required to analyze base year (2015) and future years (2020 & 2035), pre- and post-construction traffic operations for all of the interchange alternatives being considered. The IJ Study requires analysis of the entire study area (Figure 4-1), with a primary focus on one existing interchange upstream and downstream (96<sup>th</sup> Street and 116<sup>th</sup> Street), as well as analysis of one signalized intersection and/or roundabout to the east and west of each of the three interchange locations at 96<sup>th</sup> Street, 106<sup>th</sup> Street, and 116<sup>th</sup> Street. The pre- and post-construction operations of the adjacent interchanges and adjacent signalized intersections and/or roundabouts to the east and west perform in similar fashion, regardless of the interchange type selected for the 106<sup>th</sup> Street interchange.

##### 4.3.2 106<sup>th</sup> Street Interchange Alternatives

Due to right-of-way constraints and the urban nature of the area, all three interchange alternatives below are urban interchanges.

- Tight Diamond (TD)
- Single Point Urban Interchange (SPUI)
- Roundabout

A fourth alternative, diverging diamond interchange (DDI), was also considered. Since the preliminary analysis confirmed that the DDI had similar cost and right-of-way impacts as the SPUI, but did not provide as much traffic

capacity, the DDI was eliminated from further consideration. Also, the Town of Fishers, a major project stakeholder, recommended elimination of the DDI from further consideration due to driver expectancy issues.

This IJ Study provides a summary of each of the three alternative's forecasted traffic capacity performance, preliminary cost, potential impacts to adjacent properties, and other pertinent information.

The project team developed lane configurations for each of these interchange alternatives that will provide adequate traffic capacity for the AM and PM peak periods in year 2035. Schematic diagrams of each of the interchange alternatives are located in [Appendix A](#). Additionally, preliminary right-of-way requirements for each of the interchange alternatives are located in [Appendix B](#). Limited access right-of-way is planned along 106<sup>th</sup> Street between Crosspoint Boulevard and USA Parkway. The only exceptions will be the private drive approach to Architectural Brick and Tile, Parcel 7 in the Figures in Appendix B, and the street approach for Kincaid Drive.

#### 4.3.3 Study Area-Wide Metrics

Prior to comparing the capacity analysis results of the three interchange alternatives, study area-wide analysis was performed to determine if the addition of a new interchange at 106<sup>th</sup> Street provides overall system benefits. The base year in all of the traffic modeling assumes completion and operation of the Operation Indy Commute (OIC) project currently under construction. [Table 4-6](#) summarizes the anticipated average daily vehicle hours travelled (VHT) and the average daily delay in hours for the entire study area for the existing (No Build) and the new interchange at 106<sup>th</sup> Street (Build) scenarios.

The information summarized in [Table 4-6](#) was generated from the microsimulation for the entire study area bordered by I-465, Allisonville Road, 126<sup>th</sup> Street, and Cumberland Road ([Figure 4-1](#)). Methodology for this analysis is contained in the previously provided Frame Work Document. The analysis illustrates that the construction of a new interchange at 106<sup>th</sup> Street will reduce the overall vehicle hours travelled and overall delay experienced within the study area for years 2015, 2020, and 2035.

Figure 4-1 | Project Study Area



Table 4-6 | Average Daily Vehicle Hours Travelled and Delay

	No Build	Build
VHT (by vehicle hours)		
AM Peak Hour		
2015	3,603	3,562
2020	4,305	4,208
2035	6,559	6,285
PM Peak Hour		
2015	6,337	6,304
2020	7,459	6,876
2035	10,732	9,961
Delay (by hours)		
AM Peak Hour		
2015	1,377	1,335
2020	1,986	1,868
2035	3,938	3,676
PM Peak Hour		
2015	3,620	3,559
2020	4,697	4,053
2035	7,783	6,982

#### 4.3.4 Study Area-Wide Mainline, Merge, Diverge, and Weave Analysis

Capacity analysis was performed using Highway Capacity Software (HCS 2010) for operations associated with mainline I-69, such as the freeway mainline segment capacity, as well as ramp merge, diverge, and weaving. The HCS capacity analysis findings for mainline I-69 and the ramp merge/diverge areas are the same regardless of the selected interchange configuration at 106<sup>th</sup> Street. The HCS analysis, found in [Appendix E](#), confirms that an interchange can be added at 106<sup>th</sup> Street without jeopardizing the operations along I-69. [Table 4-7](#) and [Table 4-8](#) summarize the HCS analysis for the No Build and Build alternatives. Level of Service (LOS) is reported as "A" through "F" with LOS A representing uninhibited, free-flow conditions and LOS F representing gridlock. The point between LOS D and LOS E typically represents when a facility has reached its capacity, and congestion and queuing tend to occur on a more frequent basis as this threshold is exceeded. LOS for the freeway and ramp maneuvers is based on density, represented by passenger vehicles per mile per lane.

Table 4-7 | No Build Condition – Mainline, Merge, Diverge, Weave Analysis Summary

No Build			Year 2015				Year 2020				Year 2035			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
116th Street	NB	Ramp Diverge	A	3.3	B	14.2	A	4.6	B	13.0	A	8.0	B	17.6
		Interchange Freeway	A	8.1	B	16.4	A	8.8	B	13.9	B	11.0	C	18.4
		Ramp Merge	A	6.0	B	18.0	A	7.3	B	15.9	B	10.7	C	22.2
	SB	Ramp Diverge	B	12.1	B	10.4	B	13.2	B	11.1	B	16.4	B	12.6
		Interchange Freeway	B	16.8	B	11.5	B	17.6	B	11.9	C	20.1	B	13.0
		Ramp Merge	C	21.1	B	14.2	C	22.0	B	15.8	C	27.0	B	19.1
		Freeway-116th to 96th	C	18.2	B	12.9	C	18.9	B	13.7	C	22.2	B	15.7
106th Street	NB	Ramp Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Interchange Freeway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Ramp Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Weave- 106th to 116th	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Freeway- 106th to 116th	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	SB	Ramp Diverge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Interchange Freeway	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Ramp Merge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Weave- 106th to 96th	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
96th Street	NB	Ramp Diverge	B	10.1	C	21.0	B	10.1	C	20.1	B	13.7	C	23.4
		Interchange Freeway	A	10.1	C	20.6	B	11.1	C	21.0	B	13.0	C	24.3
		Ramp Merge	A	6.8	B	19.1	A	7.9	B	19.7	A	9.8	C	25.3
		Freeway-96th to 116th	A	9.1	C	19.1	A	10.0	C	19.6	B	11.8	C	23.4
	SB	Ramp Diverge	B	13.2	A	7.6	B	14.0	A	8.7	B	16.9	B	11.0
		Interchange Freeway	C	20.0	B	14.1	C	20.8	B	14.9	C	24.3	B	17.2
		Ramp Merge	C	22.2	B	17.7	C	23.8	B	19.2	C	26.9	C	22.8
		Freeway - 96th to 82nd	C	20.2	B	15.5	C	21.2	B	16.5	C	24.2	C	19.1
82nd Street	NB	Ramp Diverge	C	23.5	D	30.4	C	24.2	D	31.1	C	25.7	D	33.1
		Interchange Freeway	B	13.0	C	22.9	B	14.1	C	23.2	B	16.5	D	26.0
		Ramp Merge	A	9.2	D	28.0	B	10.4	D	28.6	B	13.1	C	26.9
		Freeway-82nd to 96th	B	11.5	C	21.5	B	12.4	C	21.9	B	14.7	C	25.0
	SB	Ramp Diverge	B	13.9	A	9.8	B	15.1	B	11.2	B	17.5	B	13.0
		Interchange Freeway	C	20.0	B	17.8	C	24.9	C	18.9	D	28.4	C	21.9
		Ramp Merge	C	25.4	C	26.6	C	26.3	C	27.0	D	28.4	D	28.1
		Weave- 82nd to 465	F	-	F	-	F	-	F	-	F	-	F	-
I-465	NB	Freeway- 82nd to 465	C	23.1	C	20.6	C	24.1	C	21.2	D	26.7	C	23.6
		Ramp Merge - 465 EB	B	17.5	D	29.9	B	18.4	D	30.2	C	20.5	D	33.1
		Interchange Freeway	A	10.7	B	17.2	B	11.3	C	19.2	B	12.7	C	20.3
		Interchange Weave	B	19.6	C	24.5	B	13.2	C	24.8	B	15.4	C	27.4
		Ramp Diverge	B	16.8	D	30.8	B	17.8	D	31.1	C	20.2	D	32.9
		Weave- 465 to 82nd	F	-	F	-	F	-	F	-	F	-	F	-
	SB	Freeway-465 to 82nd	C	18.5	D	28.0	C	19.5	D	28.6	C	21.5	D	32.1
		Interchange Freeway	B	14.3	A	10.4	B	15.2	A	10.6	B	15.8	B	11.8
		Ramp Merge EB	B	14.3	B	10.6	B	14.9	B	10.6	B	16.0	B	11.9

Density (passenger cars/mile/lane)

Table 4-8 | Build Condition – Mainline, Merge, Diverge, Weave Analysis Summary

Build			Year 2015				Year 2020				Year 2035			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
116th Street	NB	Ramp Diverge	A	2.5	B	13.2	A	3.4	B	13.9	A	6.0	B	17.8
		Interchange Freeway	A	8.9	B	13.9	A	9.5	B	15.2	B	11.7	C	18.1
		Ramp Merge	A	6.7	B	15.2	A	7.8	B	16.8	B	10.4	C	20.9
	SB	Ramp Diverge	B	11.6	A	9.2	B	12.4	A	9.8	B	15.1	B	11.6
		Interchange Freeway	B	17.1	B	12.4	C	18.1	B	12.6	C	21.0	B	13.8
		Ramp Merge	C	21.6	B	13.7	C	22.9	B	14.7	D	28.1	B	17.8
		Weave- 116th to 106th	C	21.3	B	14.6	C	22.9	B	15.3	D	28.2	B	17.6
		Freeway-116th to 106th	C	18.6	B	13.1	C	19.6	B	14.9	C	23.1	B	15.4
106th Street	NB	Ramp Diverge	A	5.7	B	17.0	A	7.1	B	16.4	A	9.9	C	20.7
		Interchange Freeway	A	8.8	C	18.5	A	9.4	C	19.0	A	10.6	C	21.5
		Ramp Merge	A	5.7	B	17.0	A	6.6	B	18.0	A	8.4	B	18.3
		Weave- 106th to 116th	A	9.5	B	19.3	B	10.3	C	20.5	B	13.0	C	25.4
		Freeway- 106th to 116th	A	9.1	C	19.4	A	9.8	C	20.1	A	9.4	C	19.4
	SB	Ramp Diverge	B	12.3	A	7.0	B	13.7	A	7.8	B	16.9	B	10.2
		Interchange Freeway	B	17.1	B	11.9	B	17.8	B	12.3	C	20.8	B	13.9
		Ramp Merge	B	11.9	A	9.2	B	13.0	B	10.1	B	16.3	B	13.5
		Weave- 106th to 96th	C	21.3	B	15.9	C	22.8	C	21.5	D	28.9	C	21.3
		Freeway-106th to 96th	C	18.2	B	13.4	C	19.2	B	14.1	C	22.8	B	16.6
96th Street	NB	Ramp Diverge	A	9.0	B	17.3	A	8.8	B	17.3	B	11.0	C	20.2
		Interchange Freeway	B	11.3	C	22.9	B	12.5	C	23.7	B	14.8	D	28.1
		Ramp Merge	A	8.3	C	21.6	A	9.2	C	22.2	B	11.8	C	25.9
		Weave- 96th to 106th	B	11.8	C	27.3	B	13.3	D	28.5	B	16.9	D	31.1
	Freeway-96th to 106th	A	10.3	C	21.2	B	11.3	C	21.8	B	13.4	C	25.3	
	SB	Ramp Diverge	B	11.9	A	7.3	B	13.3	A	8.3	B	16.4	B	11.5
		Interchange Freeway	C	21.0	B	15.4	C	21.9	B	16.0	D	26.3	C	18.8
		Ramp Merge	C	21.7	B	17.6	C	22.4	B	18.2	C	25.8	C	20.9
		Freeway - 96th to 82nd	C	20.4	B	16.1	C	21.1	B	16.6	C	24.5	C	19.0
82nd Street		NB	Ramp Diverge	C	23.5	D	31.3	C	23.8	D	31.1	C	25.8	D
	Interchange Freeway		B	13.1	C	22.9	B	14.2	C	23.1	B	16.3	D	26.1
	Ramp Merge		A	9.5	C	22.8	B	10.7	C	23.3	B	13.0	C	27.5
	Freeway-82nd to 96th		B	11.6	C	27.1	B	12.6	C	22.1	B	14.6	C	25.3
	SB	Ramp Diverge	B	14.1	B	10.6	B	15.1	B	11.1	B	17.6	B	13.2
		Interchange Freeway	C	23.8	C	18.4	C	24.5	C	19.1	D	29.0	C	21.6
		Ramp Merge	C	25.6	C	27.2	C	26.0	C	27.3	C	28.0	C	27.9
		Weave- 82nd to 465	F	-	F	-	F	-	F	-	F	-	F	-
		Freeway- 82nd to 465	C	23.4	C	21.1	C	23.9	C	21.5	D	26.8	C	23.4
I-465	NB	Ramp Merge - 465 EB	B	18.0	D	30.1	B	18.6	D	30.0	C	20.5	D	32.3
		Interchange Freeway	B	11.0	C	19.2	B	11.5	C	19.1	B	12.7	C	20.6
		Interchange Weave	B	12.8	C	24.8	B	13.4	C	24.4	B	15.5	C	26.9
		Ramp Diverge	B	17.3	D	31.1	B	18.1	D	28.3	C	20.2	D	33.4
		Weave- 465 to 82nd	F	-	F	-	F	-	F	-	F	-	F	-
		Freeway-465 to 82nd	C	18.7	D	28.6	C	19.4	D	28.6	C	21.4	D	32.0
	SB	Interchange Freeway	B	13.8	A	10.3	B	13.9	A	10.6	B	15.8	B	11.5
		Ramp Merge EB	B	13.5	B	10.4	B	13.7	B	11.1	B	15.9	A	11.6

Density (passenger cars/mile/lane)

Table 4-9 | Difference Between Build and No Build Conditions

No Build			Year 2015				Year 2020				Year 2035			
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
116th Street	NB	Ramp Diverge		0.8		1.0		1.2		(0.9)		2.0		(0.2)
		Interchange Freeway		(0.8)		2.5		(0.7)		(1.3)		(0.7)		0.3
		Ramp Merge		(0.7)		2.8		(0.5)		(0.9)		0.3		1.3
	SB	Ramp Diverge		0.5	Up	1.2		0.8	Up	1.3		1.3		1.0
		Interchange Freeway		(0.3)		(0.9)	Down	(0.5)		(0.7)		(0.9)		(0.8)
		Ramp Merge		(0.5)		0.5		(0.9)		1.1	Down	(1.1)		1.3
		Weave		NA		NA		NA		NA		NA		NA
		Freeway-116th to 96th		(0.4)		(0.2)		(0.7)		(1.2)		(0.9)		0.3
106th Street	NB	Ramp Diverge		NA		NA		NA		NA		NA		NA
		Interchange Freeway		NA		NA		NA		NA		NA		NA
		Ramp Merge		NA		NA		NA		NA		NA		NA
		Weave- 106th to 116th		NA		NA		NA		NA		NA		NA
		Freeway- 106th to 116th		NA		NA		NA		NA		NA		NA
	SB	Ramp Diverge		NA		NA		NA		NA		NA		NA
		Interchange Freeway		NA		NA		NA		NA		NA		NA
		Ramp Merge		NA		NA		NA		NA		NA		NA
		Weave- 106th to 96th		NA		NA		NA		NA		NA		NA
		Freeway-106th to 96th		NA		NA		NA		NA		NA		NA
96th Street	NB	Ramp Diverge	Up	1.1	Up	3.7	Up	1.3	Up	2.8		2.7		3.2
		Interchange Freeway	Down	(1.2)		(2.3)		(1.4)		(2.7)		(1.8)	Down	(3.8)
		Ramp Merge		(1.5)	Down	(2.5)		(1.3)	Down	(2.5)	Down	(2.0)		(0.6)
		Weave		NA		NA		NA		NA		NA		NA
		Freeway-96th to 116th		(1.2)		(2.1)		(1.3)		(2.2)		(1.6)		(1.9)
	SB	Ramp Diverge		1.3		0.3		0.7		0.4		0.5		(0.5)
		Interchange Freeway		(1.0)		(1.3)		(1.1)		(1.1)	Down	(2.0)	Down	(1.6)
		Ramp Merge		0.5		0.1		1.4		1.0		1.1		1.9
82nd Street	NB	Freeway - 96th to 82nd		(0.2)		(0.6)		0.1		(0.1)		(0.3)		0.1
		Ramp Diverge		0.0		(0.9)		0.4		0.0		(0.1)		0.2
		Interchange Freeway		(0.1)		0.0		(0.1)		0.1		0.2		(0.1)
		Ramp Merge		(0.3)	Up	5.2		(0.3)	Up	5.3		0.1		(0.6)
	SB	Freeway-82nd to 96th		(0.1)		(5.6)		(0.2)		(0.2)		0.1		(0.3)
		Ramp Diverge		(0.2)	Down	(0.8)		0.0		0.1		(0.1)		(0.2)
		Interchange Freeway		(3.8)	Down	(0.6)		0.4		(0.2)		(0.6)		0.3
		Ramp Merge		(0.2)		(0.6)		0.3		(0.3)		0.4		0.2
I-465	NB	Weave- 82nd to 465		0.0		0.0		0.0		0.0		0.0		0.0
		Freeway- 82nd to 465		(0.3)		(0.5)		0.2		(0.3)		(0.1)		0.2
		Ramp Merge - 465 EB		(0.5)		(0.2)		(0.2)		0.2		0.0		0.8
		Interchange Freeway	Down	(0.3)	Down	(2.0)		(0.2)		0.1		0.0		(0.3)
		Interchange Weave		6.8		(0.3)		(0.2)		0.4		(0.1)		0.5
	SB	Ramp Diverge		(0.5)		(0.3)		(0.3)		2.8		0.0		(0.5)
		Weave- 465 to 82nd		0.0		0.0		0.0		0.0		0.0		0.0
		Freeway-465 to 82nd		(0.2)		(0.6)		0.1		0.0		0.1		0.1
	SB	Interchange Freeway		0.5		0.1		1.3		0.0		0.0		0.3
		Ramp Merge EB		0.8		0.2		1.2		(0.5)		0.1		0.3

Density (passenger cars/mile/lane)

\*Up represents one LOS better and Down represents one LOS worse

The improvements made by the Operation Indy Commute project, and in particular the braid ramps provided between 116<sup>th</sup> Street and SR 37 that allow high-volume movements to be properly staged to avoid weaving, are the primary reason why an interchange can be added at 106<sup>th</sup> Street without adversely impacting mainline I-69 operations. Capacity analysis for the mainline, merge, diverge, and weave areas surrounding the 106<sup>th</sup> Street interchange, as summarized in [Table 4-8](#), perform at an acceptable LOS D or better in 2035 for both the AM and PM peak periods.

[Table 4-9](#) represents the difference between No Build and Build conditions. Red numbers in parenthesis show an increase in density from No Build to Build, while black numbers show a decrease in density from No Build to Build. The anticipated increases or decreases in density are generally minor; however, some locations with densities close to a cutoff between LOS classifications are anticipated to experience a one classification better or a worse LOS as a result of the construction of an interchange at 106<sup>th</sup> Street. When comparing the 2035 No Build and Build capacity analysis results for mainline segments, approximately 60% of the locations stayed the same, or improved with the Build condition. For locations where the density increased for the Build condition, most of the increases were negligible. The most significant density increase, the northbound I-69 mainline segment within the 96<sup>th</sup> Street interchange, is anticipated to see a density increase of 3.8pcpmpl. This is because many of the motorists that currently access the 106<sup>th</sup> Street area exit at the 96<sup>th</sup> Street interchange. With the addition of a new interchange at 106<sup>th</sup> Street, these motorists can now stay on I-69 and travel north to exit directly at 106<sup>th</sup> Street; therefore, while the 96<sup>th</sup> Street diverge ramp volumes decrease, the mainline I-69 volumes increase. I-69 mainline has the capacity to handle this anticipated volume increase. There is a similar trend for the remainder of the 96<sup>th</sup> Street interchange and the 116<sup>th</sup> Street interchange.

Capacity analysis is not the only indicator of whether or not an interchange will operate adequately. The ability to properly sign an interchange is critical for safe and effective operations. [Appendix F](#) contains the project team's preliminary signage plan and illustrates that the Build condition can be signed to provide a safe system meeting INDOT signage standards. One weaving movement created by the Build condition, the northbound weave between 106<sup>th</sup> Street and 116<sup>th</sup> Street, may be of concern to the agencies. While this weave was fully analyzed and determined to be acceptable, as previously discussed, this weaving movement can actually be eliminated with proper signage. Northbound traffic from 106<sup>th</sup> wishing to enter northbound I-69 or SR 37 traffic will be directed along the northbound auxiliary lanes through the 116<sup>th</sup> Street interchange and to the appropriate I-69 or SR 37 access ramps.

A Collector-Distributor (CD) is not required as a part of this project. All proposed mainline, merge, diverge, and weaving movements are anticipated to perform at an acceptable level of service for the 2035 AM and PM peak periods, and the project can be properly signed per INDOT signage standards to provide safe movement of vehicular traffic through the system. If a CD system were warranted, it would need to be implemented on a more system-wide scale. For instance, there is no logical terminus for a CD between I-465 and 106<sup>th</sup> Street. A CD system would need to extend all the way south to I-465, which is cost prohibitive, and outside the scope of the project.

#### 4.3.5 Adjacent Interchange Signalized Intersections and Roundabouts

As previously mentioned, the interchange types analyzed as part of the 106<sup>th</sup> Street interchange Build alternative were:

- Tight Diamond (TD)
- Single Point Urban Interchange (SPUI)
- Roundabout

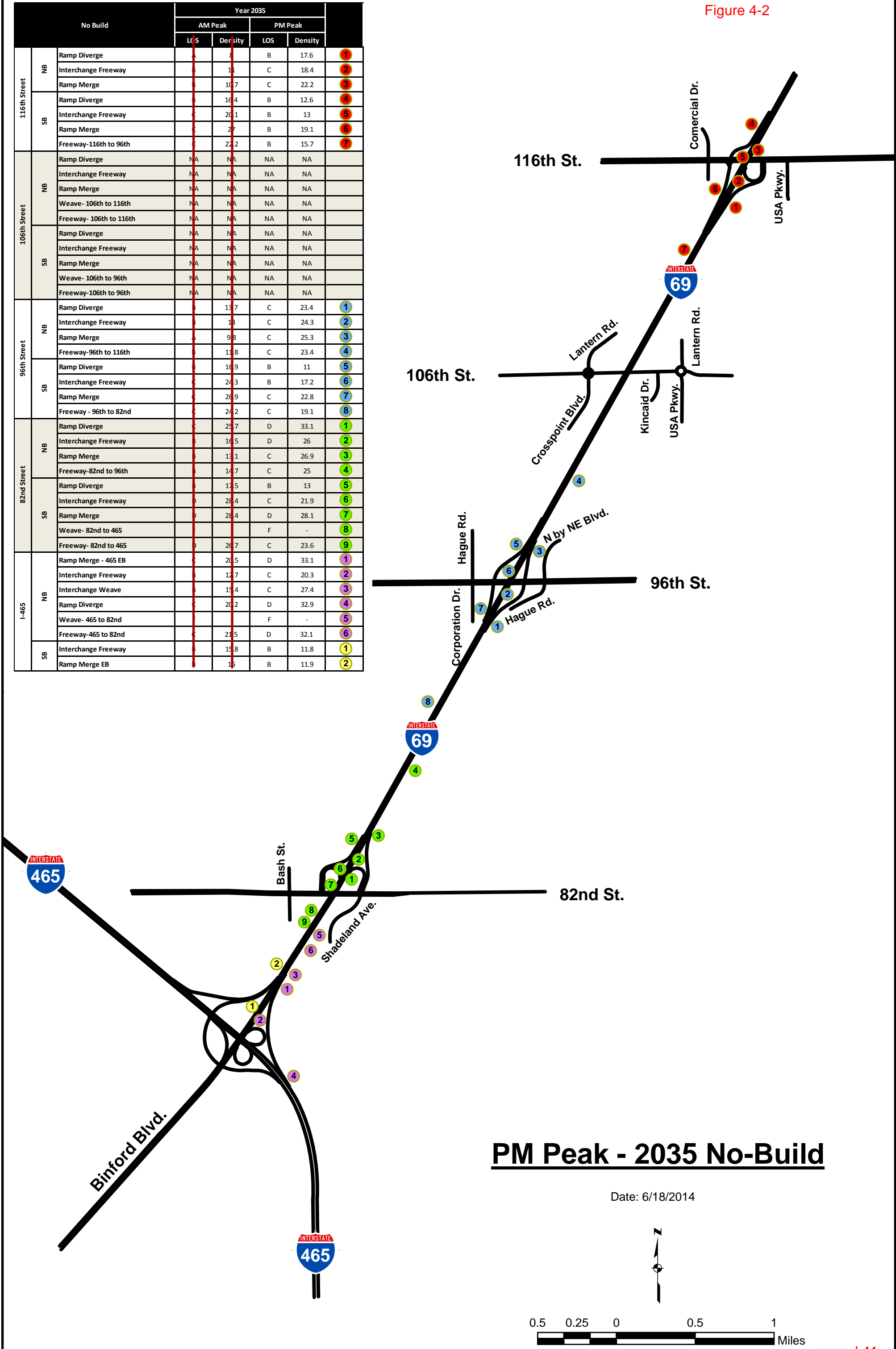
The capacity analysis results for the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges, as well as the adjacent roundabouts (106<sup>th</sup>/Crosspoint Boulevard and 106<sup>th</sup>/USA Parkway) to the 106<sup>th</sup> Street interchange are the same regardless of the interchange type selected for the 106<sup>th</sup> Street interchange Build alternative. [Table 4-10](#) summarizes the 2015, 2020, and 2035 AM and PM peak No Build and Build capacity analysis for these locations.

Table 4-10 | Adjacent Interchanges and Intersections – Capacity Analysis Summary

		2015				2020				2035			
		AM		PM		AM		PM		AM		PM	
116 <sup>th</sup> Street &	Alternative	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Commercial Dr	No Build	B	19.7	C	26.8	B	19.6	E	61.8	C	43.4	E	78.0
	Build	B	18.0	C	26.4	C	20.1	C	29.5	C	28.2	D	49.3
I-69 SB	No Build	C	23.7	E	58.1	C	32.9	F	83.0	F	111.8	F	195.4
	Build	C	25.8	C	26.5	C	26.2	D	38.1	E	77.7	F	124.0
I-69 NB	No Build	B	13.0	F	101.7	C	22.8	F	154.2	F	141.8	F	196.5
	Build	A	9.3	D	48.2	B	10.6	F	128.5	C	21.6	F	153.2
USA Pkwy	No Build	B	14.7	E	65.5	B	14.9	F	139.6	C	20.2	F	207.4
	Build	B	13.9	D	50.8	B	15.9	D	54.8	B	19.5	F	112.8
		2015				2020				2035			
106 <sup>th</sup> Street &	Alternative	AM		PM		AM		PM		AM		PM	
Crosspoint Blvd	Build	A	6.9	A	6.2	A	7.1	A	6.6	A	9.3	A	8.2
I-69 SB	(See Table 4-11)												
I-69 NB													
USA Parkway	Build	A	7.4	A	7.9	A	9.2	A	9.4	E	45.8	F	53.9
		2015				2020				2035			
		AM		PM		AM		PM		AM		PM	
96 <sup>th</sup> Street &	Alternative	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Corporation Dr	No Build	C	21.4	C	25.0	C	22.8	C	25.1	C	29.3	D	35.8
	Build	B	18.0	B	19.0	B	19.8	C	20.5	C	23.9	C	24.4
I-69 SB	No Build	C	21.0	C	22.1	C	25.3	C	23.5	C	27.7	C	33.6
	Build	C	24.8	C	21.1	C	24.3	B	20.0	C	27.4	C	27.8
I-69 NB	No Build	B	17.4	F	93.8	B	16.6	F	135.6	C	24.5	F	176.9
	Build	B	15.8	C	32.1	B	14.1	C	34.5	B	16.7	D	50.7
Hague Rd	No Build	C	22.1	D	36.7	B	19.0	D	44.8	C	25.7	E	57.6
	Build	B	18.9	C	22.4	C	21.5	C	28.8	C	21.7	C	32.7

Figure 4-2, 3, 4, & 5 displays these results graphically.

No Build			Year 2035				
			AM Peak		PM Peak		
			LOS	Density	LOS	Density	
116th Street	NB	Ramp Diverge	A	8	B	17.6	1
		Interchange Freeway	B	11	C	18.4	2
		Ramp Merge	C	10.7	C	22.2	3
	SB	Ramp Diverge	B	16.4	B	12.6	4
		Interchange Freeway	C	20.1	B	13	5
		Ramp Merge	C	27	B	19.1	6
		Freeway-116th to 96th	C	22.2	B	15.7	7
106th Street	NB	Ramp Diverge	NA	NA	NA	NA	
		Interchange Freeway	NA	NA	NA	NA	
		Ramp Merge	NA	NA	NA	NA	
		Weave- 106th to 116th	NA	NA	NA	NA	
		Freeway- 106th to 116th	NA	NA	NA	NA	
	SB	Ramp Diverge	NA	NA	NA	NA	
		Interchange Freeway	NA	NA	NA	NA	
		Ramp Merge	NA	NA	NA	NA	
		Weave- 106th to 96th	NA	NA	NA	NA	
Freeway-106th to 96th	NA	NA	NA	NA			
96th Street	NB	Ramp Diverge	B	13.7	C	23.4	1
		Interchange Freeway	B	18	C	24.3	2
		Ramp Merge	A	9.8	C	25.3	3
		Freeway-96th to 116th	B	11.8	C	23.4	4
	SB	Ramp Diverge	B	16.9	B	11	5
		Interchange Freeway	B	24.3	B	17.2	6
		Ramp Merge	B	26.9	C	22.8	7
		Freeway - 96th to 82nd	B	24.2	C	19.1	8
82nd Street	NB	Ramp Diverge	B	25.7	D	33.1	1
		Interchange Freeway	B	16.5	D	26	2
		Ramp Merge	B	13.1	C	26.9	3
		Freeway-82nd to 96th	B	14.7	C	25	4
	SB	Ramp Diverge	B	17.5	B	13	5
		Interchange Freeway	D	28.4	C	21.9	6
		Ramp Merge	D	28.4	D	28.1	7
		Weave- 82nd to 465	D		F	-	8
		Freeway- 82nd to 465	D	26.7	C	23.6	9
I-465	NB	Ramp Merge - 465 EB	B	20.5	D	33.1	1
		Interchange Freeway	B	12.7	C	20.3	2
		Interchange Weave	B	15.4	C	27.4	3
		Ramp Diverge	B	20.2	D	32.9	4
		Weave- 465 to 82nd	B		F	-	5
		Freeway-465 to 82nd	B	21.5	D	32.1	6
	SB	Interchange Freeway	B	15.8	B	11.8	1
		Ramp Merge EB	B	16	B	11.9	2

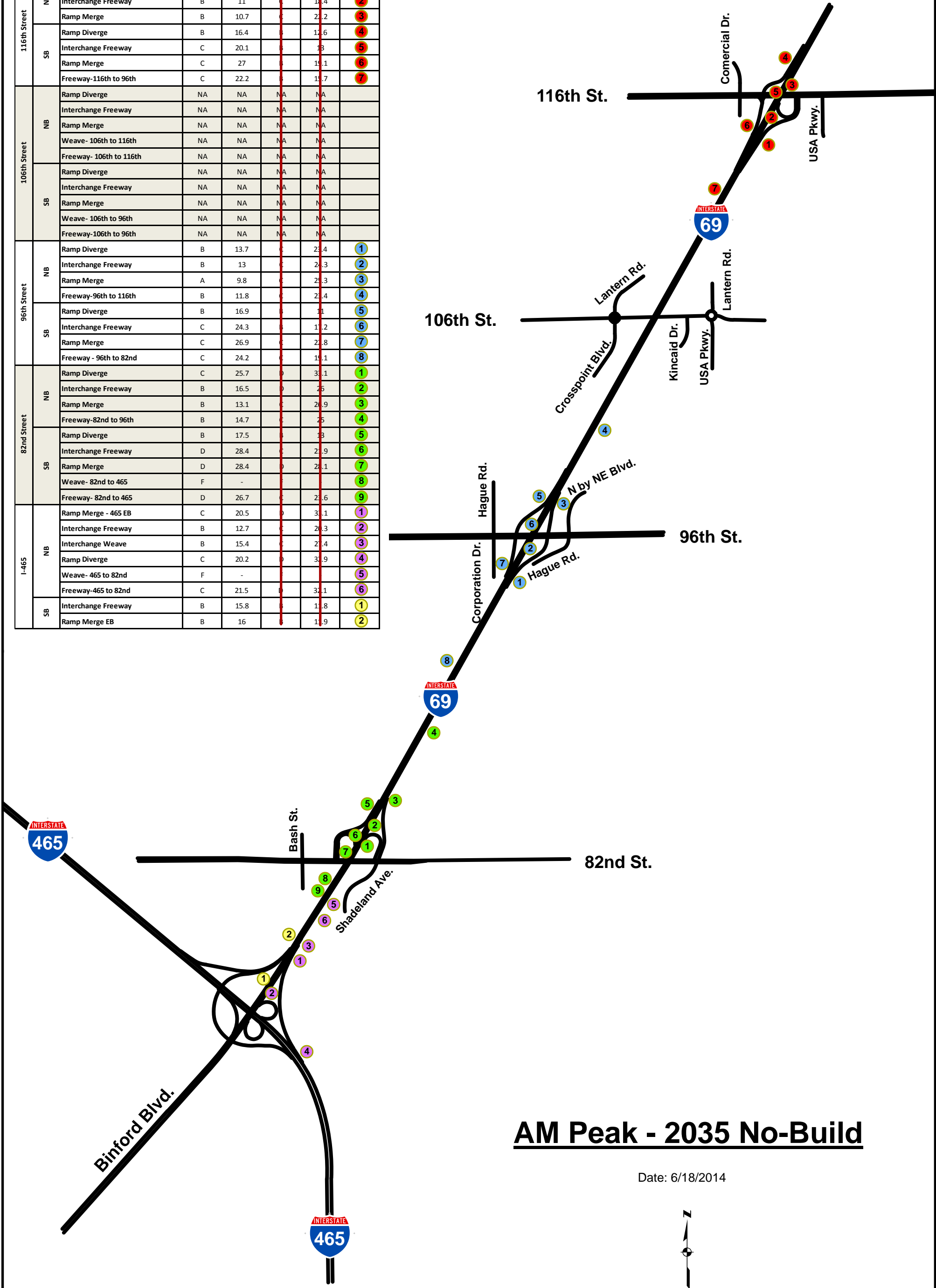


PM Peak - 2035 No-Build

Date: 6/18/2014



No Build			Year 2035				
			AM Peak		PM Peak		
			LOS	Density	LOS	Density	
116th Street	NB	Ramp Diverge	A	8		11.6	1
		Interchange Freeway	B	11		11.4	2
		Ramp Merge	B	10.7		21.2	3
	SB	Ramp Diverge	B	16.4		11.6	4
		Interchange Freeway	C	20.1		13	5
		Ramp Merge	C	27		11.1	6
		Freeway-116th to 96th	C	22.2		11.7	7
106th Street	NB	Ramp Diverge	NA	NA	NA	NA	
		Interchange Freeway	NA	NA	NA	NA	
		Ramp Merge	NA	NA	NA	NA	
		Weave- 106th to 116th	NA	NA	NA	NA	
		Freeway- 106th to 116th	NA	NA	NA	NA	
	SB	Ramp Diverge	NA	NA	NA	NA	
		Interchange Freeway	NA	NA	NA	NA	
		Ramp Merge	NA	NA	NA	NA	
		Weave- 106th to 96th	NA	NA	NA	NA	
Freeway-106th to 96th	NA	NA	NA	NA			
96th Street	NB	Ramp Diverge	B	13.7		21.4	1
		Interchange Freeway	B	13		21.3	2
		Ramp Merge	A	9.8		21.3	3
		Freeway-96th to 116th	B	11.8		21.4	4
	SB	Ramp Diverge	B	16.9		11	5
		Interchange Freeway	C	24.3		11.2	6
		Ramp Merge	C	26.9		21.8	7
		Freeway - 96th to 82nd	C	24.2		11.1	8
82nd Street	NB	Ramp Diverge	C	25.7		31.1	1
		Interchange Freeway	B	16.5		21	2
		Ramp Merge	B	13.1		21.9	3
		Freeway-82nd to 96th	B	14.7		21	4
	SB	Ramp Diverge	B	17.5		13	5
		Interchange Freeway	D	28.4		21.9	6
		Ramp Merge	D	28.4		21.1	7
		Weave- 82nd to 465	F	-			8
		Freeway- 82nd to 465	D	26.7		21.6	9
I-465	NB	Ramp Merge - 465 EB	C	20.5		31.1	1
		Interchange Freeway	B	12.7		21.3	2
		Interchange Weave	B	15.4		21.4	3
		Ramp Diverge	C	20.2		31.9	4
		Weave- 465 to 82nd	F	-			5
		Freeway-465 to 82nd	C	21.5		31.1	6
	SB	Interchange Freeway	B	15.8		11.8	1
		Ramp Merge EB	B	16		11.9	2

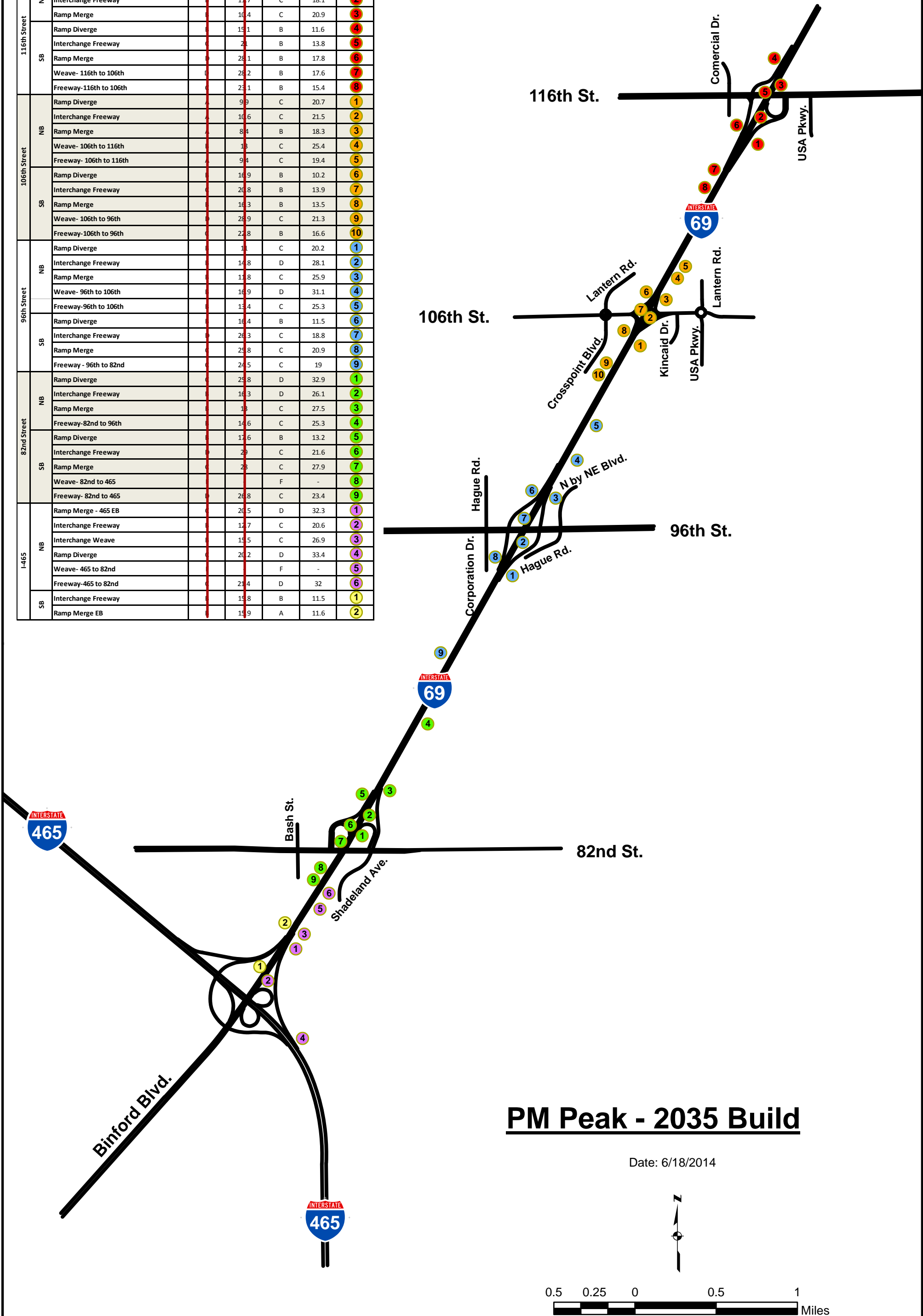


AM Peak - 2035 No-Build

Date: 6/18/2014

Build			Year 2035				
			AM Peak		PM Peak		
			LCS	Density	LOS	Density	
116th Street	NB	Ramp Diverge			B	17.8	1
		Interchange Freeway		11.7	C	18.1	2
		Ramp Merge		10.4	C	20.9	3
	SB	Ramp Diverge		15.1	B	11.6	4
		Interchange Freeway		21	B	13.8	5
		Ramp Merge		28.1	B	17.8	6
		Weave- 116th to 106th		28.2	B	17.6	7
		Freeway-116th to 106th		23.1	B	15.4	8
106th Street	NB	Ramp Diverge		9.9	C	20.7	1
		Interchange Freeway		10.6	C	21.5	2
		Ramp Merge		8.4	B	18.3	3
		Weave- 106th to 116th		13	C	25.4	4
		Freeway- 106th to 116th		9.4	C	19.4	5
	SB	Ramp Diverge		16.9	B	10.2	6
		Interchange Freeway		20.8	B	13.9	7
		Ramp Merge		16.3	B	13.5	8
		Weave- 106th to 96th		28.9	C	21.3	9
		Freeway-106th to 96th		22.8	B	16.6	10
96th Street	NB	Ramp Diverge		11	C	20.2	1
		Interchange Freeway		14.8	D	28.1	2
		Ramp Merge		13.8	C	25.9	3
		Weave- 96th to 106th		16.9	D	31.1	4
		Freeway-96th to 106th		13.4	C	25.3	5
	SB	Ramp Diverge		16.4	B	11.5	6
		Interchange Freeway		26.3	C	18.8	7
		Ramp Merge		25.8	C	20.9	8
		Freeway - 96th to 82nd		24.5	C	19	9
82nd Street	NB	Ramp Diverge		25.8	D	32.9	1
		Interchange Freeway		16.3	D	26.1	2
		Ramp Merge		13	C	27.5	3
		Freeway-82nd to 96th		14.6	C	25.3	4
	SB	Ramp Diverge		17.6	B	13.2	5
		Interchange Freeway		29	C	21.6	6
		Ramp Merge		23	C	27.9	7
		Weave- 82nd to 465			F	-	8
		Freeway- 82nd to 465		26.8	C	23.4	9
I-465	NB	Ramp Merge - 465 EB		20.5	D	32.3	1
		Interchange Freeway		12.7	C	20.6	2
		Interchange Weave		15.5	C	26.9	3
		Ramp Diverge		20.2	D	33.4	4
		Weave- 465 to 82nd			F	-	5
		Freeway-465 to 82nd		23.4	D	32	6
	SB	Interchange Freeway		15.8	B	11.5	1
		Ramp Merge EB		15.9	A	11.6	2

Figure 4-4

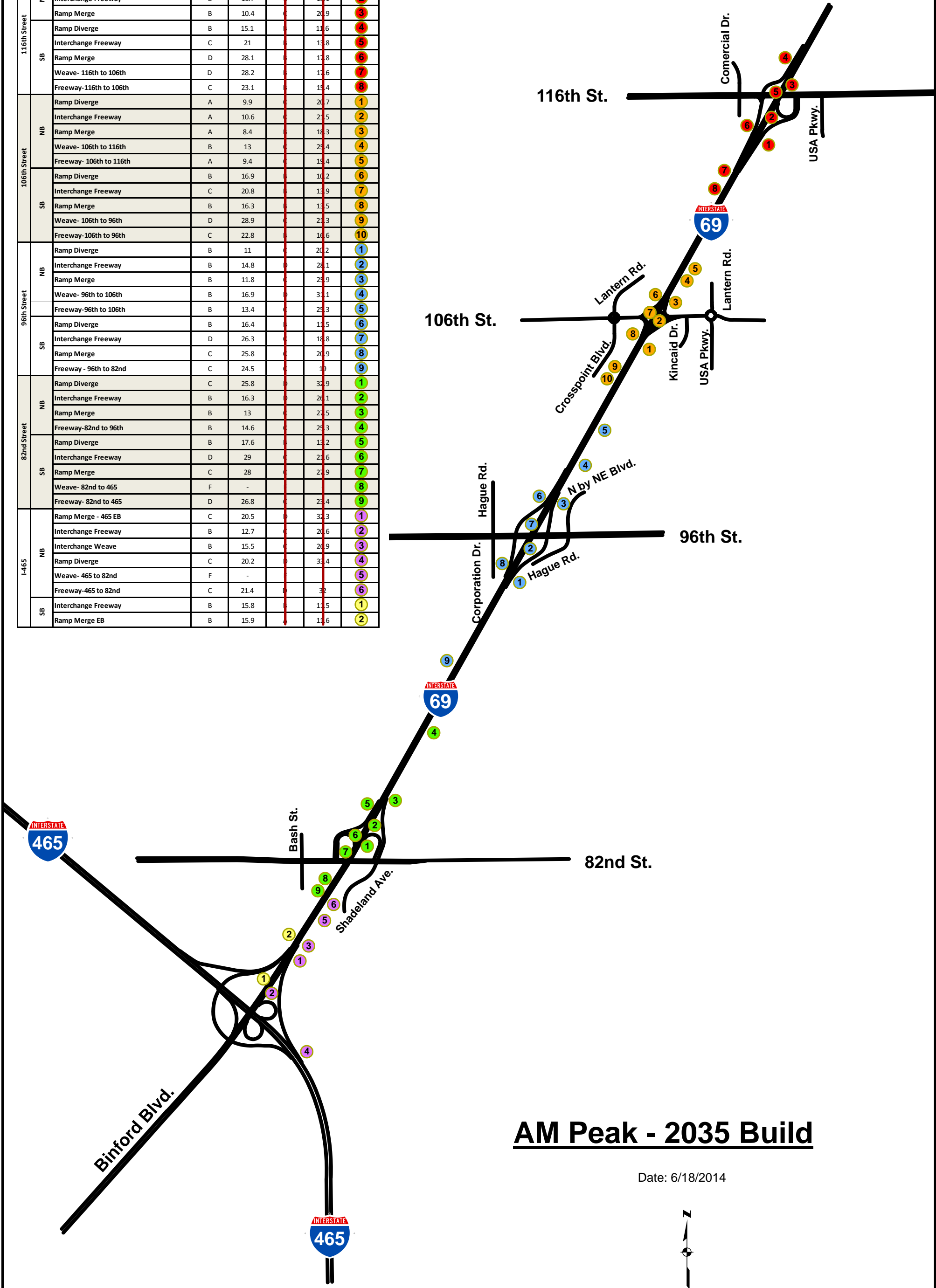


PM Peak - 2035 Build

Date: 6/18/2014

Build			Year 2035				
			AM Peak		PM Peak		
			LOS	Density	LOS	Density	
116th Street	NB	Ramp Diverge	A	6		17.8	1
		Interchange Freeway	B	11.7		18.1	2
		Ramp Merge	B	10.4		20.9	3
	SB	Ramp Diverge	B	15.1		11.6	4
		Interchange Freeway	C	21		13.8	5
		Ramp Merge	D	28.1		17.8	6
		Weave- 116th to 106th	D	28.2		11.6	7
		Freeway-116th to 106th	C	23.1		15.4	8
106th Street	NB	Ramp Diverge	A	9.9		20.7	1
		Interchange Freeway	A	10.6		21.5	2
		Ramp Merge	A	8.4		18.3	3
		Weave- 106th to 116th	B	13		25.4	4
		Freeway- 106th to 116th	A	9.4		15.4	5
	SB	Ramp Diverge	B	16.9		10.2	6
		Interchange Freeway	C	20.8		13.9	7
		Ramp Merge	B	16.3		13.5	8
		Weave- 106th to 96th	D	28.9		21.3	9
		Freeway-106th to 96th	C	22.8		16.6	10
96th Street	NB	Ramp Diverge	B	11		20.2	1
		Interchange Freeway	B	14.8		28.1	2
		Ramp Merge	B	11.8		25.9	3
		Weave- 96th to 106th	B	16.9		31.1	4
		Freeway-96th to 106th	B	13.4		25.3	5
	SB	Ramp Diverge	B	16.4		11.5	6
		Interchange Freeway	D	26.3		18.8	7
		Ramp Merge	C	25.8		20.9	8
		Freeway - 96th to 82nd	C	24.5		19	9
82nd Street	NB	Ramp Diverge	C	25.8		32.9	1
		Interchange Freeway	B	16.3		26.1	2
		Ramp Merge	B	13		21.5	3
		Freeway-82nd to 96th	B	14.6		25.3	4
	SB	Ramp Diverge	B	17.6		13.2	5
		Interchange Freeway	D	29		21.6	6
		Ramp Merge	C	28		21.9	7
		Weave- 82nd to 465	F	-			8
		Freeway- 82nd to 465	D	26.8		23.4	9
I-465	NB	Ramp Merge - 465 EB	C	20.5		32.3	1
		Interchange Freeway	B	12.7		20.6	2
		Interchange Weave	B	15.5		26.9	3
		Ramp Diverge	C	20.2		33.4	4
		Weave- 465 to 82nd	F	-			5
		Freeway-465 to 82nd	C	21.4		32	6
	SB	Interchange Freeway	B	15.8		11.5	1
		Ramp Merge EB	B	15.9		11.6	2

Figure 4-5



AM Peak - 2035 Build

Date: 6/18/2014



The 106<sup>th</sup> Street interchange Build alternative will have a significant, positive impact on the traffic operations of the 96<sup>th</sup> Street and 116<sup>th</sup> Street interchanges and corridors. It will result in a better LOS classification for many of the intersections, and a reduction in delay for all intersections, most drastically along 116<sup>th</sup> Street. The 96<sup>th</sup> Street and 116<sup>th</sup> Street corridors currently experience operational challenges, which are only expected to get worse with time, due to anticipate traffic growth. The 106<sup>th</sup> Street Build alternative helps to alleviate some of these operational issues at the adjacent interchanges.

Synchro 7 was used to perform capacity analysis for the signalized intersections, while the roundabouts were analyzed using SIDRA Intersection 6. Synchro 7 is based on Highway Capacity Manual (HCM) equations and allows for analysis of signals in a system via its microsimulation component, Simtraffic. Microsimulation was performed to ensure upstream/downstream queuing did not inadvertently impact the results reported by Synchro.

SIDRA provides the analyst the option to select either the HCM 2010 model or the SIDRA Standard model. The HCM 2010 model is based on research on US roundabouts as described in NCHRP Report 572, Chapter 4. The HCM model employs an exponential regression model, with a basis in gap-acceptance theory, to reflect the capacity of roundabouts with up to two lanes and does not account for geometry. The SIDRA Standard model utilizes a hybrid geometry and gap-acceptance modeling approach in order to take into account the effect of roundabout geometry on driver behavior directly. The SIDRA Standard model was utilized for all roundabout capacity analyses.

In order for the SIDRA Standard model to reflect US, rather than Australian driver characteristics, the Environment Factor parameter of the model is set to 1.2 as the default. However, the Environmental Factor can be adjusted as a means of calibration. NCHRP Report 572 recognizes the importance of local calibration, stating *“because drive behavior appears to be the largest variable affecting roundabout performance, calibration of the model to account for local driver behavior and changes in driver experience over time is highly recommended to produce accurate capacity estimates.”* Considering an initial higher than average familiarity with general roundabout operations, regardless of configuration, throughout the Town of Fishers and Hamilton County, and an anticipated increase in performance based on 20 years of use, an Environment Factor of 1.1 was utilized for the design year. This method of calibration is consistent with that of the Georgia and Virginia DOT's. For comparison purposes, each of the roundabouts were analyzed using an Environmental Factor of 1.0 and 1.2 (Appendix E).

Within the interchange area of the proposed 106<sup>th</sup> Street interchange, the capacity analysis provides different results for the different interchange types being analyzed. [Table 4-11](#) summarizes the 2015, 2020, and 2035 AM and PM peak capacity analysis for interchange types associated with the 106<sup>th</sup> Street Build alternative.

Table 4-11 | 106<sup>th</sup> Street Interchange Ramp Termini – Capacity Analysis Summary

		2015				2020				2035			
		AM		PM		AM		PM		AM		PM	
106th Street		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
TD	NB Ramp Junction	A	14.0	C	21.1	A	10.0	B	13.3	B	17.2	C	32.1
	SB Ramp Junction	A	10.0	B	13.0	B	11.1	B	13.5	C	25.2	B	13.4
	Total	-	24.0	-	34.1	-	21.1	-	27.0	-	42.4	-	45.5
SPUI	Total	C	25.0	C	22.4	D	36.9	C	26.4	C	33.3	C	33.0
Roundabout	Total	A	1.6	A	2.5	A	2.0	A	3.1	A	5.8	D	28.7

LOS for signalized intersections and roundabouts are based on the average delay per vehicle in seconds; however, the thresholds are different between signalized intersections and roundabouts with more delay allowed for a signal than a roundabout, for the same LOS. This is due to roundabout delay being evaluated following the signed controlled methodology, rather than signal control. Table 4-11 includes average delay per vehicle, in seconds, in order to provide a better comparison among the interchange alternatives. The tight diamond alternative consists of two separate traffic signals; therefore, the delay for each signalized intersection is combined to generate a total delay in order to compare it to the other interchange alternatives. The roundabout interchange operates with the least amount of delay for the AM and PM peak periods for 2015, 2020, and 2035. It is important to note, capacity analyses are performed during the peak period. Outside of these periods, especially during low-volume hours, the roundabout will perform with little to none of the forced delay that is associated with traditional signal-controlled intersections.

The schematic diagrams (Appendix A) for each of the three interchange options represent the necessary amount of thru lanes and turn lanes to provide a minimum acceptable overall traffic operation, as defined in the Frame Work Document.

Another metric that will be used to compare interchange alternatives is average travel time through the interchange (Table 4-12).

Table 4-12 | 106<sup>th</sup> Street Interchange –Travel Time

106th Street - Alternative	2015		2020		2035	
	AM	PM	AM	PM	AM	PM
TD	42.2	50.4	47.6	56.1	82.4	88.4
SPUI	35.3	52.6	52.6	58.7	129.9	178.6
Roundabout	19.4	24.4	23.1	27.6	34.5	69.5

While the roundabout interchange is anticipated to have an overall 2035 PM peak LOS “D”, the eastbound approach is expected to operate with a maximum v/c ratio greater than 1.0, resulting in an average delay of 62.9 seconds and a queue length of 810 feet. Based on this length of queue, it would back into the adjacent Crosspoint Boulevard/106<sup>th</sup> Street roundabout west of the interchange, creating an operational failure on the local network, outside of the immediate interchange area. The queue is a result of a conflict between the eastbound thru and westbound to southbound left turn movement at the west ramp junction of the interchange. Queuing is not anticipated to occur on the interchange ramps or I-69 mainline.

NCHRP Report 672, Roundabouts: An Informational Guide, Second Edition states, *“while the HCM does not define a standard for volume-to-capacity ratio, international and domestic experience suggests that volume-to-capacity ratios in the range of 0.85 to 0.90 represent an approximate threshold for satisfactory operation.”* A sensitivity analysis was performed to determine at what year the v/c ratio of the westbound approach of the interchange would reach the 0.85 and 1.0 thresholds. The 0.85 v/c threshold is reached in year 12, while the 1.0 v/c threshold is reached in year 16. The maximum average delay is 17.7 and 41.3 seconds, respectively; while maximum queue lengths, for this leg of the interchange, vary from 275.2 to 551.5 feet, which would not impact the intersection at Crosspoint Boulevard. It is proposed to construct only two lanes at this time. If queuing on the local network becomes problematic between years 12 and 16 or beyond, a third eastbound thru lane can be added to the roundabout and bridge at that time. A separate SIDRA analysis was completed, which included a third EB lane (Appendix E), and meets the LOS requirements at 20 years.

The roundabout alternative introduces a weave for the eastbound to southbound right in movement at Kincaid Drive. [Table 4-13](#) summarizes the HCS weaving analysis for this location. All weaving is anticipated to perform at an acceptable LOS.

Table 4-13 | 106<sup>th</sup> Street Roundabout Interchange Weave at Kincaid

106 <sup>th</sup> Street/Kincaid Weave	2015				2020				2035			
	AM		PM		AM		PM		AM		PM	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Roundabout	B	19.6	B	17.6	C	23.5	B	19.2	C	25.9	C	24.9

All of the interchange alternatives were investigated for potential diverge ramp queuing onto mainline I-69, which would be considered a fatal flaw. [Table 4-14](#) represents the anticipated queuing (in feet) along the I-69 diverge ramps at the adjacent interchanges. The longest average queue was reported in the table. The last column gives the distance from the ramp gore to the intersection at the local street. No ramps in the Build scenario have queuing issues onto I-69 mainline. In all but one location, average queuing is shortened with the addition of an interchange at 106<sup>th</sup> Street due to less vehicles exiting at 96<sup>th</sup> and 116<sup>th</sup> Streets and rerouting to 106<sup>th</sup> Street. All average queue lengths were shortened in future year 2035, with the exception of 2015 AM, but more importantly, no queues affect the I-69 mainline.

Table 4-14 | Adjacent Interchanges and Intersections – Queuing Summary

		2015				2020				2035				Ramp Length
		AM		PM		AM		PM		AM		PM		
116th Street	Alt.	Ave. Queue	95% Queue	Ave. Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	
I-69 SB	No Build	753	1407	690	906	633	903	682	957	881	1474	637	1135	1100
	Build	522	731	477	685	383	446	521	749	533	871	583	827	
I-69 NB	No Build	81	186	831	1330	146	247	352	472	243	436	358	693	1900
	Build	69	103	499	839	82	118	190	285	107	149	181	215	
		2015				2020				2035				Ramp Length
		AM		PM		AM		PM		AM		PM		
106th Street	Alt.	Ave. Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	
I-69 SB	(See Table 4-14)													2000
I-69 NB														2000
		2015				2020				2035				Ramp Length
		AM		PM		AM		PM		AM		PM		
96th Street	Alt.	Ave. Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	
I-69 SB	No Build	122	197	126	175	92	143	118	189	96	140	186	334	1800
	Build	55	85	58	84	65	80	73	134	85	109	70	111	
I-69 NB	No Build	74	96	144	216	140	248	525	872	117	179	816	1389	1800
	Build	114	164	124	141	81	175	131	179	90	134	147	180	

Since the queue lengths are taken from microsimulation analysis, there is some variation among the results depending on the particular microsimulation run. All of the reported queue lengths are well within the limits of the ramps and are not anticipated to provide any operational challenges for mainline I-69.

Table 4-15 | 106th Street Interchange Ramp Termini – Queuing Summary

		2015				2020				2035			
		AM		PM		AM		PM		AM		PM	
106th Street &	Alternative	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue	Average Queue	95% Queue
I-69 SB	TD	136	193	76	117	74	118	101	199	104	133	117	157
	SPIU	50	79	77	118	61	88	96	119	103	160	110	144
	Roundabout	NA	42	NA	33	NA	59	NA	41	NA	153	NA	104
I-69 NB	TD	47	77	64	93	67	84	80	119	76	125	76	129
	SPIU	30	65	56	90	35	50	65	79	56	97	106	150
	Roundabout	NA	5	NA	14	NA	7	NA	14	NA	17	NA	27

Table 4-15 represents the queuing at the 106<sup>th</sup> Street Interchange ramps with the three alternatives. The queue lengths do not impact the operations of I-69 mainline. The single point alternative performed better than tight

diamond in all years, except for I-69 south bound in 2035. The roundabout performs better in the AM peak hour than the other two alternatives, but similar in the PM peak hour.

#### 4.3.6 Cost Estimates

Full quantity take-offs were performed for each alternative including all expected pay items. Cost estimates for the interchange alternatives were prepared using INDOT's OMAN cost estimating application and are included in [Appendix D](#) with a summary in [Table 4-16](#). The estimates provided represent costs in construction year 2016. The United Team also used real estate acquisition personnel to estimate preliminary right-of-way costs for the interchange alternatives.

Table 4-16 | Estimated Construction Costs

Summary of Estimated Construction Costs	Tight Diamond	SPUI	Roundabout
<b>Estimated Road Cost</b>	\$23.4 million	\$24.5 million	\$24.1 million
<b>Estimated Bridge Cost</b>	\$4.7 million	\$6.4 million	\$5.5 million
<b>Estimated Right of Way Costs</b>	\$3.9 million	\$5.1 million	\$4.3 million
<b>Estimated Total Const. Costs</b>	\$31.3 million	\$36.0 million	\$33.9 million

#### 4.3.7 Interchange Alternatives Comparison

Table 4-17 compares the interchange alternatives on criteria commonly considered when choosing a preferred interchange configuration. Traffic capacity and overall cost are the most critical components in the decision-making process; however, the other criteria listed in the table can be used to supplement the overall decision making.

Table 4-17 | Interchange Alternatives Comparison

Criteria	Tight Diamond	SPUI	Roundabout	DDI
<b>Total Cost</b>	\$31.3 million	\$36.0 million	\$33.9 million	\$35.0 Million
<b>Right of Way Impacts</b>	9.0 acres	10.7 acres	9.5 acres	10.1 acres
<b>2035 Peak Hour Capacity Results (average delay)</b>	AM: 42.4 seconds PM: 45.5 seconds	AM: 33.3 seconds PM: 33.0 seconds	AM: 5.8 seconds PM: 28.7 seconds	AM East: 29.7 sec. AM West: 19.2 sec. PM East: 44.3 sec. PM West: 24.8 sec.
<b>24 Hour Operations</b>	Signal timings can be optimized during off-peak hours, but delay is unavoidable.	Signal timings can be optimized during off-peak hours, but delay is unavoidable.	Will operate with little to no delay off peak.	Signal timings can be optimized during off-peak hours, but delay is unavoidable.
<b>Future Expansion</b>	Bridge can be widened relatively easily in the future. Signal timings can be adjusted with changing traffic patterns.	Difficult and costly to expand the bridge.	Bridge can be widened relatively easily to provide third lane thru roundabout in the future.	Similar to SPUI, difficult and costly to expand the bridge.
<b>Driver Expectancy</b>	Common interchange configuration – high driver expectancy.	Not as common as traditional diamond; however, familiarity with nearby I-465/Allisonville Road interchange – medium driver expectancy.	Not a common interchange configuration; however, strong local familiarity with roundabouts and Keystone Parkway. 106 <sup>th</sup> Street is a roundabout corridor - medium driver expectancy.	No DDI interchanges exist in this area; however, DDI will be constructed along I-65 south of Greenwood, IN.

The roundabout interchange is the preferred alternative. It minimizes average vehicular delay during the peak hours and provides a “low to no” delay solution during non-peak hours. The roundabout interchange cost falls between the other two alternatives. It conforms to the existing pattern of roundabouts along 106<sup>th</sup> Street.

#### 4.4 Policy Point #4

*"Policy Point 4: The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d))."*

The proposed interchange provides full access to and from I-69 at 106<sup>th</sup> Street. 106<sup>th</sup> Street is a county road of Hamilton County and is planned to be widened to 2 lanes in each direction between Crosspoint Boulevard and USA Parkway with the addition of a new interchange.

The conceptual design of the proposed 106<sup>th</sup> Street and I-69 interchange is provided in [Appendix A](#). These figures are schematic only and have been created to approximate interchange footprint, land needs and to ensure capacity needs. The proposed design of the selected alternative will meet or exceed all design standards for an interchange according to the following industry standards:

- INDOT Design Manual
- AASHTO's A Policy on Geometric Design of Highways and Streets
- AASHTO's A Policy on Design Standards – Interstate System
- NCHRP Report 672 – Roundabouts: An Informational Guide, 2<sup>nd</sup> Edition

Key design elements not readily determined from the enclosed figures include intersection sight distance, storage on ramps, vertical clearance, length of acceleration and deceleration lanes, and spacing between ramps. Intersection sight distance will be addressed in accordance with NCHRP Report 672, Section 6.7.3. Sight distance will vary on each approach determined by the speeds resulting from the final geometric design. Ramp storage will be provided to handle the expected number of queuing vehicles determined by the capacity analyses in Appendix E. The 106<sup>th</sup> Street bridges will be constructed with a vertical clearance of 16.5 feet over I-69 in accordance with the Indiana Design Manual. The entrance and exit ramps will be constructed in accordance with INDOT's standard drawings for parallel ramp design. The spacing between exit and entrance ramps between 96<sup>th</sup> Street, 106<sup>th</sup> Street, and 116<sup>th</sup> Street is listed in AASHTO's A Policy on Geometric Design of Highways and Streets Exhibit 10-68 as 1600 feet for a system to service interchange. The final, designed ramps are expected to significantly exceed this value, estimated at approximately 3000 feet.

Pedestrian access is depicted on the Appendix A figures and will consist of an eight foot sidewalk along the north side of 106<sup>th</sup> Street only, which has the lowest entering and exiting traffic volumes at the interchange. Adequate sight distance will be provided for traffic to see pedestrians. Lighting is planned along 106<sup>th</sup> Street to enhance pedestrian safety. No pedestrian actuation will be provided.

All interchange geometric criteria will be reviewed and implemented during preliminary design and submitted for approval as a formal "Interchange Geometrics" submission to INDOT and FHWA.

#### 4.5 Policy Point #5

*"Policy Point 5: The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93."*

The Indianapolis Metropolitan Planning Organization (MPO) has been included in the initial coordination with FHWA and INDOT for this proposed new interchange at I-69 and 106<sup>th</sup> Street. Per the Indianapolis MPO's request, a copy of this IJ Report was given to the Indianapolis MPO at the same time it was submitted to FHWA on August 5<sup>th</sup>. The new interchange is planned to be adopted into the Indianapolis MPO's Long-Range Transportation Plan. A new interchange at 106<sup>th</sup> Street conforms to existing planning documents developed by the Town of Fishers. A meeting was held with the MPO on August 27, 2014 to amend the TP and have the project included in the TIP/STIP.

#### 4.6 Policy Point #6

*“Policy Point 6: In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111).”*

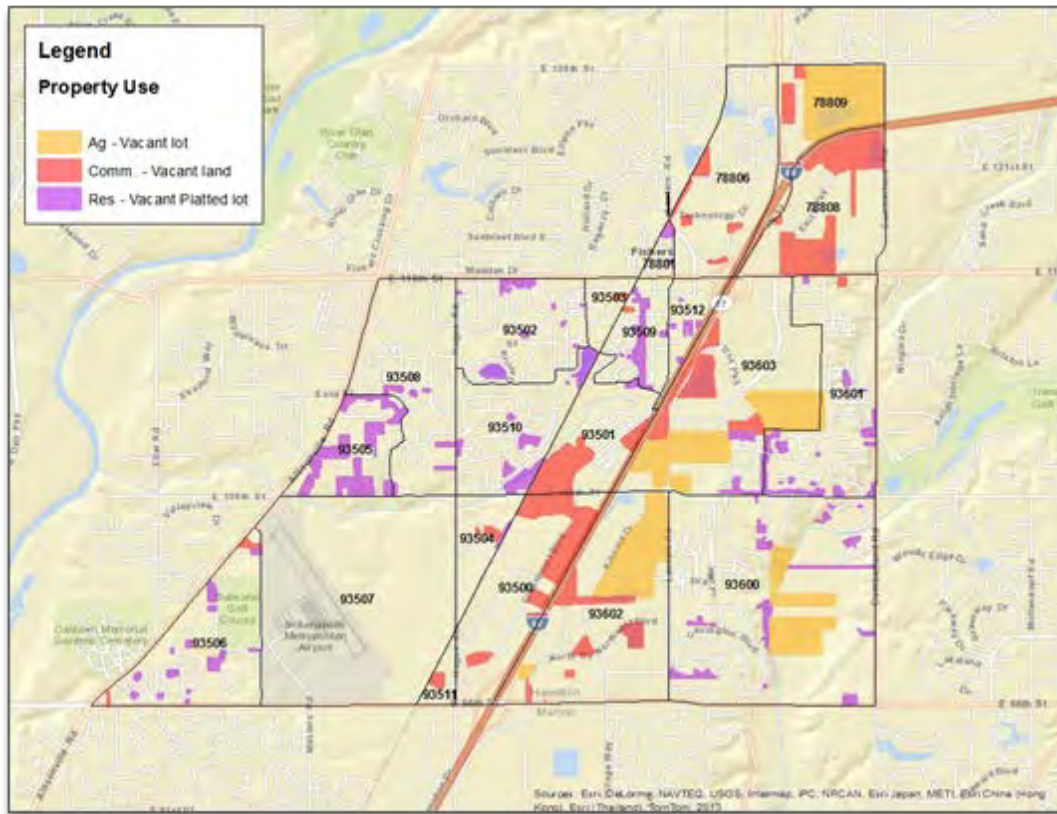
The proposed interchange at 106<sup>th</sup> Street is the only interchange that can be added to this section of the corridor between I-465 and I-69/US 37 split. Interchanges currently exist at I-465, 82<sup>nd</sup> Street, 96<sup>th</sup> Street, and 116<sup>th</sup> Street.

#### 4.7 Policy Point #7

*“Policy Point 7: When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).”*

Land Use analysis has been performed to provide inputs into the travel demand model for realistic growth projections for the project. A screening process was performed to identify developable parcels. The Town of Fishers provided GIS shape files including zoning, floodplains, and aerial photography for use in the screening process. The first step in the screening process was to identify vacant parcels in the zoning shape file. The next step was to identify planned urban development (PUD) parcels in the zoning shape file. Aerial photography was used to verify the status of all parcels. Any area within a floodplain was assumed undevelopable. Small parcels that serve as utility easements, driveways, etc. were assumed undevelopable. Protected parcel zonings, including open space, were assumed undevelopable. The Town of Fishers Downtown Illustrative Master Plan includes specific plans for development that were incorporated in the analysis. Vacant parcels were then assumed to develop with similar uses and densities as the existing development. For example, the vacant ground in the southeast quadrant of the proposed I-69/106<sup>th</sup> Street interchange was assumed to develop with 3-story office buildings, with the same proportion of parking, infrastructure, storm water detention, etc., similar to the existing development on that site. Vacant parcels in residential areas were assumed to develop with residential with similar densities. [Figure 4-6](#) illustrates the type of information used for the analysis.

Figure 4-6 | Vacant Lots



Source: Town of Fishers Zoning GIS Shape file, Indiana State Travel Demand Model TAZ

#### 4.8 Policy Point #8

*"Policy Point 8: The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing (23 CFR 771.111)."*

The proposed interchange at 106<sup>th</sup> Street and I-69 has an environmental classification of an Environmental Assessment (EA). The EA for the interchange will be completed in accordance with the NEPA process. Work on the EA for the interchange has been occurring concurrently with this IJ Report and is scheduled to be completed in Spring 2015.

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## 5.0 SUMMARY AND RECOMMENDATIONS

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The finding of this report is that additional access on Interstate 69 at 106<sup>th</sup> Street will have limited environmental impacts and positive operational and safety impacts to the roadway network. This project is supported by the local and state agencies and consistent with long-term transportation and land-use plans developed by Hamilton County and the Town of Fishers. The project will increase operational efficiency by relieving congestion at the existing interchanges, improve traffic safety along the I-69 corridor, enhance regional transportation network connectivity, and support the existing land uses.

The proposed interchange at 106<sup>th</sup> Street satisfies each of the eight FHWA policy points for new access onto the interstate system.

The preferred alternate is a Roundabout Interchange at 106<sup>th</sup> Street over Interstate 69. This alternative has superior traffic and safety operations and fewer environmental and right-of-way impacts than the other alternatives considered.

# **Appendix H**

## Water Resources

# **Waters of the U.S. Determination Form**

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Designation Number 1298035

I-69 New Interchange at 106<sup>th</sup> Street ♦ Fishers, Indiana

Prepared for:

*Indiana Department of Transportation*

Prepared by:

*Corradino LLC*

*Kirk Roth*

July 31, 2015

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### Appendix

Appendix A – Aerial Photo, Project Location, and Water Resources

Appendix B – Relevant Excerpts from United Consultants Waters of the U.S. Report on Operation Indy Commute (OIC)

Appendix C – Wetland Mapping and Datasheets

Appendix D – Photo Log and Site Photos

Appendix E – Preliminary Jurisdictional Determination Form

# 1. Introduction

## Field Work Dates:

Field work for this report was conducted on October 24, 2013, September 10, 2014, and July 15, 2015, by Corradino, LLC.

**Contributors:** Kirk Roth, Environmental Scientist

## Project Location:

Fishers Quadrangle

Sections 1 and 12 of Township 17 North, Range 4 East

Hamilton County, Indiana

## Project Description:

The Indiana Department of Transportation proposes to construct a new interchange at I-69 at 106<sup>th</sup> Street. This project is part of a set of improvements to I-69 under Operation Indy Commute (OIC). During June of 2012, United Consulting produced a Waters of the U.S. Report for Operation Indy Commute (included in Appendix B). While the OIC Waters Report did not specifically address the 106<sup>th</sup> Street interchange, wetlands within the proposed project area were included as part of the report.

# 2. Project Site Background

## Topographic Data

The Fishers, Indiana USGS 7.5 Topographic Map indicates the land use surrounding the investigation area is primarily commercial development. No streams were indicated within the investigation area.

## Soil Data

The Natural Resources Conservation Service (NRCS) – Hamilton County Soil Survey and Marion County Soil Survey identifies the project corridor as having three soil types. A copy of the Soil Survey Map is attached in Appendix page A-5. The following table lists each soil type and indicates if it is shown on the NRCS Hydric Soils List for Indiana.

*Table 1: Soil Types*

Soil Name	Hydric
Brookston silty clay loam	Yes
Crosby silt loam	No
Miami silt loam	No

A brief description of each soil series is provided below:

- *Brookston Series* – The Brookston series consists of very deep, poorly drained soils formed in up to 51 cm (20 inches) of silty material and the underlying loamy till in depressions on till plains and moraines. Slope gradients range from zero to three percent. The soils formed in loamy till of Wisconsinan age.
- *Crosby Series* – The Crosby series consists of very deep, somewhat poorly drained soils that are moderately deep to dense till. Crosby soils formed in as much as 56 cm (22 inches) of loess or other silty material and in the underlying loamy till. They are on till plains. Slope ranges from zero to six percent. Depth to the top of an intermittent perched high water table ranges from 15 to 61 cm (0.5 to 2.0 feet) during the winter and spring in normal years. Potential for surface runoff is low or medium.
- *Miami Series* – The Miami series consists of very deep, moderately well drained soils that are moderately deep to dense till. The Miami soils formed in as much as 46 cm (18 inches) of loess or silty material and in the underlying loamy till. They are on till plains. Slope ranges from zero to 60 percent. Potential for surface water runoff is medium on the gentle slopes and high on the steeper slopes. Saturated hydraulic conductivity is moderately high in the solum and moderately low or low in the underlying dense till. Permeability is moderate in the upper part of the solum, moderately slow in the lower part of the solum, and slow or very slow in the underlying dense till.

### National Wetland Inventory Map

The National Wetland Inventory (NWI) map indicates no wetland areas exist within the project corridor. A copy of the corresponding NWI data is attached in Appendix A.

## 3. Site Reconnaissance

Site reconnaissance was conducted on October 24, 2013, September 10, 2014, and July 15, 2015, by Corradino, LLC. The purpose of the reconnaissance was to verify the wetlands and boundaries identified in the OIC report, as well as to search for wetlands which may have developed since the completion of the report. Within the area of the 106<sup>th</sup> Street interchange, the OIC report lists three wetlands, and names them Wetland C, Wetland D, and Wetland F. The OIC terminology was retained for the purposes of this report. Some of the original OIC wetland boundaries were expanded, based on field observations. A fourth wetland, not treated in the OIC report, was determined to be impacted by project right-of-way and named Wetland G during the field investigation. Wetland G was associated with some non-wetland open water, and this open water is treated here as well. Aside from these waters, no areas within the proposed 106<sup>th</sup> Street right-of-way were found to have potential wetland conditions. Wetland mapping and datasheets are displayed in Appendix C.

## Wetland C

Wetland C is located approximately 350 feet north of 106<sup>th</sup> Street along the east side of northbound I-69. This wetland is bordered by a mowed roadway embankment to the north. The wetland has outlets into roadside ditches to the north and south. The ditches lack an OHWM or normal water flow. This area is an emergent wetland. The entire 0.14 acre wetland is expected to be impacted by permanent right-of-way.

- **Vegetation** – Wetland C is a cattail (*Typha latifolia*) dominated marsh with scattered patches of hydrophytic grasses and rushes.
- **Soils** – Soils in Wetland C showed a depleted matrix and are considered hydrophytic.
- **Hydrology** – Several indicators support wetland hydrology. Most notable were soil saturation, a sparsely vegetated concave surface, and the presence of reduced iron in the soil.

## Wetland D

Wetland D is located approximately 140 feet southwest of 106<sup>th</sup> Street along the west side of southbound I-69. This wetland is bordered by a mowed roadway embankment to the east and the toe of the slope to the 106<sup>th</sup> Street Bridge to the north. The wetland is occasionally disturbed by mowing. The wetland has outlets into roadside ditches located to the south and north. The ditches lack an OHWM or normal water flow. This area is an emergent wetland. 0.08 acres of the 0.12 acre wetland is expected to be impacted by permanent right-of-way.

- **Vegetation** – Wetland D is a cattail (*Typha latifolia*) dominated marsh with other hydrophytic plants, especially *Phalaris arundinacea*.
- **Soils** – Soils in Wetland D showed a depleted matrix and are considered hydrophytic.
- **Hydrology** – Several indicators support wetland hydrology. Most notable were surface water, soil saturation, iron deposits, and the presence of reduced iron in the soil.

## Wetland F

Wetland F is located approximately 140 feet southeast of 106<sup>th</sup> Street along the east side of northbound I-69, enclosed entirely within the existing I-69 right-of-way. This wetland is bordered by a mowed roadway embankment to the west. This wetland is often disturbed by mowing. The wetland has outlets into the roadside ditches located south and north of the wetland. The ditches lack an OHWM or normal water flow. This area is an emergent wetland. The entire 0.12 acres of this wetland is expected to be impacted by permanent right-of-way.

- **Vegetation** – Wetland F is dominated by *Phalaris arundinacea*, with other hydrophytic grasses – most notably *Echinochloa* – and other scattered hydrophytic species.
- **Soils** – Soils in Wetland D showed a depleted matrix and are considered hydrophytic.

- **Hydrology** – Several indicators support wetland hydrology. Most notable were shallow surface water, soil saturation, iron deposits, and the presence of reduced iron in the soil.

## Wetland G

Wetland G is the emergent fringe for a large manmade stormwater detention pond in the southeast quadrant of the 106<sup>th</sup> Street and I-69 intersection. For the purposes of this report, Wetland G consists only of the bankside wetland area plus the distance into the pond in which wetland vegetation growth is evident. Wetland conditions exist approximately two feet inland from the bank and between six and 12 feet into the pond. Beyond this area, the pond is considered open water. 0.08 acre of the 0.32-acre wetland is expected to be impacted by right-of-way. A minimal amount (0.01 acres) of this impact is due to temporary right-of-way used to restore stormwater detention, and it is likely that Wetland G will eventually expand due to this effort.

- **Vegetation** – Wetland G had a diverse assemblage of vegetation, including many hydrophytic shrubs, forbs, grasses, and sedges. Willows (*Salix* sp.) were the dominant shrub and the shoreline vegetation consisted of patches of several species, including dominant sections of *Juncus*, *Carex*, *Eleocharis*, *Phalaris*, *Bidens*, *Typha*, and others. Within the pond, *Myriophyllum* was dominant with patches of *Typha* and *Potamogeton*.
- **Soils** – Soils in Wetland D showed a depleted matrix, and are considered hydrophytic. Sampling was inhibited in some areas due to rock and/or extensive soil saturation, and signs of soil disturbance (likely occurred from the creation of the pond itself) were evident. However, all areas appeared to have darkened, depleted soils and no soils in the delineated area seemed questionable as to hydric status.
- **Hydrology** – Several indicators support wetland hydrology. Most notable were surface water, soil saturation, the presence of reduced iron in the soil, and the presence of true aquatic flora and fauna (such as fish and tadpoles).

## Open Water

There is a large manmade pond in the southeast quadrant of the 106<sup>th</sup> Street and I-69 intersection. The pond serves as stormwater control for the surrounding area and conveys to a ditch and storm sewer to the south. This storm sewer may encounter the jurisdictional Margaret O'Brian Ditch. As a stormwater control feature, this water and its associated fringe wetland (Wetland G) may be subject to Nationwide Permit 43 if loss is less than a half-acre and therefore not considered Waters of the U.S. 0.16 acres of impact is expected (0.003 of which is temporary right-of-way), although this capacity is expected to be restored with reconstruction of the retention pond to the south.

## Non-jurisdictional Ditches

Within the investigation area, I-69 is lined with non-jurisdictional roadside ditches created for the purposes of conveying stormwater away from the roadway. Some of these ditches convey water to streams outside the project limits. These ditches do not have ordinary high water marks or carry relatively permanent water flow. In many cases, they are populated by typical roadside upland plant life

(such as *Schedonorus* and *Poa* grasses, etc.) rather than wetland species, although hydrophytic species are dominant in scattered areas.

## 4. Summary and Conclusions

The OIC Waters of the U.S. Report listed Wetlands C, D, and F as jurisdictional Waters of the U.S. It should be noted that the OIC report did not specify how these wetlands were connected to navigable waters and even stated that the associated ditches were non-jurisdictional.

As an artificial pond created in an upland area for the purpose of stormwater control, Wetland G and the associated open water will be exempt from jurisdiction, provided that the loss of waters is less than half an acre (in accordance with Nationwide Permit 43). As plans stand currently, the pond is to be expanded to the south in equal measure to any right-of-way and construction impact, so no loss would occur. Note also that Nationwide Permit 43 states that, *“Management activities do not require pre-construction notification [to the USACE district engineer] if they are limited to restoring the original design capacities of the stormwater management facility.”* As a stormwater detention basin, and an incidental feature on commercial property, Wetland G and the associated open water also qualify as exempt isolated waters, in accordance with Indiana Code 13-11-2-265.

Wetlands C, D, and F exhibit conditions characteristic of wetlands as defined by the U.S. Army Corps of Engineers Wetland Delineation Manual and Midwestern Supplement. However, these wetlands show no surface connection or significant nexus to jurisdictional waters. None of these have surface connection via OHWM to any jurisdictional streams, etc. Any connective or adjacent ditches lack OHWM or continuous surface flow, and all of these wetlands are both outside of the 100-year floodplain and more than 1,500 feet from Cheeney Creek, the nearest jurisdictional water. In accordance with USACE and INDOT Office of Environmental Service guidance, these wetlands are unlikely to be Waters of the U.S. subject to Section 404 of the Clean Water Act due to the lack of connectivity to any jurisdictional water. In this area, the Louisville District of the U.S. Army Corps of Engineers has final discretionary authority over all jurisdictional determinations. Wetlands C, D, and F are associated with roadside ditches, but are not contained wholly within them. Therefore, they are likely Waters of the State of Indiana, in accordance with IC 13-11-2-265. All waters treated in this report are summarized in the table below:

*Table 2: Waters Summary Table*

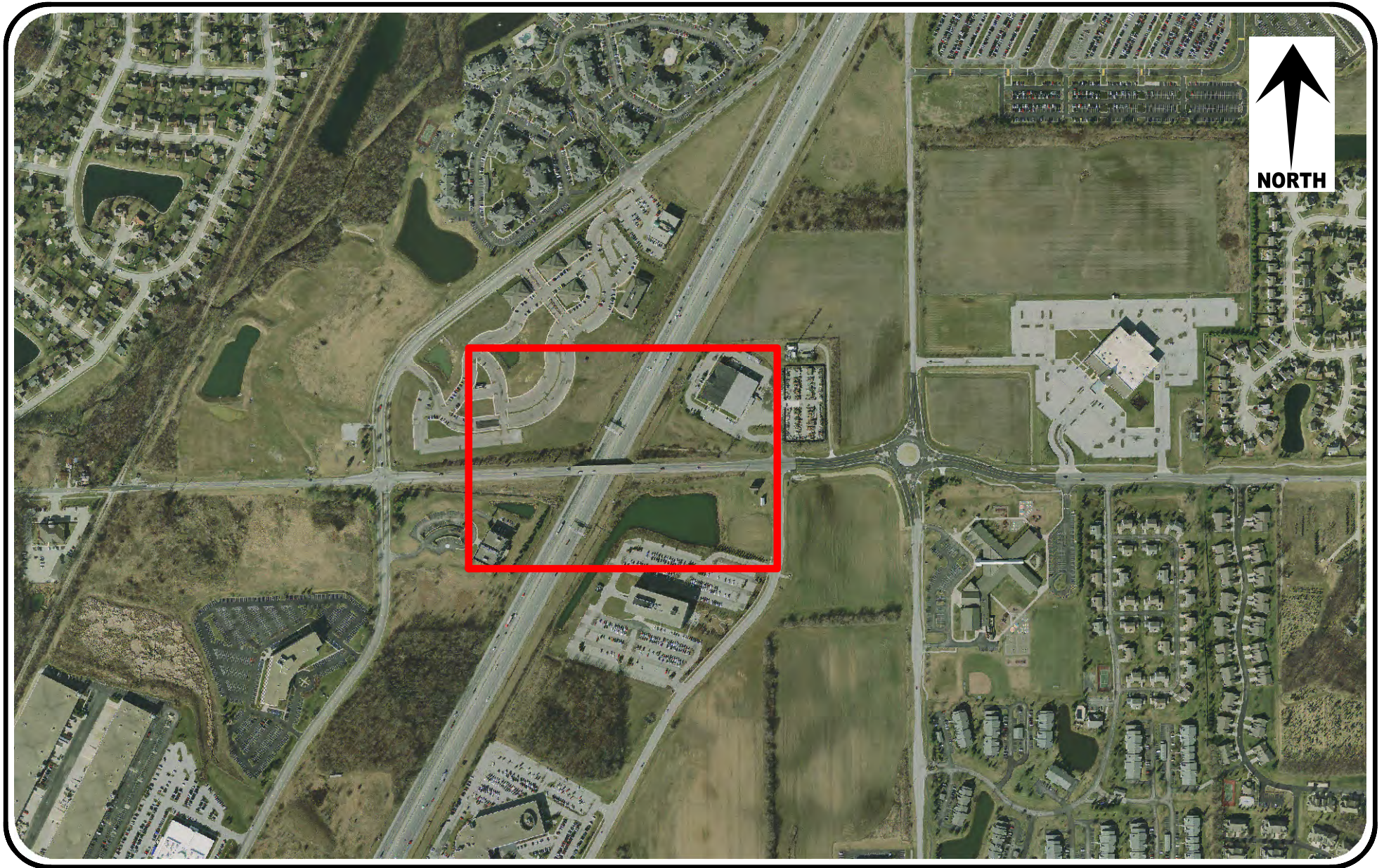
Water ID	Photo #	Coordinates	Cowardin Type	Quality	Total Acreage	Acreage Impacted	Water of U.S.	Water of the State
Wetland C	1-4	39.94298 N -86.01762 W	PEM	Poor (invasives, size)	0.14	0.14	No	Yes
Wetland D	5-6	39.94150 N -86.01960 W	PEM	Poor (invasives, size)	0.12	0.08	No	Yes
Wetland F	8-9	39.94140 N -86.01880 W	PEM	Poor (invasives, exotics, size)	0.12	0.12	No	Yes
Wetland G	12-17	39.94138 N -86.01700 W	PEM	Fair (flora and fauna, size, artificial)	0.32	0.08	No	Yes*
Open Water	12-17	39.94130 N -86.01779 W	PUB	Fair (flora and fauna, size, artificial)	2.21	0.16	No	Yes*

**\*These features are exempt because the pond is a storm water detention basin and the wetland formed due to the presence of the pond.**

# **Appendix A**


## **Aerial Photo, Project Location, and Water Resources**

# A 2012 aerial photograph showing the project location.

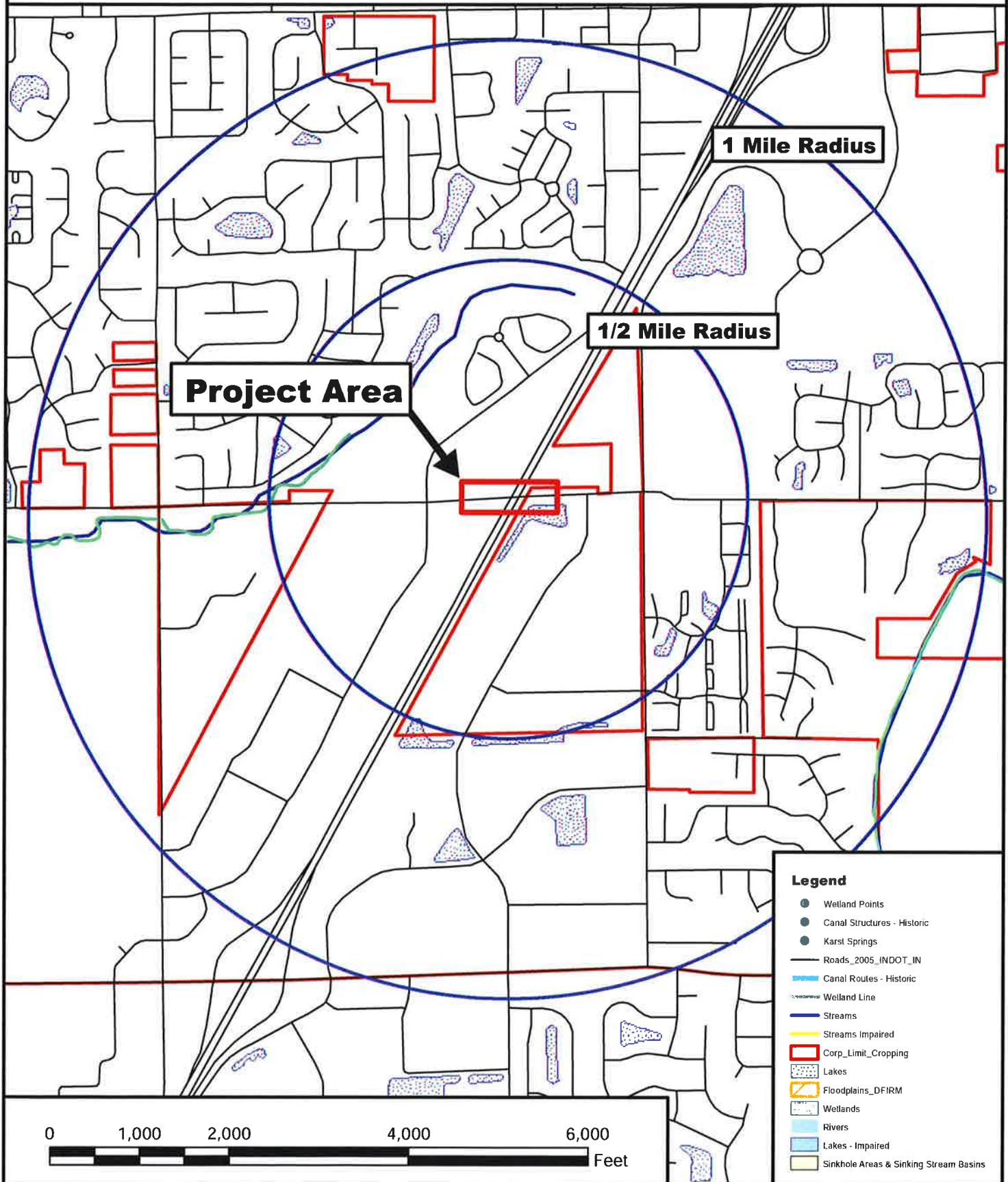


DES. NO. 1298035  
106TH STREET & I-69

Feet  
0 250 500 750 1,000



# Water Resources



# **Appendix B**

## **Relevant Excerpts from United Consultants Waters of the U.S. Report on Operation Indy Commute (OIC)**

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# Waters of the U.S. Report



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Operation Indy Commute — Items 3 and 4  
INDOT Des. No.: 1173161

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*Prepared By:*

Submitted to:  
INDOT Office of Environmental Services  
Ecology and Waterway Permits  
100 North Senate Avenue, Room N642  
Indianapolis, Indiana 46204



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1625 North Post Road  
Indianapolis, Indiana 46219-1995  
Phone: (317) 895-2585 or (800) 536-2594  
Fax: (317) 895-2596

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Please see the data sheets located in Appendix C of this document for further details regarding the characteristics of this wetland and other identified upland areas within the project limits.

### **Wetland C -**

Wetland C is located approximately 350 feet north of 106<sup>th</sup> Street along the east side of northbound I-69. This wetland is bordered by a mowed roadway embankment to the north. The wetland extends outside the limits of the study area to the east. The wetland outlets into roadside ditches to the north and south. Please see Appendix A for further location details. This area meets the definition of an emergent wetland. This wetland is approximately 0.16 acres in size. A detailed description of Wetland C has been provided below:

#### **1. Vegetation**

Wetland C contained species consistent with a emergent wetland. The species identified include *Typha latifolia* and *Schoenoplectus tabernaemontani*. All of the identified dominate plant species meet the criteria to be considered hydrophytic vegetation.

#### **2. Soils**

An onsite reconnaissance revealed the presence of hydric soils. The NRCS Hamilton County Soil Survey shows Wetland C as having Brookston silty clay loam. The soil within this wetland possesses a depleted matrix. Please see data sheet C-1 for additional details.

#### **3. Hydrology**

This area contained saturation visible on aerial imagery, surface cracks, FAC-Neutral Test, and wetland drainage patterns.

Please see the data sheets located in Appendix C of this document for further details regarding the characteristics of this wetland and other identified upland areas within the project limits.

### **Wetland D -**

Wetland D is located approximately 140 feet southwest of 106<sup>th</sup> Street along the west side of southbound I-69. This wetland is bordered by a mowed roadway embankment to the east and extends outside the study area to the west. The limits of this wetland extend beyond the study area. The wetland outlets into roadside side ditches located to the south and north. Please see Appendix A for further location details. This area meets the definition of an emergent wetland. This wetland is approximately 0.11 acres in size. A detailed description of Wetland D has been provided below:

### 1. Vegetation

Wetland D contained species consistent with a emergent wetland. The species identified include: *Typha latifolia*, *Phalaris arundinacea*, *Salix nigra* and *Vitis riparia*. All of the identified dominate plant species meet the criteria to be considered hydrophytic vegetation.

### 2. Soils

An onsite reconnaissance revealed the presence of hydric soils. The NRCS Hamilton County Soil Survey shows Wetland D as having Brookston silty clay loam. The soil within this wetland possesses a depleted matrix. Please see data sheet D-1 for additional details.

### 3. Hydrology

This area contained soil saturation, high water table, FAC-Neutral Test, and wetland drainage patterns.

Please see the data sheets located in Appendix C of this document for further details regarding the characteristics of this wetland and other identified upland areas within the project limits.

## **Wetland E -**

Wetland E is located approximately 5,000 feet north of 96<sup>th</sup> Street along the west side of southbound I-69. This wetland is bordered by a mowed roadway embankment to the east and extends outside study area to the west. Roadside ditches are located are north and south of the wetland. Please see Appendix A for further location details. This area meets the definition of a forested wetland. This wetland is approximately 0.26 acres in size. A detailed description of Wetland E has been provided below:

### 1. Vegetation

Wetland E contained species consistent with a forested wetland. The species identified include: *Fraxinus pennsylvanica*, *Lonicera maackii*, *Polygonum persicaria*, *Boehmeria cylindrica* and *Vitis riparia*. All of the identified dominate plant species meet the criteria to be considered hydrophytic vegetation.

### 2. Soils

An onsite reconnaissance revealed the presence of hydric soils. The NRCS Hamilton County Soil Survey shows Wetland E as having Brookston silty clay loam. The soil within this wetland possesses a depleted matrix. Please see data sheet E-1 for additional details.

### 3. Hydrology

This area contained soil saturation, high water table, drift deposits, water stained leaves, FAC-Neutral Test, and wetland drainage patterns.

Please see the data sheets located in Appendix C of this document for further details regarding the characteristics of this wetland and other identified upland areas within the project limits.

#### **Wetland F -**

Wetland F is located approximately 140 feet southeast of 106<sup>th</sup> Street along the east side of northbound I-69. This wetland is bordered by a mowed roadway embankment to the west and extends outside the limits of the study area to the east. The limits of this wetland extend beyond the study area. The wetland outlets into roadside ditch located south and north of the wetland. Please see Appendix A for further location details. This area meets the definition of an emergent wetland. This wetland is approximately 0.12 acres in size. A detailed description of Wetland F has been provided below:

#### 1. Vegetation

Wetland F contained species consistent with an emergent wetland. The species identified include *Phalaris arundinacea*, *Schoenoplectus tabernaemontani*, *Vitis riparia* and *Agrostis gigantea*. All of the identified dominate plant species meet the criteria to be considered hydrophytic vegetation.

#### 2. Soils

An onsite reconnaissance revealed the presence of hydric soils. The NRCS Hamilton County Soil Survey shows Wetland F as having Brookston silty clay loam. The soil within this wetland possesses a depleted matrix. Please see data sheet F-1 for additional details.

### 3. Hydrology

This area contained surface water, soil saturation, high water table, geomorphic position, FAC-Neutral Test, and wetland drainage patterns.

Please see the data sheets located in Appendix C of this document for further details regarding the characteristics of this wetland and other identified upland areas within the project limits.

stream crossings were identified during the investigation. The following table summarizes the characteristics of the streams within the project limits.

<b><i>Stream/Unnamed Trib. Reference</i></b>	<b><i>Photos</i></b>	<b><i>Stream Type</i></b>	<b><i>OHWL Width</i></b>	<b><i>OHWL Depth</i></b>	<b><i>USGS Blue Line</i></b>	<b><i>Likely Waters of the U.S.</i></b>
<b>UNT #1</b>		Ephemeral	18 inches	3 inches	No	Yes
<b>Howland Ditch</b>		Perennial	4.5 feet	10 inches	Yes	Yes
<b>UNT to Heath Ditch</b>		Perennial	7 feet	16 inches	No	Yes
<b>Margaret O'Brien Drain</b>		intermittent	3 feet	8 inches	No	Yes
<b>Cheaney Creek</b>		Perennial	8 feet	20 inches	No	Yes

In addition to the above-listed information, each stream was further classified as ephemeral, intermittent or perennial. A description of each stream classification has been provided below:

#### 1) Ephemeral Streams:

Ephemeral stream means a feature that carries only stormwater in direct response to precipitation with water flowing only during and shortly after large precipitation events. An ephemeral stream may or may not have a well-defined channel, the aquatic bed is always above the water table, and stormwater runoff is the primary source of water. An ephemeral stream typically lacks the biological, hydrological, and physical characteristics commonly associated with the continuous or intermittent conveyance of water.

#### 2) Intermittent Streams:

Intermittent stream means a well-defined channel that contains water for only part of the year (30% to 90% of the year), typically during winter and spring when the aquatic bed is below the water table. The flow may be heavily supplemented by stormwater runoff.

#### 3) Perennial Streams:

Perennial stream means a well-defined channel that contains water year round during a year of normal rainfall with the aquatic bed located below the water table for most of the year. Groundwater is the primary source of water for a perennial stream, but it also carries stormwater runoff. A perennial stream exhibits the typical biological, hydrological, and physical characteristics commonly associated with the continuous conveyance of water.

### 5) Summary and Conclusions:

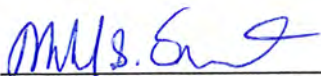
United Consulting inspected the project area on September 7, 2011 and September 29, 2011 performing a jurisdictional determination and delineation of the boundaries of "waters

of the U.S.", including wetlands. The purpose of this report is to identify areas of jurisdictional waters of the United States ("waters of the U.S."). Six emergent wetlands and one forested wetland were identified along the project corridor. These areas contain characteristics to be considered wetlands as defined by the U.S. Army Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1) and 2008 U.S. Army Corps of Engineers - Midwestern Supplement. The following table summarizes the characteristics of the wetlands within the project limits.

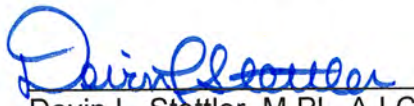
<b>Wetland ID</b>	<b>Lat/Long</b>	<b>Quality</b>	<b>Type</b>
<b>Wetland A</b>	86°2'48.391"W & 39°54'11.236"N	Poor	Emergent
<b>Wetland B</b>	86°2'39.08"W & 39°54'21.085"N	Poor	Emergent
<b>Wetland C</b>	86°1'3.461"W & 39°56'34.356"N	Poor	Emergent
<b>Wetland D</b>	86°1'7.63"W & 39°56'28.829"N	Poor	Emergent
<b>Wetland E</b>	86°1'10.178"W & 39°56'29.454"N	Fair	Forested
<b>Wetland F</b>	86°1'29.697"W & 39°55'56.802"N	Poor	Emergent
<b>Wetland G</b>	86°2'27.494"W & 39°54'33.596"N	Poor	Emergent

No additional wetlands were identified during the site visit. Five streams were identified within the study limits. Please refer to Appendix A for the detailed location of each stream and wetland. In this region, the Louisville District of the U.S. Army Corps of Engineers has final discretionary authority over all jurisdictional determinations of "waters of the U.S." including wetlands under Section 404 of the Clean Water Act (CWA).

Prepared by,  
**United Consulting**



Michael S. Oliphant, A.I.C.P.  
Environmental Specialist



Devin L. Stettler, M.Pl., A.I.C.P.  
Planning Department Manager

# **WATERS OF THE U.S. REPORT**

## **OPERATION INDY COMMUTE – ITEMS 3 AND 4**

### INDEX TO THE APPENDIX

#### APPENDIX A: GRAPHICS

STATE LOCATION MAP	A-1
USGS QUADRANGLE	A-2
FLOOD INSURANCE RATE MAP	A-3
NATIONAL WETLANDS INVENTORY MAP	A-4
MARION AND HAMILTON COUNTIES SOIL SURVEY MAP	A-5
AERIAL LOCATION MAPS	A-6 – A-13

#### APPENDIX B: RESOURCE LOCATIONS

DATA POINT LOCATION MAPS AND PHOTO ORIENTATION	B-1 – B-9
GROUND LEVEL PHOTOGRAPHS	B-10 – B-40

#### APPENDIX C: WETLAND DETERMINATION FORMS

ROUTINE DATA SHEETS	C-1 – C-40
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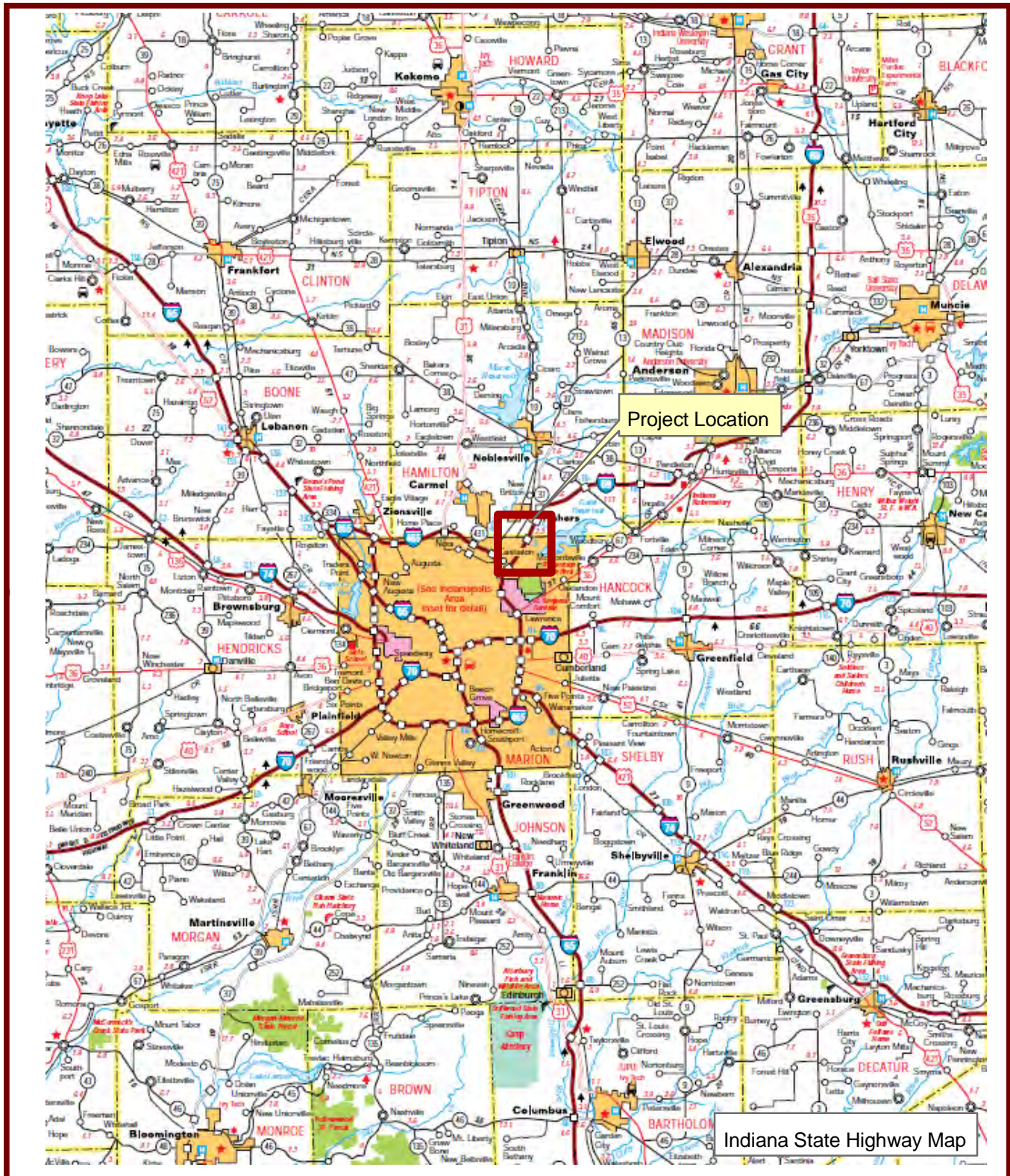
#### APPENDIX D: JURISDICTIONAL DETERMINATION FORM

PRELIMINARY JD FORM	D-1 – D-6
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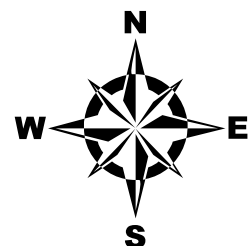
# Operation Indy Commute Waters Report

## ***Appendix A*** *Graphics*

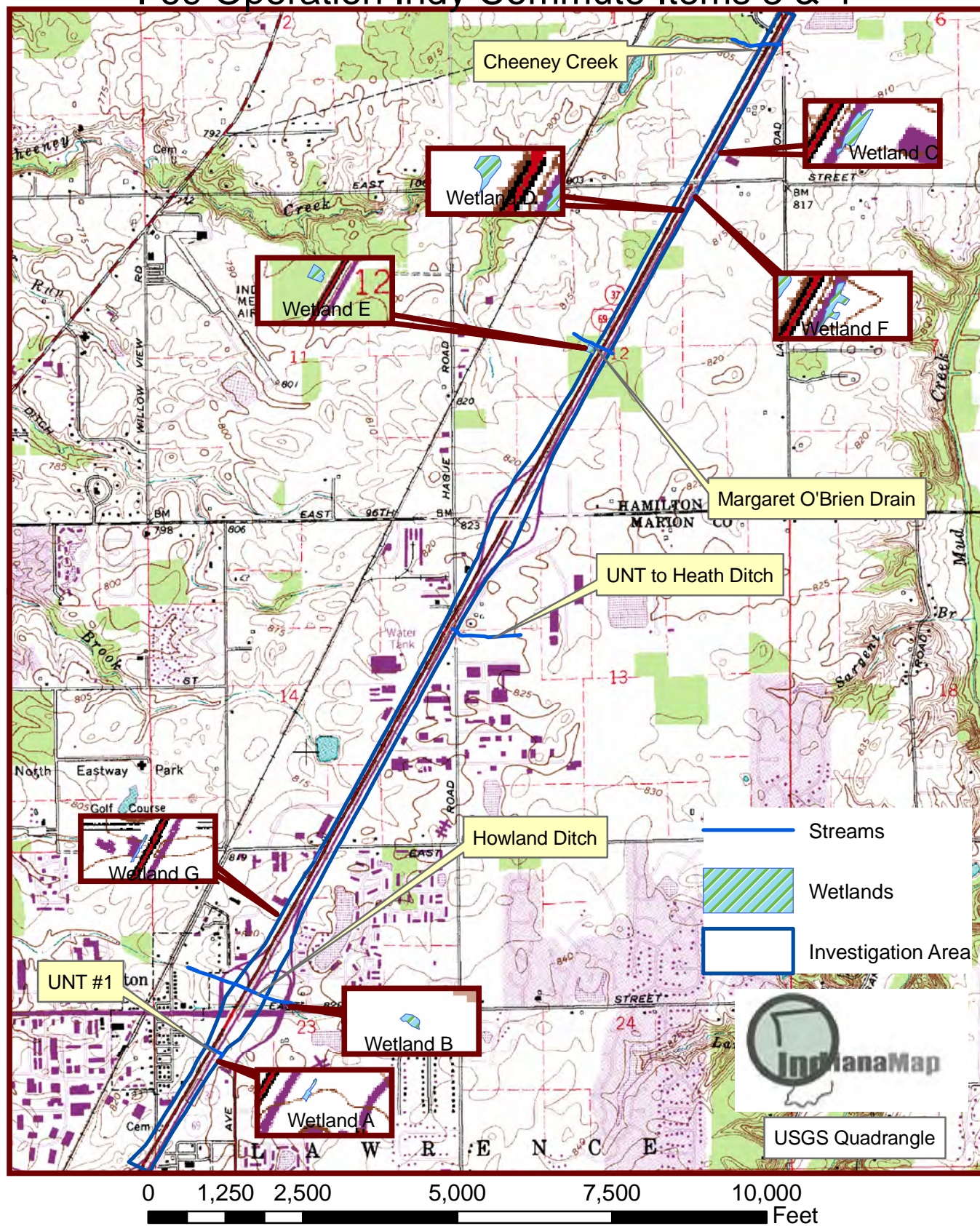
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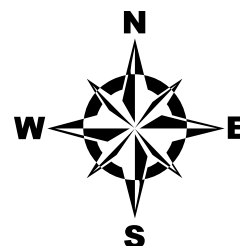


## I-69 Operation Indy Commute Items 3 & 4



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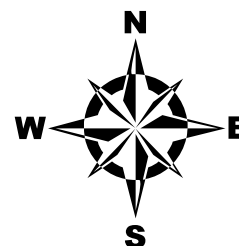


# I-69 Operation Indy Commute Items 3 & 4



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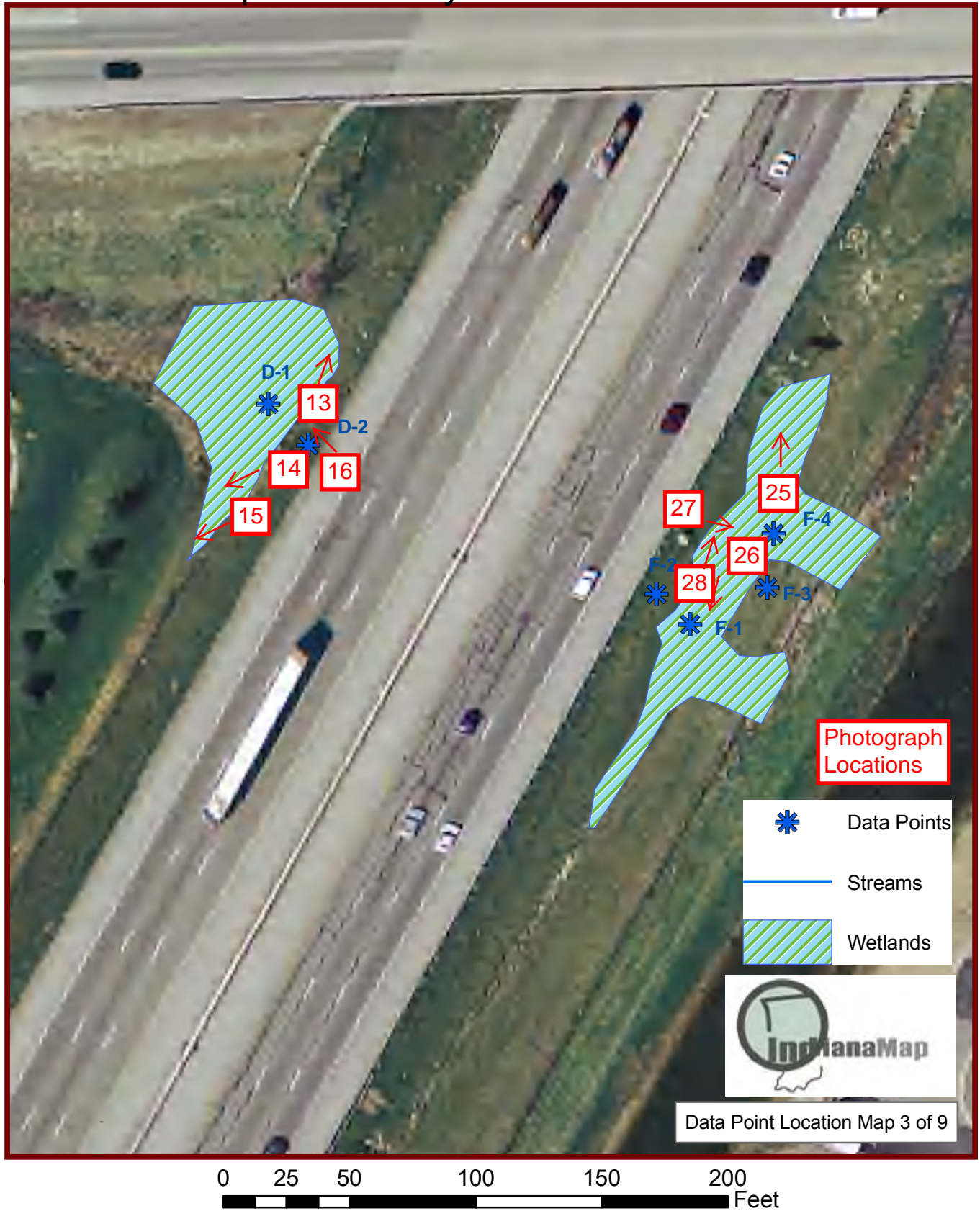
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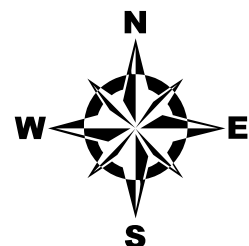
## ***Appendix B*** *Resource Locations*

# I-69 Operation Indy Commute - Items 3 & 4

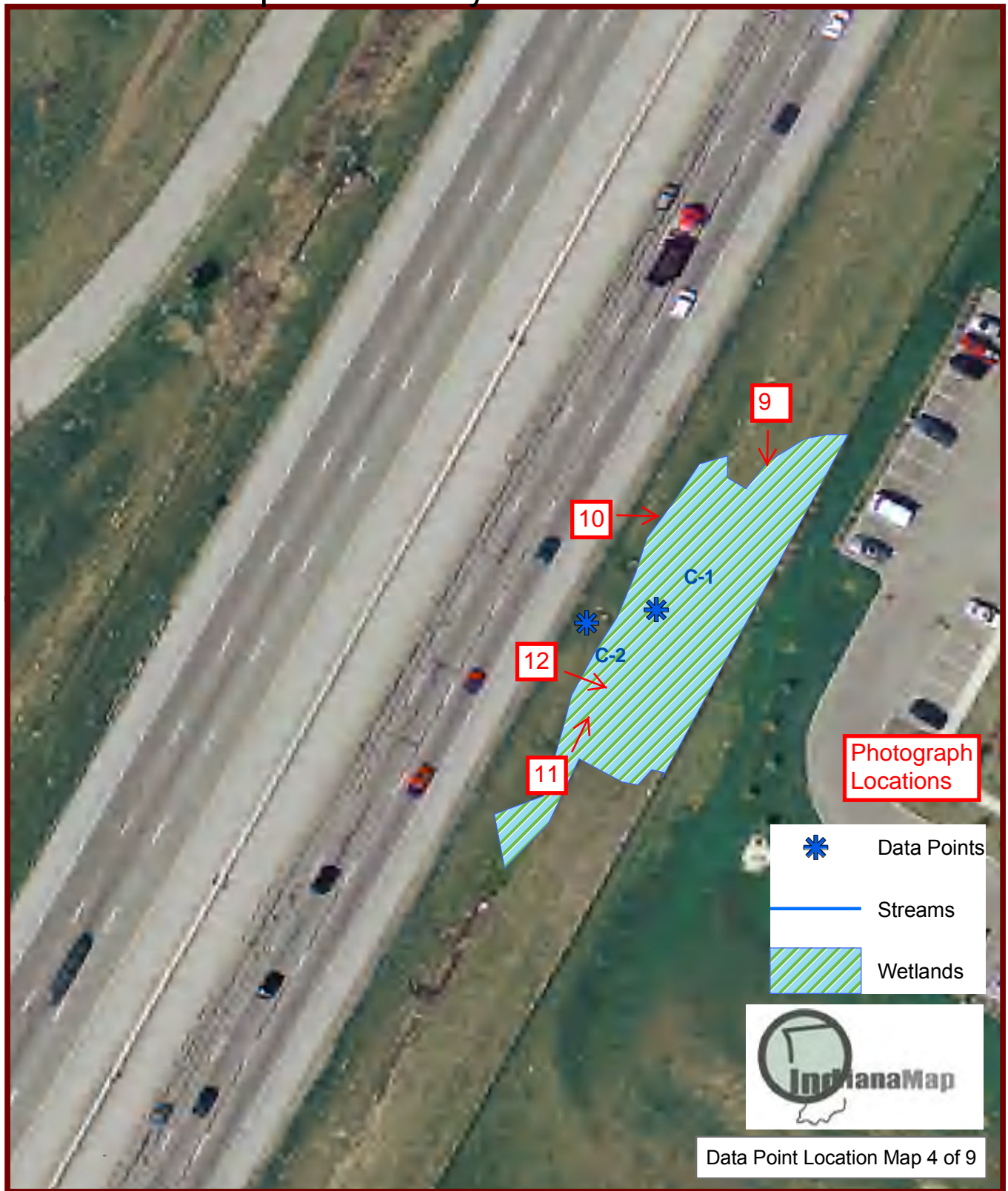


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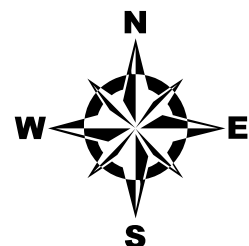


# I-69 Operation Indy Commute Items 3 & 4



## Waters of the U.S. Report

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I-69 Operation Indy Commute – Items 3 & 4  
Marion and Hamilton Counties, Indiana



Figure #9: Looking south across wetland C.



Figure #10: Looking east across wetland C.



I-69 Operation Indy Commute – Items 3 & 4  
Marion and Hamilton Counties, Indiana



Figure #11: Looking northeast across wetland C.



Figure #12: Looking southeast across wetland C.



I-69 Operation Indy Commute – Items 3 & 4  
Marion and Hamilton Counties, Indiana



Figure #13: Looking north across wetland D.



Figure #14: Looking west across wetland D.



I-69 Operation Indy Commute – Items 3 & 4  
Marion and Hamilton Counties, Indiana

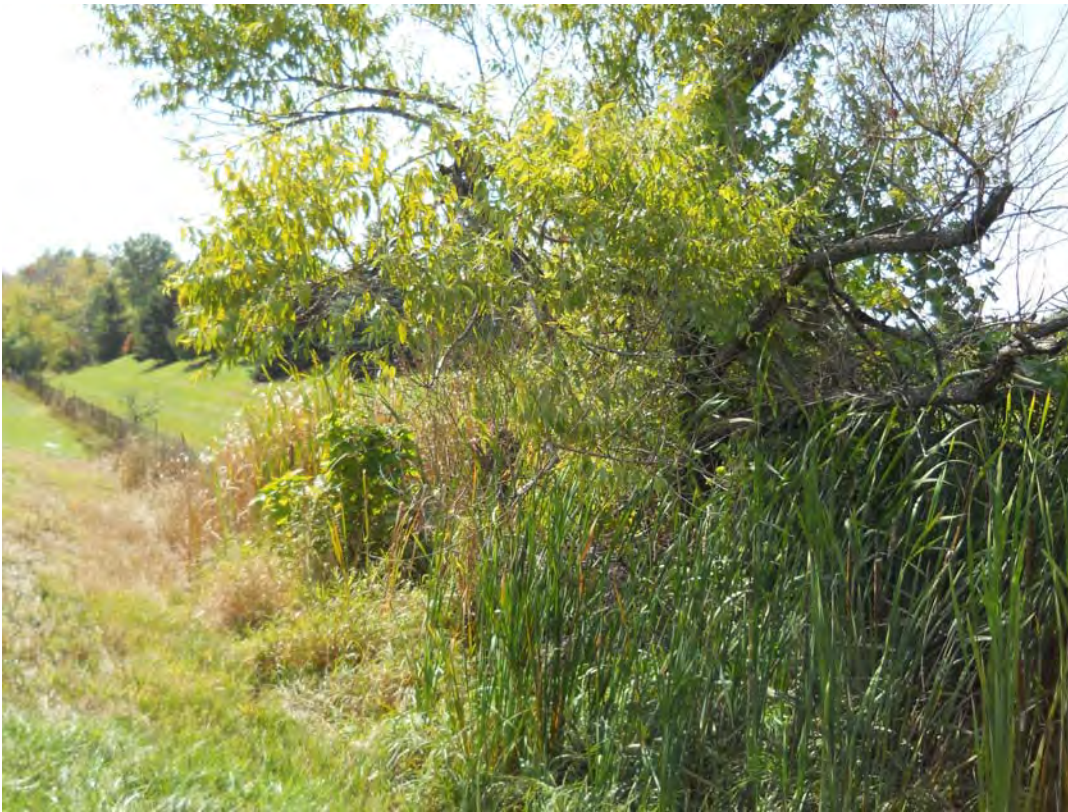


Figure #15: Looking southwest across wetland D.



Figure #16: Looking northwest across wetland D.



I-69 Operation Indy Commute – Items 3 & 4  
Marion and Hamilton Counties, Indiana



Figure #25: Looking northwest across wetland F.



Figure #26: Looking south across wetland F.



I-69 Operation Indy Commute – Items 3 & 4  
Marion and Hamilton Counties, Indiana



Figure #27: Looking northeast across wetland F.



Figure #28: Looking north across wetland F.



# Operation Indy Commute Waters Report

## ***Appendix C*** ***Routine Determination Forms***

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Operation Indy Commute - Items 3 & 4 City/County: Hamilton Sampling Date: 9/7/11  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: C-1  
 Investigator(s): Michael S. Oliphant Section, Township, Range: Section 12, Township 18 North, Range 5 East  
 Landform (hillslope, terrace, etc.): Toe of Roadside Embankment Local relief (concave, convex, none): concave  
 Slope (%): 1.0 Lat: 39.9429 Long: 86.0177 Datum: NAD 83  
 Soil Map Unit Name: Brookston silty clay loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
0 = Total Cover			

Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
0 = Total Cover			

Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. Typha latifolia	10	Yes	OBL
2. Schoenoplectus tabernaemontani	10	No	FACW
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
6. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
7. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
8. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
9. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
10. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
80 = Total Cover			

Woody Vine Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
0 = Total Cover			

Remarks: (Include photo numbers here or on a separate sheet.)

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species	x 1 = <u>0</u>
FACW species	x 2 = <u>0</u>
FAC species	x 3 = <u>0</u>
FACU species	x 4 = <u>0</u>
UPL species	x 5 = <u>0</u>
Column Totals:	<u>0</u> (A) <u>0</u> (B)

Prevalence Index = B/A = 0.00

**Hydrophytic Vegetation Indicators:**

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

## SOIL

Sampling Point: C-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 4/1	100					SL	
5-18	10YR 4/2	70	10 YR 4/4	30	C	M	SCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Remarks:

## HYDROLOGY

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one is required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Operation Indy Commute - Items 3 & 4 City/County: Hamilton Sampling Date: 9/7/11  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: C-2  
 Investigator(s): Michael S. Oliphant Section, Township, Range: Section 12, Township 18 North, Range 5 East  
 Landform (hillslope, terrace, etc.): Roadside Embankment Local relief (concave, convex, none): CONVEX  
 Slope (%): 20.0 Lat: 39.9429 Long: 86.0178 Datum: NAD 83  
 Soil Map Unit Name: Brookston silty clay loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Remarks:			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
0 = Total Cover			
Herb Stratum (Plot size: <u>5 feet</u> )			
1. <u>Digitaria ischaemum</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Setaria pumila</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Festuca rubra</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
75 = Total Cover			
Woody Vine Stratum (Plot size: <u>30 feet</u> )			
1. _____			
2. _____			
0 = Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species _____	x 1 = <u>0</u>
FACW species _____	x 2 = <u>0</u>
FAC species _____	x 3 = <u>0</u>
FACU species _____	x 4 = <u>0</u>
UPL species _____	x 5 = <u>0</u>
Column Totals: <u>0</u> (A)	<u>0</u> (B)

Prevalence Index = B/A = 0.00

**Hydrophytic Vegetation Indicators:**

☐ 1 – Rapid Test for Hydrophytic Vegetation

☐ 2 – Dominance Test is >50%

☐ 3 – Prevalence Index is ≤3.0<sup>1</sup>

☐ 4 – Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☐ No ☒

## SOIL

Sampling Point: C-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 3/3	100					SL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
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**Restrictive Layer (if observed):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Indicators for Problematic Hydric Soils<sup>3</sup>:**  
☐ Coast Prairie Redox (A16)  
☐ Dark Surface (S7)  
☐ Iron-Manganese Masses (F12)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Hydric Soil Present?**    Yes ☐    No ☒

**Remarks:**

## HYDROLOGY

Wetland Hydrology Indicators:		
<b>Primary Indicators (minimum of one is required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		

**Field Observations:**  
 Surface Water Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_  
 Water Table Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_  
 Saturation Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**Remarks:**

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Operation Indy Commute - Items 3 & 4 City/County: Hamilton Sampling Date: 9/29/11  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: D-1  
 Investigator(s): Michael S. Oliphant Section, Township, Range: Section 12, Township 18 North, Range 5 East  
 Landform (hillslope, terrace, etc.): 1 oe OT roadway slope Local relief (concave, convex, none): convex  
 Slope (%): 1.0 Lat: 39.9415 Long: 86.0195 Datum: NAD 83  
 Soil Map Unit Name: Brookston silty clay loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>10</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> OBL
2. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> OBL
3. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> OBL
4. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> OBL
5. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> OBL
<u>10</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>5</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> OBL
2. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> OBL
3. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> OBL
4. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> OBL
5. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> OBL
<u>5</u> = Total Cover			
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Phalaris arundinacea</u>	<u>60</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FACW
2. <u>Typha latifolia</u>	<u>20</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FACW
3. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
4. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
5. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
6. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
7. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
8. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
9. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
10. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
<u>80</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitis riparia</u>	<u>5</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FACW
2. _____		<input type="checkbox"/> Yes	<input type="checkbox"/> FACW
<u>5</u> = Total Cover			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>0</u> (A)	<u>0</u> (B)

Prevalence Index = B/A = 0.00

**Hydrophytic Vegetation Indicators:**

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: D-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 3/1	100					SL	
9-20	10YR 4/1	80	10YR 3/6	20	C	M	SL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

## Hydric Soil Indicators:

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Gleyed Matrix (S4)        |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Sandy Redox (S5)                |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Stripped Matrix (S6)            |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Mucky Mineral (F1)        |
| <input type="checkbox"/> Stratified Layers (A5)            | <input type="checkbox"/> Loamy Gleyed Matrix (F2)        |
| <input type="checkbox"/> 2 cm Muck (A10)                   | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6)         |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Depleted Dark Surface (F7)      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Redox Depressions (F8)          |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)      |  |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ Coast Prairie Redox (A16)  
☐ Dark Surface (S7)  
☐ Iron-Manganese Masses (F12)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

## Primary Indicators (minimum of one is required: check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                  |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Fauna (B13)                        |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> True Aquatic Plants (B14)                  |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9)                    |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   | <input type="checkbox"/> Other (Explain in Remarks)                 |

## Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)  
☒ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Stunted or Stressed Plants (D1)  
☐ Geomorphic Position (D2)  
☒ FAC-Neutral Test (D5)

X

## Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☒ No ☐ Depth (inches): 6  
 Saturation Present? Yes ☒ No ☐ Depth (inches): 2  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Operation Indy Commute - Items 3 & 4 City/County: Hamilton Sampling Date: 9/29/11  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: D-2  
 Investigator(s): Michael S. Oliphant Section, Township, Range: Section 31, Township 18 North, Range 5 East  
 Landform (hillslope, terrace, etc.): Roadside Embankment Local relief (concave, convex, none): CONVEX  
 Slope (%): 30.0 Lat: 39.9414 Long: 86.0194 Datum: NAD 83  
 Soil Map Unit Name: Crosby silt loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>Salix Nigra</u>	<u>5</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FACW	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
<u>5</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B)  Prevalence Index = B/A = <u>0.00</u>
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Setaria pumila</u>	<u>30</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FAC	
2. <u>Festuca rubra</u>	<u>20</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FACU	
3. <u>Digitaria ischaemum</u>	<u>10</u>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> FACU	
4. <u>Lactuca serriola</u>	<u>10</u>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> FAC	
5. <u>Poa pratensis</u>	<u>5</u>	<input type="checkbox"/> No	<input checked="" type="checkbox"/> FAC	
6. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
7. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
8. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
9. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
10. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
<u>75</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>
1. <u>Vitis Riparia</u>	<u>5</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FACW	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
<u>5</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: D-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10YR 4/3	100					SL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>
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Remarks: \_\_\_\_\_

## HYDROLOGY

Wetland Hydrology Indicators:		
<b>Primary Indicators (minimum of one is required: check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____		
Remarks: _____		

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Operation Indy Commute - Items 3 & 4 City/County: Hamilton Sampling Date: 9/29/11  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: F-1  
 Investigator(s): Michael S. Oliphant Section, Township, Range: Section 12, Township 18 North, Range 5 East  
 Landform (hillslope, terrace, etc.): Toe of Roadside Embankment Local relief (concave, convex, none): concave  
 Slope (%): 1.0 Lat: 39.9412 Long: 86.0189 Datum: NAD 83  
 Soil Map Unit Name: Brookston silty clay loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks:		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
0 = Total Cover			
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Phalaris arundinacea</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Schoenoplectus tabernaemontani</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
3. <u>Agrostis gigantea</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
6. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
7. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
8. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
9. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
10. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
55 = Total Cover			
Woody Vine Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitis riparia</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>
20 = Total Cover			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species _____	x 1 = <u>0</u>
FACW species _____	x 2 = <u>0</u>
FAC species _____	x 3 = <u>0</u>
FACU species _____	x 4 = <u>0</u>
UPL species _____	x 5 = <u>0</u>
Column Totals: <u>0</u> (A)	<u>0</u> (B)

Prevalence Index = B/A = 0.00

**Hydrophytic Vegetation Indicators:**

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: F-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/1	100					SCL	
5-20	10YR 4/1	70	10YR 3/6	30	C	M	SCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>
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Remarks:

## HYDROLOGY

Wetland Hydrology Indicators:	
<b>Primary Indicators (minimum of one is required; check all that apply)</b>	<b>Secondary Indicators (minimum of two required)</b>
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 0 Water Table Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 0 Saturation Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 0 (includes capillary fringe)	Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Operation Indy Commute - Items 3 & 4 City/County: Hamilton Sampling Date: 9/29/11  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: F-2  
 Investigator(s): Michael S. Oliphant Section, Township, Range: Section 12, Township 18 North, Range 5 East  
 Landform (hillslope, terrace, etc.): ROADSIDE EMBANKMENT Local relief (concave, convex, none): convex  
 Slope (%): 30.0 Lat: 39.9413 Long: 86.0190 Datum: NAD 83  
 Soil Map Unit Name: Brookston silty clay loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B)  Prevalence Index = B/A = <u>0.00</u>
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
0 = Total Cover				
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Schedonorus phoenix</u>	<u>30</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FACU	
2. <u>Digitaria ischaemum</u>	<u>20</u>	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> FACU	
3. <u>Setaria pumila</u>	<u>10</u>	<input type="checkbox"/> No	<input type="checkbox"/> FAC	
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
6. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
7. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
8. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
9. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
10. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
60 = Total Cover				
Woody Vine Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

# SOIL

Sampling Point: F-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-20	10YR 3/3	100					SL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>
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Remarks:

# HYDROLOGY

Wetland Hydrology Indicators:		
<b>Primary Indicators (minimum of one is required: check all that apply)</b>		<b>Secondary Indicators (minimum of two required)</b>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

<b>Field Observations:</b> Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present?    Yes <input type="radio"/> No <input checked="" type="radio"/>
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Operation Indy Commute - Items 3 & 4 City/County: Hamilton Sampling Date: 9/29/11  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: F-3  
 Investigator(s): Michael S. Oliphant Section, Township, Range: Section 12, Township 18 North, Range 5 East  
 Landform (hillslope, terrace, etc.): Roadside Embankment Local relief (concave, convex, none): convex  
 Slope (%): 1.0 Lat: 39.9413 Long: 86.0188 Datum: NAD 83  
 Soil Map Unit Name: Brookston silty clay loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Remarks:					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = <u>0.00</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Schedonorus phoenix</u>	<u>30</u>	Yes	FACU	
2. <u>Cirsium vulgare</u>	<u>20</u>	Yes	FACU	
3. <u>Setaria pumila</u>	<u>10</u>	No	FAC	
4. <u>Securigera varia</u>	<u>10</u>	No	FACU	
5. <u>Digitaria ischaemum</u>	<u>5</u>	No	FACU	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>75</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____				
2. _____				
<u>0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

# SOIL

Sampling Point: F-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-7	10YR 3/3	100					SCL	
8-18	10YR 4/3	90	10YR 4/4	10			SCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
---	--

**Restrictive Layer (if observed):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Indicators for Problematic Hydric Soils<sup>3</sup>:**  
☐ Coast Prairie Redox (A16)  
☐ Dark Surface (S7)  
☐ Iron-Manganese Masses (F12)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Hydric Soil Present?**    Yes ☐    No ☒

**Remarks:**

# HYDROLOGY

Wetland Hydrology Indicators:		
<b>Primary Indicators (minimum of one is required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<b>Secondary Indicators (minimum of two required)</b> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	

**Field Observations:**  
 Surface Water Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_  
 Water Table Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_  
 Saturation Present?    Yes ☐    No ☒    Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)

**Wetland Hydrology Present?**    Yes ☐    No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**Remarks:**

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Operation Indy Commute - Items 3 & 4 City/County: Hamilton Sampling Date: 9/29/11  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: F-4  
 Investigator(s): Michael S. Oliphant Section, Township, Range: Section 12, Township 18 North, Range 5 East  
 Landform (hillslope, terrace, etc.): Toe of Roadside Embankment Local relief (concave, convex, none): concave  
 Slope (%): 1.0 Lat: 39.9413 Long: 86.0188 Datum: NAD 83  
 Soil Map Unit Name: Brookston silty clay loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>	
Remarks:			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = <u>0.00</u>
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
0 = Total Cover				
Herb Stratum (Plot size: <u>5 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Phalaris arundinacea</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Eleocharis palustris</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Eleocharis smallii</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
4. <u>Typha latifolia</u>	<u>10</u>	<u>No</u>	<u>FACW</u>	
5. <u>Schoenoplectus tabernaemontani</u>	<u>5</u>	<u>No</u>	<u>OBL</u>	
6. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
7. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
8. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
9. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
10. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
70 = Total Cover				
Woody Vine Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. <u>Vitis riparia</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	
20 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

## SOIL

Sampling Point: F-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/1	100					SCL	
5-20	10YR 4/1	70	10YR 3/6	30	C	M	CL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

## Hydric Soil Indicators:

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Loamy Mucky Mineral (F1)  
☐ Loamy Gleyed Matrix (F2)  
☒ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ Coast Prairie Redox (A16)  
☐ Dark Surface (S7)  
☐ Iron-Manganese Masses (F12)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Restrictive Layer (if observed):

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☒ No ☐

Remarks:

## HYDROLOGY

## Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ☐ Surface Water (A1)  
☐ High Water Table (A2)  
☒ Saturation (A3)  
☐ Water Marks (B1)  
☐ Sediment Deposits (B2)  
☐ Drift Deposits (B3)  
☐ Algal Mat or Crust (B4)  
☐ Iron Deposits (B5)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Sparsely Vegetated Concave Surface (B8)  
☐ Water-Stained Leaves (B9)  
☐ Aquatic Fauna (B13)  
☐ True Aquatic Plants (B14)  
☐ Hydrogen Sulfide Odor (C1)  
☐ Oxidized Rhizospheres on Living Roots (C3)  
☐ Presence of Reduced Iron (C4)  
☐ Recent Iron Reduction in Tilled Soils (C6)  
☐ Thin Muck Surface (C7)  
☐ Gauge or Well Data (D9)  
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)  
☒ Drainage Patterns (B10)  
☐ Dry-Season Water Table (C2)  
☐ Crayfish Burrows (C8)  
☐ Saturation Visible on Aerial Imagery (C9)  
☐ Stunted or Stressed Plants (D1)  
☒ Geomorphic Position (D2)  
☒ FAC-Neutral Test (D5)

## Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes ☐ No ☒ Depth (inches): 8 inch  
 Saturation Present? Yes ☒ No ☐ Depth (inches): 6 inch  
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# Operation Indy Commute Waters Report

## **Appendix D** *Jurisdictional Determination Form*

## ATTACHMENT

### PRELIMINARY JURISDICTIONAL DETERMINATION FORM

#### BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 5/16/12

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:  
Michael Oliphant, United Consulting, 1625 N. Post Road, Indianapolis, IN 46219

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Louisville District, I-69 Improvements from I-465 to 116<sup>th</sup> Street

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: The Indiana Department of Transportation intends to proceed with a project involving improvements to I-69. The proposed project is located in Sections 12, 13, 14, 16, 23, 27, and 31, Townships 17 North and 18 North, Range 5 East in Marion and Hamilton Counties. The proposed project will improve the overall function and capacity of I-69 from I-465 to 116<sup>th</sup> Street. The proposed enhancements were identified in a 2011 INDOT scoping memo that discussed five improvements to the I-69 corridor from I-465 to SR 37. The improvements will be accomplished through two modifications. United Consulting performed a jurisdictional determination of the boundaries of "waters of the United States (U.S.)", including wetlands on September 7, 2011 and September 29, 2011. This report includes areas within the existing right-of-way. Seven wetlands were identified during the onsite investigation. Additionally five streams cross the study area.

#### **(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)**

State: IN County/parish/borough: Marion and Hamilton City:  
Indianapolis and Fishers  
Center coordinates of site (lat/long in degree decimal format): See table  
Universal Transverse Mercator: See Table  
Name of nearest waterbody: See Table

Identify (estimate) amount of waters in the review area:

Non-wetland waters: See table  
Cowardin Class: See table  
Stream Flow: See table  
Wetlands: See table  
Cowardin Class: See table

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal: N/A

Non-Tidal: N/A

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: 5/16/12

☐ Field Determination. Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33

C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

**SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply)**

- checked items should be included in case file and, where checked and requested, appropriately reference sources below:
  - ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: United Consulting.
  - ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
    - ☒ Office concurs with data sheets/delineation report.
    - ☐ Office does not concur with data sheets/delineation report.
  - ☐ Data sheets prepared by the Corps:
  - ☐ Corps navigable waters' study:
  - ☐ U.S. Geological Survey Hydrologic Atlas:
    - ☐ USGS NHD data.
    - ☐ USGS 8 and 12 digit HUC maps.
  - ☒ U.S. Geological Survey map(s). Cite scale & quad name: 1:24000, Fishers, Quad.
  - ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Marion and Hamilton County SSURGO data.
  - ☒ National wetlands inventory map(s). Cite name: Fishers, Quad.
  - ☐ State/Local wetland inventory map(s):
  - ☒ FEMA/FIRM maps: Marion and Hamilton County.
  - ☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
  - ☒ Photographs: ☒ Aerial (Name & Date): 2005.  
or ☒ Other (Name & Date): site photos by consultant 9/29/11.
  - ☐ Previous determination(s). File no. and date of response letter:
  - ☐ Other information (please specify):

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

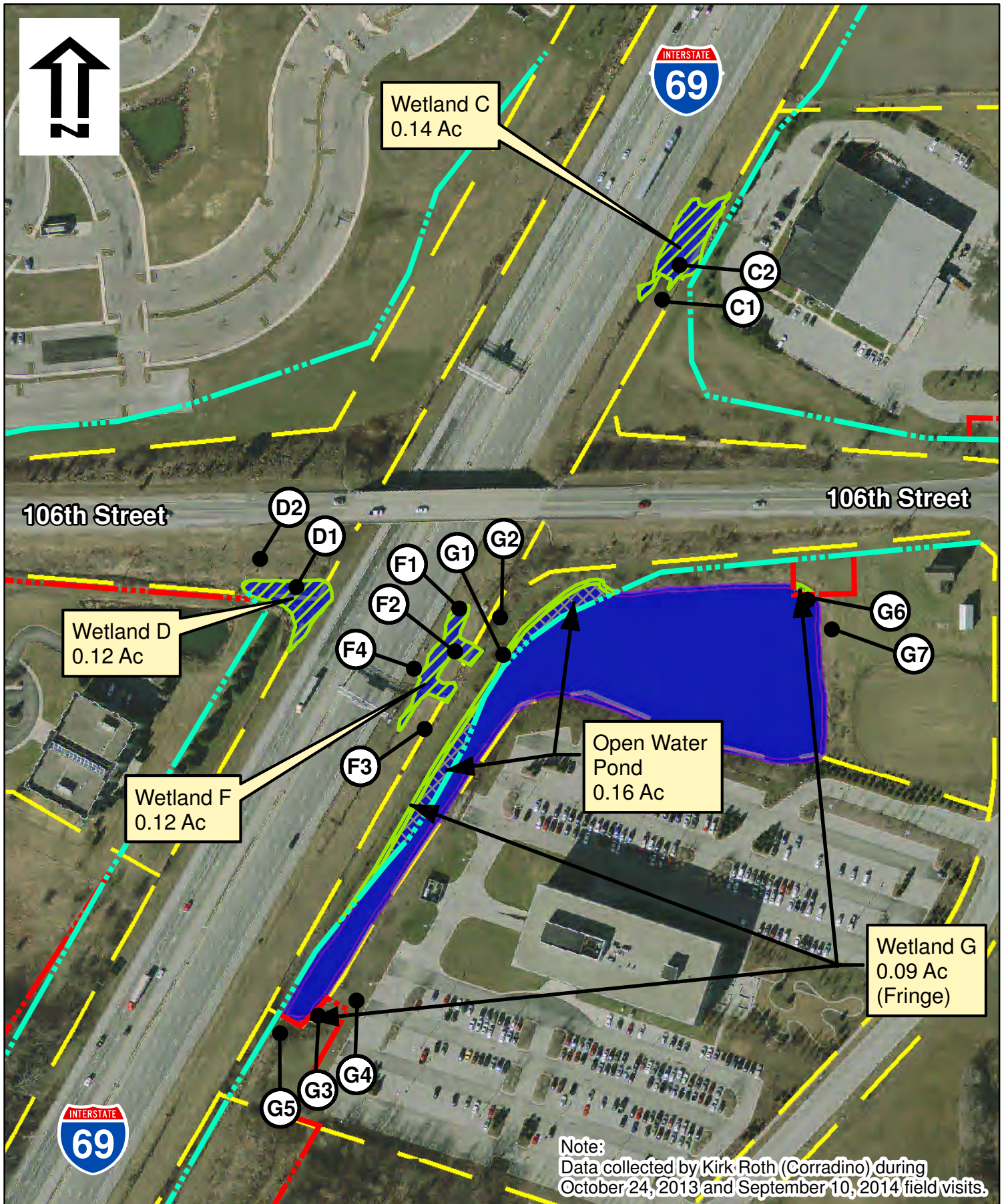
\_\_\_\_\_  
Signature and date of  
Regulatory Project Manager  
(REQUIRED)

MM 12502 6/18/12  
Signature and date of  
person requesting preliminary JD  
(REQUIRED, unless obtaining  
the signature is impracticable)

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Wetland A	39°54'11.2 36"N	86°2'48.39 1"W	PEM	0.04 acres	Non-section 10 – wetland
Wetland B	39°54'21.0 85"N	86°2'39.08" W	PEM	0.01 acres	Non-section 10 – wetland
Wetland C	39°56'34.3 56"N	86°1'3.461" W	PEM	0.16 acres	Non-section 10 – wetland
Wetland D	39°56'28.8 29"N	86°1'7.63" W	PEM	0.03 acres	Non-section 10 – wetland
Wetland E	39°56'29.4 54"N	86°1'10.17 8" W	PFO1A	0.01 acres	Non-section 10 – wetland
Wetland F	39°55'56.8 02"N	86°1'29.69 7"W	PEMA	0.12 acres	Non-section 10 – wetland
Wetland G	39°54'33.5 96"N	86°2'27.49 4"W	PEMA	0.06 acres	Non-section 10 – wetland
UNT#1	39°54'11.9 37"N	86°2'47.99 3"W	Riverine	130 feet	Non-section 10 – non-wetland

# **Appendix C**

## **Wetland Maps and Datasheets**



#### Legend

- Proposed R/W
- Temporary R/W
- Open Water Pond Impact
- Wetland Impact
- Field Delineated Wetland
- Data Point

**DES. NO. 1298035**  
**106TH STREET & I-69**  
**WETLAND DATA POINTS**  
**ROUNDAABOUT INTERCHANGE OPTION**

100 50 0 100 Feet

Aerial Imagery Flown in 2012

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 10/24/13  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: C-1  
 Investigator(s): Kirk Roth Section, Township, Range: Section 1, Township 17 North, Range 4East  
 Landform (hillslope, terrace, etc.): Toe of Roadside Embankment Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 39.94288 Long: -86.017633 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	Is the Sampled Area within a Wetland? Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	
Remarks: Vegetation, soil, and hydrology characteristics indicate wetland status.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  Total Number of Dominant Species Across All Strata: 1 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)														
1.																		
2.																		
3.																		
4.																		
5.				<b>Prevalence Index worksheet:</b> <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species 80</td> <td>x 1 = 80</td> </tr> <tr> <td>FACW species 10</td> <td>x 2 = 20</td> </tr> <tr> <td>FAC species</td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> </tr> <tr> <td>Column Totals: 90 (A)</td> <td>100 (B)</td> </tr> </table> Prevalence Index = B/A = 1.11	Total % Cover of:	Multiply by:	OBL species 80	x 1 = 80	FACW species 10	x 2 = 20	FAC species	x 3 =	FACU species	x 4 =	UPL species	x 5 =	Column Totals: 90 (A)	100 (B)
Total % Cover of:	Multiply by:																	
OBL species 80	x 1 = 80																	
FACW species 10	x 2 = 20																	
FAC species	x 3 =																	
FACU species	x 4 =																	
UPL species	x 5 =																	
Column Totals: 90 (A)	100 (B)																	
= Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: )</b>																		
1.																		
2.																		
3.																		
4.																		
5.																		
= Total Cover																		
<b>Herb Stratum (Plot size: )</b>																		
1. Typha latifolia	70	Yes	OBL	<b>Hydrophytic Vegetation Indicators:</b> X 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% X 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. Schoenoplectus tabermontani	10	10	OBL															
3. Echinochloa crus-galli	5	5	FACW															
4. Phalaris arundinacea	5	5	FACW															
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
= Total Cover																		
<b>Woody Vine Stratum (Plot size: )</b>																		
1.																		
2.																		
= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		
Rapid, Dominance, and Prevalence Tests support wetland vegetation.																		

Sampling Point: C-1

## HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

US Army Corps of Engineers

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 10/24/13  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: C-2  
 Investigator(s): Kirk Roth Section, Township, Range: Section 1, Township 17 North, Range 4East  
 Landform (hillslope, terrace, etc.): Roadside Embankment Local relief (concave, convex, none): Concave  
 Slope (%): 20 Lat: 39.94310 Long: -86.017457 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: <u>Vegetation, soil, and hydrology characteristics do not indicate wetland status.</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>0</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<u>_____</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species _____ x 5 = _____ Column Totals: <u>85</u> (A) <u>325</u> (B)  Prevalence Index = B/A = <u>3.82</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15 feet</u>)</b>				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<u>_____</u> = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum (Plot size: <u>5 feet</u>)</b>				
1. <u>Schedonorus arundinaceus</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Setaria pumila</u>	<u>10</u>	<u>No</u>	<u>FAC</u>	
3. <u>Digitaria ischaemum</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
4. <u>Lactuca serriola</u>	<u>5</u>	<u>No</u>	<u>FAC</u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>85</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>Woody Vine Stratum (Plot size: <u>30 feet</u>)</b>				
1. _____				
2. _____				
<u>_____</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) <b>Dominance and Prevalence Tests do not support wetland vegetation.</b>				

Sampling Point: C-2

## HYDROLOGY

**Wetland Hydrology Indicators:**US Army Corps of Engineers

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 10/24/13  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: D-1  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Toe of Roadway Slope Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 39.94149 Long: -86.018659 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation X, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	Is the Sampled Area within a Wetland? Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	
Remarks: Vegetation, soil, and hydrology characteristics indicate wetland status. An area of recently planted upland vegetation is considered part of this wetland, as it would likely support wetland vegetation if undisturbed.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)  Total Number of Dominant Species Across All Strata: 2 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)														
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____				<b>Prevalence Index worksheet:</b> <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species 60</td> <td>x 1 = 60</td> </tr> <tr> <td>FACW species 35</td> <td>x 2 = 70</td> </tr> <tr> <td>FAC species</td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> </tr> <tr> <td>Column Totals: 95 (A)</td> <td>130 (B)</td> </tr> </table> Prevalence Index = B/A = 1.11	Total % Cover of:	Multiply by:	OBL species 60	x 1 = 60	FACW species 35	x 2 = 70	FAC species	x 3 =	FACU species	x 4 =	UPL species	x 5 =	Column Totals: 95 (A)	130 (B)
Total % Cover of:	Multiply by:																	
OBL species 60	x 1 = 60																	
FACW species 35	x 2 = 70																	
FAC species	x 3 =																	
FACU species	x 4 =																	
UPL species	x 5 =																	
Column Totals: 95 (A)	130 (B)																	
= Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: 15 feet )</b>																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
= Total Cover																		
<b>Herb Stratum (Plot size: 5 feet )</b>				<b>Hydrophytic Vegetation Indicators:</b> X 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% X 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
1. Typha latifolia	60	Yes	OBL															
2. Rumex obtusifolius	10	No	FACW															
3. Echinochloa crus-galli	5	No	FACW															
4. Phalaris arundinacea	20	Yes	FACW															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
95 = Total Cover																		
<b>Woody Vine Stratum (Plot size: 30 feet )</b>				<b>Hydrophytic Vegetation Present?</b> Yes X No														
1. _____																		
2. _____																		
= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		
Rapid, Dominance, and Prevalence Tests support wetland vegetation. Some vegetation disturbance was present. There appeared to be some recent grass seeding on the south end, including probable Lolium perenne and fescue species. The planted area was a wet depression and the grasses had grown to 2 inches at most, possibly stunted or stressed. These seedlings were not included in vegetation analysis. Previous delineations have identified this area as wetland and it is assumed that the area would support wetland taxa if not disturbed.																		

## SOIL

Sampling Point: D-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/1	100					SCL	
5-18	10YR 4/1	75	10YR 3/5	25	C	M	SCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1)

☐ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>  Type: _____  Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:  
Indicator F3 supports hydric soil identification.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input checked="" type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:			
Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 2		
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 2		
Saturation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 2		
(includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Multiple indicators support wetland hydrology.			

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 10/24/13  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: D-2  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Roadside Embankment Local relief (concave, convex, none): Convex  
 Slope (%): 20 Lat: 39.94147 Long: -86.01865 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	
Remarks: Vegetation, soil, and hydrology characteristics do not indicate wetland status.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 3 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)
1.				
2.				
3.				
4.				
= Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species x 1 = FACW species 5 x 2 = 10 FAC species 10 x 3 = 30 FACU species 65 x 4 = 260 UPL species x 5 = Column Totals: 80 (A) 300 (B) Prevalence Index = B/A = 3.75
= Total Cover				
<b>Sapling/Shrub Stratum (Plot size: 15 feet )</b> 1. Pyrus calleryana 15 Yes NI 2. 3. 4. 5.				
= Total Cover				
<b>Herb Stratum (Plot size: 5 feet )</b> 1. Schedonorus arundinaceus 25 Yes FACU 2. Setaria pumila 5 No FAC 3. Solidago canadensis 25 Yes FACU 4. Lactuca serriola 5 No FAC 5. Dipsacus fullonum 15 No FACU 6. Cyperus esculentus 5 No FACW 7. 8. 9. 10.				
= Total Cover				<b>Hydrophytic Vegetation Indicators:</b> 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover				
<b>Woody Vine Stratum (Plot size: 30 feet )</b> 1. Toxicodendron radicans 5 Yes FAC 2.				
= Total Cover				
= Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				
Dominance and Prevalence Tests do not support wetland vegetation.				

## SOIL

Sampling Point: D-2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Wetland Hydrology Present? Yes _____ No <u>X</u>	
Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)		
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)		
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)		
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)		
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)			
Field Observations:				
Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches): _____		
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____		
Saturation Present?	Yes _____ No <u>X</u>	Depth (inches): _____		
(includes capillary fringe)				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks:				
Site characteristics do not support wetland hydrology.				

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 10/24/13  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: F-1  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Toe of Roadway Slope Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 39.941189 Long: -86.018894 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No        (If no, explain in Remarks.)  
 Are Vegetation X, Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes        No X  
 Are Vegetation       , Soil       , or Hydrology        naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u>      </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u>      </u>
Hydric Soil Present?	Yes <u>X</u>	No <u>      </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u>      </u>			
Remarks: <u>Vegetation, soil, and hydrology characteristics indicate wetland status. An area of recently planted upland vegetation is considered part of this wetland, as it would likely support wetland vegetation if undisturbed.</u>					

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																																																																																																																																																																									
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Remarks: (Include photo numbers here or on a separate sheet.)

Rapid, Dominance, and Prevalence Tests support wetland vegetation.

## SOIL

Sampling Point: F-1

<b>Profile Description:</b> (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/1	100					SCL	
5-18	10YR 4/1	75	10YR 3/5	25	C	M	SCL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ☐ Histosol (A1)                      ☐ Sandy Gleyed Matrix (S4)
- ☐ Histic Epipedon (A2)            ☐ Sandy Redox (S5)
- ☐ Black Histic (A3)                 ☐ Stripped Matrix (S6)
- ☐ Hydrogen Sulfide (A4)          ☐ Loamy Mucky Mineral (F1)
- ☐ Stratified Layers (A5)          ☐ Loamy Gleyed Matrix (F2)
- ☐ 2 cm Muck (A10)                ☒ Depleted Matrix (F3)
- ☐ Depleted Below Dark Surface (A11)   ☐ Redox Dark Surface (F6)
- ☐ Thick Dark Surface (A12)       ☐ Depleted Dark Surface (F7)
- ☐ Sandy Mucky Mineral (S1)       ☐ Redox Depressions (F8)
- ☐ 5 cm Mucky Peat or Peat (S3)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydic Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
---	---

Remarks:  
**Indicator F3 supports hydric soil identification.**

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input checked="" type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
<b>Field Observations:</b> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 1 Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 1 Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 1 (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Multiple indicators support wetland hydrology.		

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 10/24/13  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: F-2  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Roadside Embankment Local relief (concave, convex, none): Convex  
 Slope (%): 10 Lat: 39.941468 Long: -86.018647 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	
Remarks: Vegetation, soil, and hydrology characteristics do not indicate wetland status.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) Total Number of Dominant Species Across All Strata: 0 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)														
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1. _____																		
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1. Schedonorus arundinaceus	50	Yes	FACU															
2. Setaria pumila	15	No	FAC															
3. Solidago canadensis	10	No	FACU															
4. Digitaria ischmaemum	15	No	FAC															
5. _____																		
6. _____																		
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<b>Woody Vine Stratum (Plot size: 30 feet )</b>				<b>Hydrophytic Vegetation Present?</b> Yes No X														
1. _____																		
2. _____																		
= Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		
Dominance and Prevalence Tests do not support wetland vegetation.																		

## SOIL

Sampling Point: F-2

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Site characteristics do not support wetland hydrology.			

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 10/24/13  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: F-3  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Roadside Embankment Local relief (concave, convex, none): Convex  
 Slope (%): 20 Lat: 39.941325 Long: -86.018702 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	
Remarks: Vegetation, soil, and hydrology characteristics do not indicate wetland status.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 feet )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) Total Number of Dominant Species Across All Strata: 0 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)	
1.					
2.					
3.					
4.					
5.				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species x 1 = FACW species x 2 = FAC species 10 x 3 = 30 FACU species 50 x 4 = 200 UPL species x 5 = Column Totals: 60 (A) 230 (B) Prevalence Index = B/A = 3.83	
= Total Cover					
<b>Sapling/Shrub Stratum (Plot size: 15 feet )</b>					
1.					
2.					
3.					
4.					
5.					
= Total Cover				<b>Hydrophytic Vegetation Indicators:</b> 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<b>Herb Stratum (Plot size: 5 feet )</b>					
1.	Schedonorus arundinaceus	30	Yes		FACU
2.	Setaria pumila	10	No		FAC
3.	Cirsium vulgare	20	Yes		FACU
4.					
5.					
6.					
7.					
8.					
9.					
10.					
60 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes No X	
<b>Woody Vine Stratum (Plot size: 30 feet )</b>					
1.					
2.					
= Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)					
Dominance and Prevalence Tests do not support wetland vegetation.					

Sampling Point: F-3

## HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                  | <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Fauna (B13)                        | <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> True Aquatic Plants (B14)                  | <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 | <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)              | <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     | <input type="checkbox"/> FAC-Neutral Test (D5)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9)                    |  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   | <input type="checkbox"/> Other (Explain in Remarks)                 |  |

Surface Water Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_

Water Table Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_

Saturation Present? Yes \_\_\_\_\_ No X Depth (inches): \_\_\_\_\_  
(includes capillary fringe)

Wetland Hydrology Present? Yes \_\_\_\_\_ No ☒ X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Site characteristics do not support wetland hydrology.

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 10/24/13  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: F-4  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Toe of Roadside Embankment Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 39.941225 Long: -86.018802 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)  
 Are Vegetation ☒, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒  
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: <u>Vegetation, soil, and hydrology characteristics indicate wetland status. An area of recently planted upland vegetation is considered part of this wetland, as it would likely support wetland vegetation if undisturbed.</u>		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 feet</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 feet</u> )				
1. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>75</u> x 2 = <u>150</u> FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>90</u> (A) <u>165</u> (B)  Prevalence Index = B/A = <u>1.83</u>
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: <u>5 feet</u> )				
1. <u>Typha latifolia</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Schoenoplectus tabermontani</u>	<u>5</u>	<u>No</u>	<u>OBL</u>	
3. <u>Echinochloa crus-galli</u>	<u>15</u>	<u>No</u>	<u>FACW</u>	
4. <u>Phalaris arundinacea</u>	<u>60</u>	<u>Yes</u>	<u>FACW</u>	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>90</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 feet</u> )				
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
= Total Cover				

Remarks: (Include photo numbers here or on a separate sheet.)

**Rapid, Dominance, and Prevalence Tests support wetland vegetation.**

Sampling Point: F-4

## HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

US Army Corps of Engineers

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 9/10/14  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: G-3  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Pond Fringe Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 39.93997 Long: -86.01941 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: Vegetation, Soil, and Hydrology characteristics indicate wetland status.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30Feet )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 3 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
1. _____				
2. _____				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 75 x 1 = 75 FACW species 20 x 2 = 40 FAC species 0 x 3 = 0 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 95 (A) 115 (B)  Prevalence Index = B/A = 1.21
3. _____				
4. _____				
5. _____				
= Total Cover				
Sapling/Shrub Stratum (Plot size: 15 Feet )				Hydrophytic Vegetation Indicators: X 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% X 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Fraxinus pennsylvanica	15	Yes	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				
Herb Stratum (Plot size: 5 Feet )				
1. Scirpus cyperinus	10	No	OBL	
2. Carex hystericina	30	Yes	OBL	
3. Phalaris arundinacea	5	No	OBL	
4. Typha latifolia	30	Yes	OBL	
5. Bidens frondosa	5	No	FACW	
6. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
7. _____				
8. _____				Remarks: (Include photo numbers here or on a separate sheet.) The Rapid, Dominance, and Prevalence tests indicate hydrophytic vegetation.
9. _____				
10. _____				
= Total Cover				
Woody Vine Stratum (Plot size: 30Feet )				
1. _____				
2. _____				
= Total Cover				

**Sampling Point:** G-3

## HYDROLOGY

**Wetland Hydrology Indicators:**Midwest Region – Version 2.0

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 9/10/14  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: G-4  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 1 Lat: 39.94000 Long: -86.019353 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks: Vegetation, Soil, and Hydrology characteristics do not indicate wetland status.		

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30Feet)	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> <table border="0"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>380</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>330</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>380</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>40</u>	x 2 = <u>80</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>75</u>	x 4 = <u>300</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>115</u> (A)	<u>380</u> (B)																	
= Total Cover																		
<b>Sapling/Shrub Stratum (Plot size: 15 Feet)</b>																		
1. Fraxinus pennsylvanica	15	Yes	FACW															
2. Catalpa speciosa	15	Yes	FACU															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
= Total Cover																		
<b>Herb Stratum (Plot size: 5 Feet)</b>																		
1. Coronilla varia	10	No	NI															
2. Solidago canadensis	10	No	FACU															
3. Muhlenbergia frondosa	25	Yes	FACW															
4. Poa pratensis	40	Yes	FACU															
5. Melilotus officinalis	10	Yes	FACU															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
= Total Cover																		
<b>Woody Vine Stratum (Plot size: 30Feet)</b>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
= Total Cover																		
<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
<b>Hydrophytic Vegetation Present?</b> Yes _____ No <u>X</u>																		
Remarks: (Include photo numbers here or on a separate sheet.)																		
The Rapid, Dominance, and Prevalence tests do not indicate hydrophytic vegetation.																		

**SOIL** Sampling Point: G-4

Sampling Point: G-4

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)				
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)		
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)		
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)		
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)		
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)		
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)		
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)		
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)			
<b>Field Observations:</b>				
Surface Water Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____		
Water Table Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____		
Saturation Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____		
(includes capillary fringe)			<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <sup>x</sup> <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks:				
No wetland hydrology indicators were observed.				

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 9/10/14  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: G-5  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Dry Ditch Local relief (concave, convex, none): Convex  
 Slope (%): 1 Lat: 39.9398 Long: -86.019624 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No <sup>x</sup>	Is the Sampled Area within a Wetland? Yes No <sup>x</sup>
Hydric Soil Present?	Yes	No <sup>x</sup>	
Wetland Hydrology Present?	Yes	No <sup>x</sup>	
Remarks: Vegetation, Soil, and Hydrology characteristics do not indicate wetland status.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30Feet )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)  Total Number of Dominant Species Across All Strata: 2 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)														
1. _____																		
2. _____																		
3. _____																		
4. _____																		
_____ = Total Cover				<b>Prevalence Index worksheet:</b> <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species 0</td> <td>x 1 = 0</td> </tr> <tr> <td>FACW species 40</td> <td>x 2 = 80</td> </tr> <tr> <td>FAC species 0</td> <td>x 3 = 0</td> </tr> <tr> <td>FACU species 70</td> <td>x 4 = 280</td> </tr> <tr> <td>UPL species 0</td> <td>x 5 = 0</td> </tr> <tr> <td>Column Totals: 110 (A)</td> <td>360 (B)</td> </tr> </table> Prevalence Index = B/A = 3.27	Total % Cover of:	Multiply by:	OBL species 0	x 1 = 0	FACW species 40	x 2 = 80	FAC species 0	x 3 = 0	FACU species 70	x 4 = 280	UPL species 0	x 5 = 0	Column Totals: 110 (A)	360 (B)
Total % Cover of:	Multiply by:																	
OBL species 0	x 1 = 0																	
FACW species 40	x 2 = 80																	
FAC species 0	x 3 = 0																	
FACU species 70	x 4 = 280																	
UPL species 0	x 5 = 0																	
Column Totals: 110 (A)	360 (B)																	
<b>Sapling/Shrub Stratum (Plot size: 15 Feet )</b>																		
1. Fraxinus pennsylvanica	15	Yes	FACW															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover																		
<b>Herb Stratum (Plot size: 5 Feet )</b>				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
1. Schedonorus arundinaceus	50	Yes	FACU															
2. Solidago canadensis	10	No	FACU															
3. Euthamia graminifolia	15	No	FACW															
4. Rudbeckia hirta	10	No	FACU															
5. Bidens frondosa	5	No	FACW															
6. Echinochloa crus-galli	5	No	FACW															
7. _____																		
8. _____																		
9. _____																		
10. _____																		
_____ = Total Cover																		
<b>Woody Vine Stratum (Plot size: 30Feet )</b>				<b>Hydrophytic Vegetation Present?</b> Yes No <sup>x</sup>														
1. _____																		
2. _____																		
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		
The Rapid, Dominance, and Prevalence tests do not indicate hydrophytic vegetation.																		

## SOIL

Sampling Point: G5

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No wetland hydrology indicators were observed.		

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 7/15/15  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: G-6  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Pond Fringe Local relief (concave, convex, none): Concave  
 Slope (%): 1 Lat: 39.94138 Long: -86.016983 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	Is the Sampled Area within a Wetland? Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	
Remarks: Vegetation, Soil, and Hydrology characteristics indicate wetland status.			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30Feet )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A) Total Number of Dominant Species Across All Strata: 4 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)														
1.																		
2.																		
3.																		
4.																		
5.																		
= Total Cover				<b>Prevalence Index worksheet:</b> <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species 66</td><td>x 1 = 66</td></tr> <tr><td>FACW species 19</td><td>x 2 = 38</td></tr> <tr><td>FAC species 10</td><td>x 3 = 30</td></tr> <tr><td>FACU species 0</td><td>x 4 = 0</td></tr> <tr><td>UPL species 0</td><td>x 5 = 0</td></tr> <tr><td>Column Totals: 95 (A)</td><td>134 (B)</td></tr> </tbody> </table> Prevalence Index = B/A = 1.41	Total % Cover of:	Multiply by:	OBL species 66	x 1 = 66	FACW species 19	x 2 = 38	FAC species 10	x 3 = 30	FACU species 0	x 4 = 0	UPL species 0	x 5 = 0	Column Totals: 95 (A)	134 (B)
Total % Cover of:	Multiply by:																	
OBL species 66	x 1 = 66																	
FACW species 19	x 2 = 38																	
FAC species 10	x 3 = 30																	
FACU species 0	x 4 = 0																	
UPL species 0	x 5 = 0																	
Column Totals: 95 (A)	134 (B)																	
<b>Sapling/Shrub Stratum (Plot size: 15 Feet )</b>																		
1. Fraxinus pennsylvanica	1	No	FACW															
2. Salix nigra	15	Yes	FACW															
3.																		
4.																		
5.																		
16 = Total Cover																		
<b>Herb Stratum (Plot size: 5 Feet )</b>				<b>Hydrophytic Vegetation Indicators:</b> X 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% X 3 - Prevalence Index is ≤3.0 <sup>1</sup> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
1. Schoenoplectus tabermontanei	10	No	OBL															
2. Carex hystericina	1	No	OBL															
3. Eleocharis sp.	15	Yes	OBL															
4. Typha latifolia	15	Yes	OBL															
5. Asclepias incarnata	3	No	FACW															
6. Carex vulpinoidea	10	No	OBL															
7. Myriophyllum sp.	15	Yes	OBL															
8. Equisetum hyemale	10	No	FAC															
9.																		
10.																		
89 = Total Cover																		
<b>Woody Vine Stratum (Plot size: 30Feet )</b>				<b>Hydrophytic Vegetation Present?</b> Yes X No														
1.																		
2.																		
= Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)

The Rapid, Dominance, and Prevalence tests indicate hydrophytic vegetation.

Sampling Point: G-6

## HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

**Secondary Indicators (minimum of two required)**

- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Surface Water (A1)             | <input type="checkbox"/> Water-Stained Leaves (B9)                  | <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Fauna (B13)                        | <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input checked="" type="checkbox"/> True Aquatic Plants (B14)       | <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 | <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)              | <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input checked="" type="checkbox"/> Algal Mat or Crust (B4)        | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2)       |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     | <input checked="" type="checkbox"/> FAC-Neutral Test (D5)          |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9)                    |  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   | <input type="checkbox"/> Other (Explain in Remarks)                 |  |

Surface Water Present? Yes ☒ No ☐ Depth (inches): 7

Water Table Present? Yes ☒ No ☐ Depth (inches): 4

Saturation Present? Yes ☒ No ☐ Depth (inches): 4  
(includes capillary fringe)

Wetland Hydrology Present? Yes X No       

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Primary Indicators A1, A2, A3, B5, B14 and the combination of Secondary Indicators D2 and D5 support wetland hydrology designation.

# WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 106th Street and I-69 Interchange City/County: Hamilton Sampling Date: 7/15/15  
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: G-7  
 Investigator(s): Kirk Roth Section, Township, Range: Section 12, Township 17 North, Range 4 East  
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex  
 Slope (%): 5 Lat: 39.94146 Long: -86.016945 Datum: NAD 83  
 Soil Map Unit Name: Brookston Silty Clay Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \* No (If no, explain in Remarks.)  
 Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No  
 Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes No X	Is the Sampled Area within a Wetland? Yes No X
Hydric Soil Present? Yes No X	
Wetland Hydrology Present? Yes No X	
Remarks: Vegetation, Soil, and Hydrology characteristics do not indicate wetland status.	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30Feet )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  Total Number of Dominant Species Across All Strata: 2 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 7 x 3 = 21 FACU species 67 x 4 = 268 UPL species 5 x 5 = 25 Column Totals: 79 (A) 314 (B)  Prevalence Index = B/A = 3.97
= Total Cover				
Sapling/Shrub Stratum (Plot size: 15 Feet )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
= Total Cover				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: 5 Feet )				
1. Schedonorus arundinaceus	40	Yes	FACU	
2. Solidago canadensis	15	Yes	FACU	
3. Daucus carota	5	No	UPL	
4. Apocynum cannabinum	7	No	FAC	
5. Ambrosia artemisiifolia	5	No	FACU	
6. Coronilla varia	5	No	NI	
7. Melilotus officinalis	2	No	FACU	
8. Plantago lanceolata	5	No	FACU	
9. _____				
10. _____				
84 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes No X
Woody Vine Stratum (Plot size: 30Feet )				
1. _____				
2. _____				
= Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				
The Rapid, Dominance, and Prevalence tests do not indicate hydrophytic vegetation.				

## SOIL

Sampling Point: G-7

<b>Profile Description:</b> (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 4/2	100					SCL	
8-20	10YR4/3	100						

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes \_\_\_\_\_ No <sup>x</sup>\_\_\_\_\_

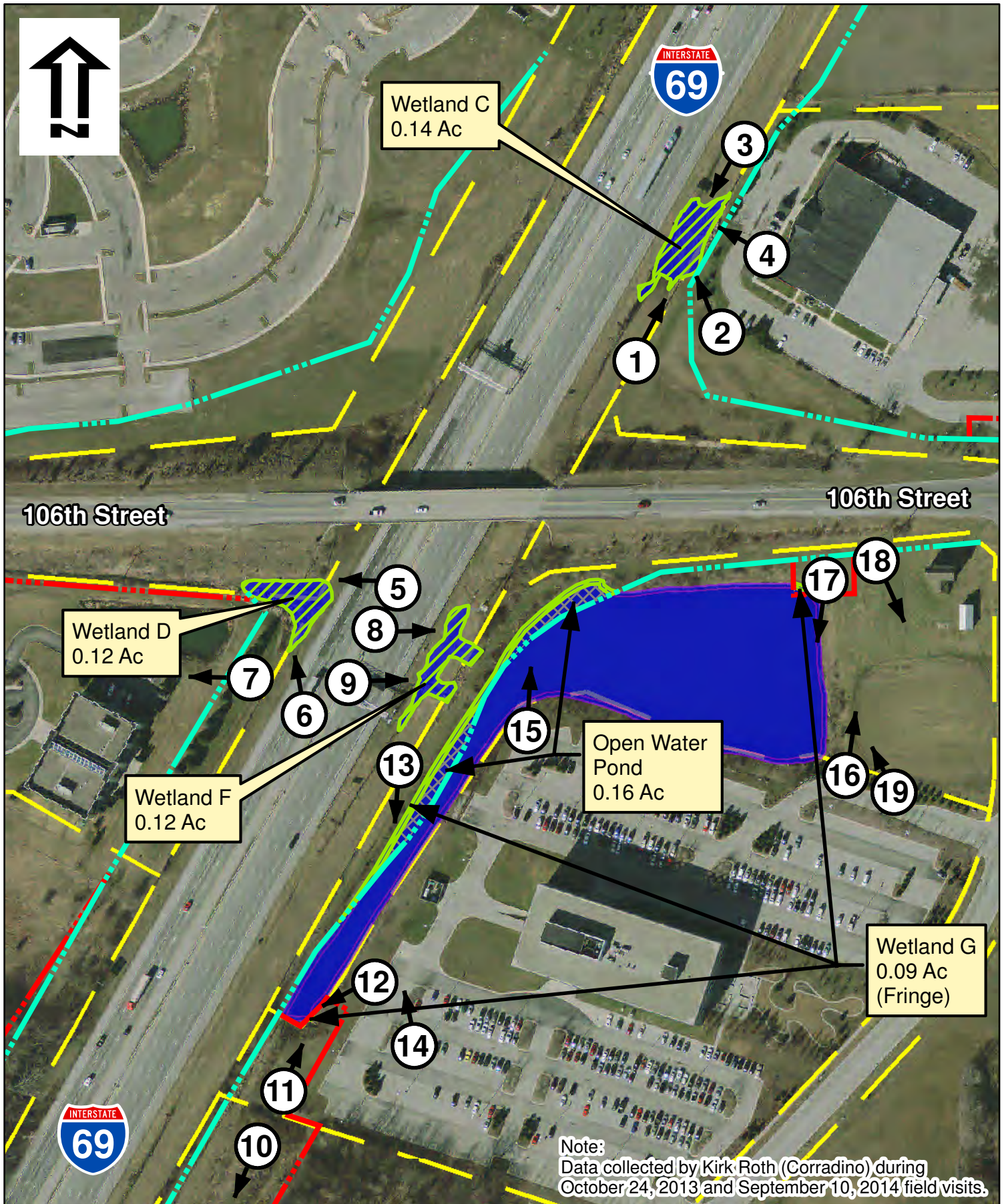
Remarks:  
No hydric soil indicators were observed.

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____		
Saturation Present?	Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No wetland hydrology indicators were observed.			

# **Appendix D**

## **Photo Log and Site Photos**



**Legend**

- Proposed R/W
- Temporary R/W
- Open Water Pond Impact
- Wetland Impact
- Field Delineated Wetland
- Data Point

**DES. NO. 1298035**  
**106TH STREET & I-69**  
**WETLAND IMPACTS & PHOTO KEY**  
**ROUNDBOUT INTERCHANGE OPTION**

H-85

100 50 0 100 Feet

Aerial Imagery Flown in 2012

## Wetland C



Photo 1— July 11, 2014 Northeast View



Photo 2— July 30, 2014 Northwest View



Photo 3— October 23, 2014 Southwest View



Photo 4— October 23, 2014 Northwest View



Photo 5— July 11, 2014 West View



Photo 6— October 23, 2014 Northwest View

Photo 7— July 11, 2014 West View (Outside ROW)

## Wetland D



## Wetland F



Photo 8— September 10, 2014 East View



Photo 9— September 10, 2014 East View



Photo 10— September 10, 2014 Southwest View



Photo 11— September 10, 2014 Northeast View

## Wetland G



Photo 12— July 11, 2014 Southwest View



Photo 13— September 10, 2014 South View



Photo 14— July 11, 2014 Northwest View

Photo 15—  
July 30, 2014  
North View





Photo 16— July 15, 2015 Northeast View

Photo 18— July 15, 20145 Southeast View—temporary ROW area



Photo 17— July 15, 2015 South View

Photo 19— July 15, 2015  
Northwest View—  
wetland outside perma-  
nent ROW



# **Appendix E**

## **Preliminary Jurisdictional Determination Form**

## ATTACHMENT

### PRELIMINARY JURISDICTIONAL DETERMINATION FORM

#### **BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 10 AUG 2015**

**B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:**

Kirk Roth  
Corradino, LLC  
200 S. Meridian Street, Suite 330  
Indianapolis, IN 46225  
(317) 385-5388

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER:**

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:** [DES

1298035] The study area in the immediate vicinity of the proposed 106<sup>th</sup> Street interchange is bounded by 96<sup>th</sup> Street to the south, Allisonville Road to the west, 126<sup>th</sup> Street to the north, and Cumberland Road to the east. United Consulting performed a jurisdictional determination of waters and submitted Waters of the United States Report in June 2012 for the Operation Indy Commute area, which encompasses the 106<sup>th</sup> Street interchange area and others. On October 24, 2013, September 10, 2014, and July 15, 2015, Corradino LLC performed a jurisdictional determination of the Waters of the United States specific to the interchange area. Four wetlands and one open water pond were identified during the investigation. None of these are likely Waters of the U.S.

#### **(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)**

State: **Indiana** County/parish/borough: **Hamilton** City: **Fishers**

Center coordinates of site (lat/long in degree decimal format):

Lat. 38° 04' 23.29" N, Long. 87° 17' 57.44"

Universal Transverse Mercator:

Name of nearest waterbody: Cheeney Creek

Identify (estimate) amount of waters in the review area:

Non-wetland waters:

Cowardin Class:

Wetlands:

Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal: N/A

Non-Tidal: N/A

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

- X Office (Desk) Determination. Date: 10/24/13
- X Field Determination. Date(s): 10/24/13, 9/10/14, 7/15/15

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33

C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there “*may be*” waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

**SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply**

- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Corradino, LLC.**

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☒ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: .

☐ Corps navigable waters' study: .

☐ U.S. Geological Survey Hydrologic Atlas: .

☐ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name: 1:20,000; Fishers.

☒ USDA Natural Resources Conservation Service Soil Survey. Citation: NRCS Soil Survey – Hamilton County, Indiana

☒ National wetlands inventory map(s). Cite name: USFWS – NWI Mapping

☐ State/Local wetland inventory map(s): .

☒ FEMA/FIRM maps: Hamilton County, Indiana.

☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): 2013.

or ☒ Other (Name & Date): 2014, 2015, provided by Corradino

☐ Previous determination(s). File no. and date of response letter: .

☐ Other information (please specify): .

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

A handwritten signature in black ink, appearing to be 'J. M. A.', written over a horizontal line.

10 AUG 2015

\_\_\_\_\_  
Signature and date of  
Regulatory Project Manager  
(REQUIRED)

\_\_\_\_\_  
Signature and date of  
person requesting preliminary JD  
(REQUIRED, unless obtaining  
the signature is impracticable)

<b>Wetland ID</b>	<b>Longitude Latitude</b>	<b>Cowardin Class</b>	<b>Acreage Impacted</b>	<b>Class of Aquatic Resource</b>
N/A	N/A	N/A	N/A	N/A

# Appendix I

## Noise Report

**David Cleveland**

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**From:** Bales, Ronald <rbales@indot.IN.gov>  
**Sent:** Friday, May 08, 2015 12:50 PM  
**To:** Shi, Runfa  
**Cc:** David Cleveland; Kirk Roth; Ted Stone  
**Subject:** DES: 1298035 - New Interchange Construction on I69, I-69 at 106 Street, Hamilton County, Indiana

A Traffic Noise Analysis report was completed by The Corradino Group, Inc. on May 7, 2015 for the I-65 at 106<sup>th</sup> Street New Interchange Project in Hamilton County, Indiana. The purpose of this project is to add an exit in Fishers, Ind., improve access, while relieving traffic demand on the interchanges to the south and north. The traffic noise analysis evaluated noise impacts for this project.

The traffic noise analysis identified nine receptors within the project area including six Category E receptors (Office, Business), two Category C receptors (Church, School), and one Category F (Retail). Three Category E receptors would experience a noise impact in the design year by approaching the NAC for Category E. Noise abatement has not been found to be reasonable due to the isolated nature of the impacted receptors.

**Therefore we are not recommending noise barriers be included in this project.** A reevaluation of the noise analysis will occur during final design. If during final it has been determined that conditions have changed such that noise abatement is feasible and reasonable, the abatement measures might be provided. The final decision on the installation of any abatement measures will be made upon the completion of the project's final design and the public involvement processes.

This e-mail serves as approval of the traffic noise analysis report.

Please let us know if you would like to view the full report or discuss further. Thank you.

**Ron Bales**  
***Environmental Policy Manager***

100 North Senate Ave., Room 642

Indianapolis, IN 46204

**Office:** (317) 234-4916

**Email:** [rbales@indot.in.gov](mailto:rbales@indot.in.gov)



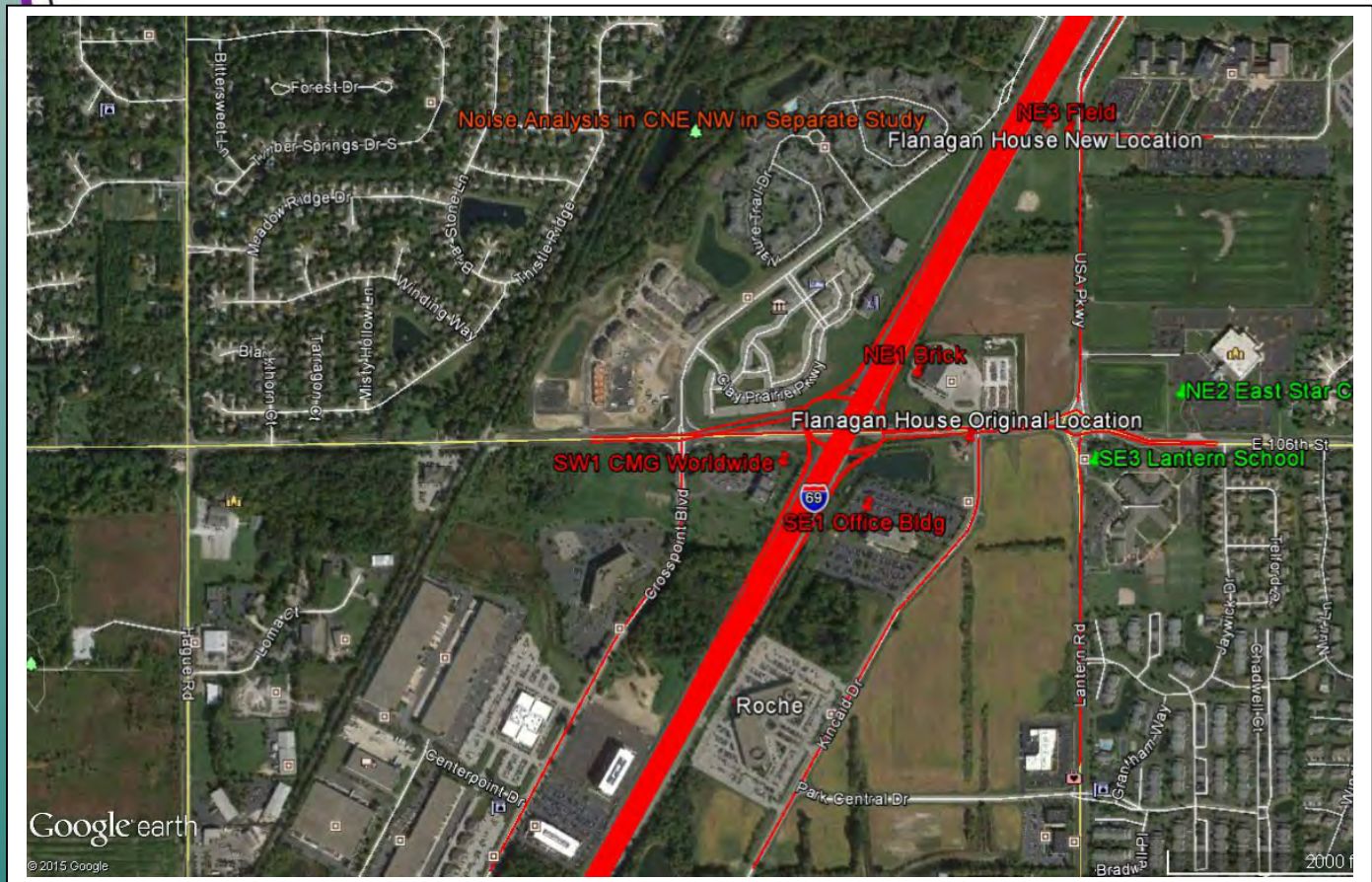
# Noise Study Report

I-69 New Interchange at 106<sup>th</sup> Street, Hamilton County

Des. #: 1298035

Submitted to:

United Consulting Engineers



Submitted by:

The Corradino Group, Inc.

*TED STONE*

Ted Stone

May 7, 2015

Note: Corradino LLC has purchased the professional version of Google Earth and hereby credits Google Earth for the aerial photography used herein.

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## Executive Summary

This Noise Study Report accompanies an Environmental Assessment for the new interchange of 106<sup>th</sup> Street in Fishers, Hamilton County with I-69 (Des. No. 1298035) (**Figure 1**). The purpose of this project is to add an exit in Fishers, Ind., to improve access there, while relieving traffic demand on the interchanges to the south and north. The northwest quadrant of the proposed interchange has been analyzed separately in the *Draft I-69 Expansion Design Projects Traffic Noise Impact Analysis* (October 2014, Des. #s 1383332, 1383336).

As roadway capacity is being added and federal funds are involved, under 23 CFR, part 772, the project is considered a “Type I” noise project. This means a noise analysis should be performed to determine whether the project will cause noise impacts and, if so, whether there are feasible and reasonable ways to mitigate those impacts.

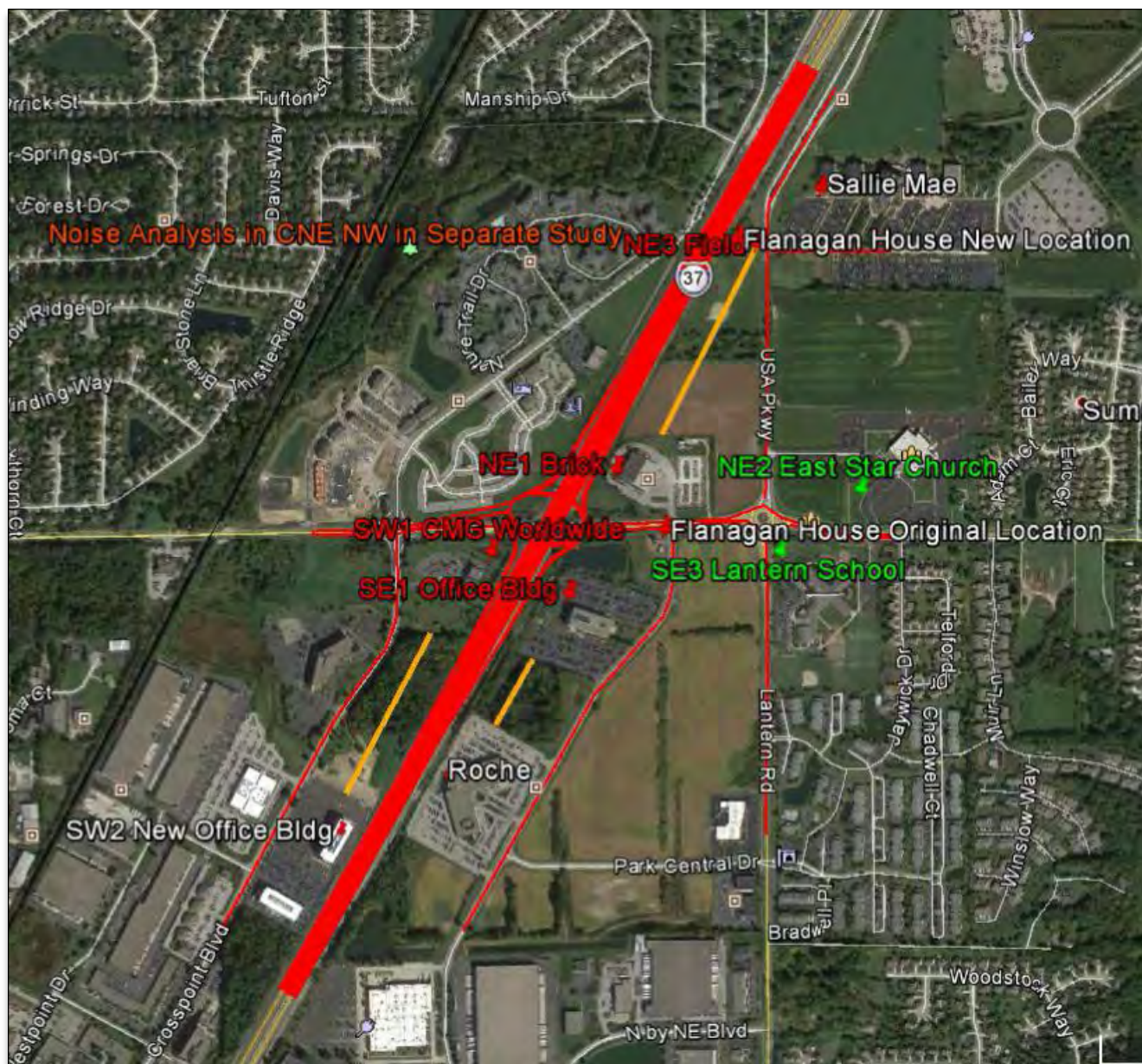
This noise analysis follows the guidance in the Federal Highway Administration’s (FHWA’s) *Highway Traffic Noise: Analysis and Abatement Guidance* (December 2011) and the Indiana Department of Transportation’s (INDOT’s) *Procedural Manual for Preparing Environmental Documents* and its *Traffic Noise Analysis Procedure* (July 2011).

Noise measurements were made in conformance with FHWA’s guidance at six locations representing common noise environments (CNEs) – areas within which traffic volume, speed, and geometric conditions are similar (see **Appendix A** for graphics showing each common noise environment and receptor and **Appendix B** for information about the measurements).

The study area is predominantly flat with minor swales at a few locations. Corridor land use has changed dramatically in recent years from farmland to primarily office buildings. Exceptions are to the east of I-69 and Lantern Road – the Lantern Road Elementary School and Eastern Star Church. The Flanagan House, determined to be legible for the *National Register of Historic Places* early in the project study, and then located on the south side of 106<sup>th</sup> Street west of Kincaid Drive, has been moved to a site in the northeast quadrant near I-69. It is no longer considered eligible for the *Register* after the move, and its use remains to be determined.

The Federal Highway Administration (FHWA) has developed Noise Abatement Criteria (NAC) that states have adopted (**Table 1**). These criteria guide how noise impacts are defined and when abatement (mitigation) should be tested. Residential receptors fall into activity category B. The applicable noise criterion for this land use is 67 dBA, defined in terms of the one-hour equivalent noise level, expressed as  $L_{eq}$  (1h). The church and elementary school fall into activity category C, with the same criterion of 67 dBA. The Code of Federal Regulations, Part 772, guides noise analysis. It defines potential impacts in terms of noise levels approaching or exceeding the NAC. INDOT’s *Noise Analysis Procedure* defines approaching as one decibel. So the effective value for impact analysis in Indiana for activity categories B and C is 66 dBA, rather than 67 dBA. Offices and commercial uses fall into NAC activity category E, with an effective criterion of 71 dBA. Retail uses, together with industrial and trucking/logistics/warehousing, and agriculture are in NAC activity category F, for which there is no noise impact criterion.

**Figure 1**  
**Project and Receivers - I-69 at 106<sup>th</sup> Street**  
(See Appendix A for more detailed graphics)



**Table 1**  
**FHWA – Noise Abatement Criteria (NAC)**  
**Hourly A-Weighted Sound Level-decibels (dBA)**

Activity Category	Activity Criteria L <sub>eq</sub> (1h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B*	67 (Exterior)	Residential.
C*	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

\* Includes undeveloped lands permitted for this activity category.

Source: Federal Highway Administration – 23 CFR 772.

## Summary of Analysis

**Existing Conditions** – Analysis using the Traffic Noise Model (TNM2.5) validated the noise measurements obtained in the field within the standard 3 dBA. Measurements in October 2013 ranged between 59 and 71 dBA. Once the TNM2.5 noise model inputs were validated for the measurement sites, seven receptors were tested in the CNEs, representing all locations within 500 feet of the proposed project. This included receptors representing office buildings in all three quadrants, a retail location selling bricks in the northeast quadrant, the noted church, and the school.

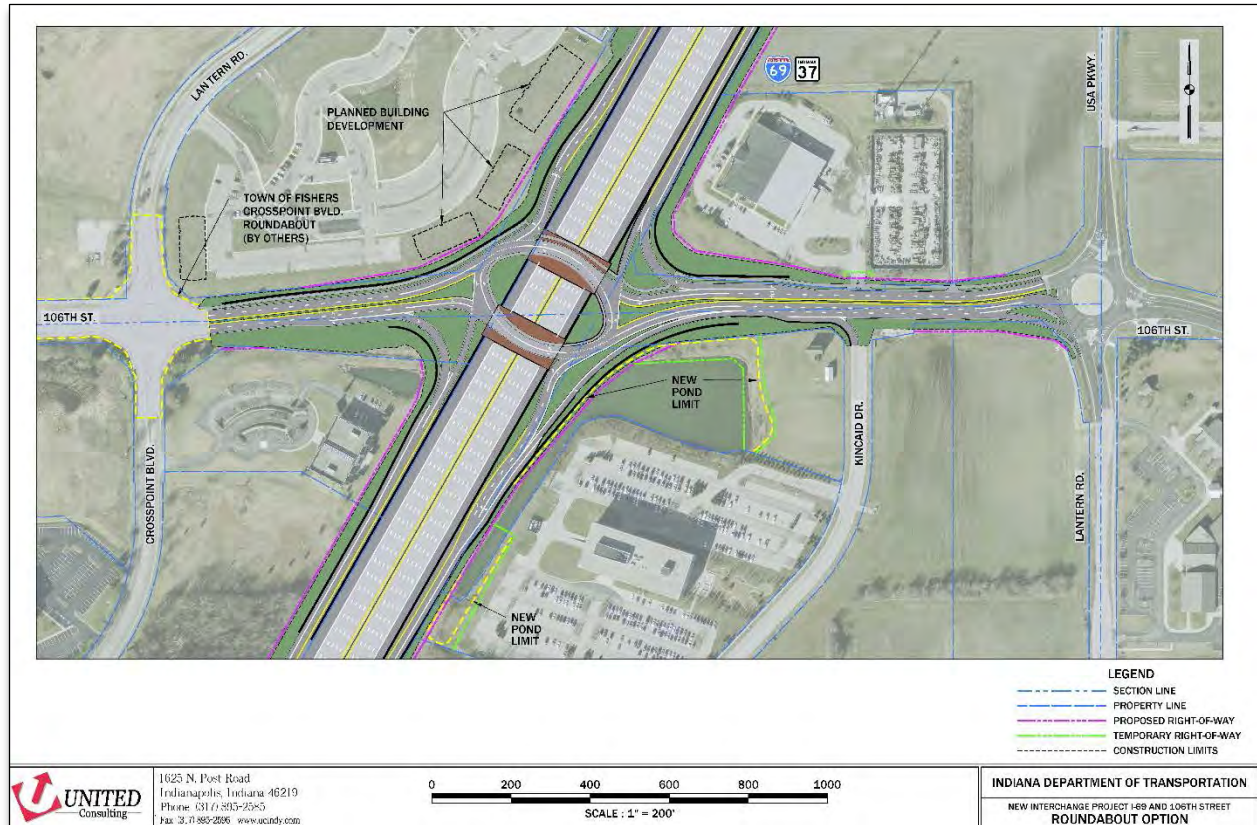
**No Build Alternative** – The No Build Alternative (2035) assumes the separate *I-69 Interstate Expansion Projects 1 and 3*,<sup>1</sup> which will add capacity on I-69 from the 106<sup>th</sup> Street interchange north, will be completed. The associated *Draft I-69 Expansion Design Projects Traffic Noise Impact Analysis* (October 2014, Des. #s 1383332, 1383336) examined noise in the northwest quadrant of the proposed interchange.

**Build Alternative** – This alternative adds an interchange at 106<sup>th</sup> street with a large roundabout over I-69, to which the I-69 ramps connect (**Figure 2**). All locations within 500 feet of the project were represented in TNM2.5 (**Figure 1**). Output indicates the project would result in noise levels ranging from 60 to 77 dBA, with noise abatement criteria exceeded at the Roche office building at the south project limit on the

<sup>1</sup> *I-69 Interstate Expansion Project 1 (Added travel lanes, from 106th St to 0.5 mi N of Southeastern Parkway/Campus Parkway) & Project 3 (Added travel lanes from 0.5 mi N of Southeastern Parkway/Campus Pkwy to 0.5 mi East of SR 13); Hamilton and Madison Counties, Categorical Exclusion 3* (currently in draft form).

east side and two new office buildings built during the course of the project on the west side of I-69 at the south project limit. Because the area is generally flat, the ramps, which connect to the roundabout poised above I-69, shield receptors on either side of I-69 nearer to the interchange from the noise of the main line of I-69. The ramps act as berms in this section. As the ramps descend to I-69 the effect diminishes.

**Figure 2**  
**I-69 at 106<sup>th</sup> Street Roundabout**



Source: United Engineering

## Conclusions

Under the Build Alternative, no mitigation is reasonable and feasible because no sensitive receivers would experience noise levels that approach or exceed the established noise abatement criteria. Two new office buildings that have been built since this project was started in the southwest quadrant, the Roche office building in the southeast quadrant, and the Flanagan House at its new location will experience noise levels higher than the applicable 71 dBA office criterion (assuming the use of the Flanagan House is office). These isolated locations cannot be reasonably mitigated. The buildings are all new to these locations and have been purposefully built where they are to have visibility from I-69. Based on the studies thus far accomplished, the State of Indiana has not identified any locations where noise abatement is likely. This conclusion is based upon preliminary design costs and design criteria.

Based on INDOT and FHWA guidelines, and the substantial change brought about with a new interchange, a public hearing will be held.

A reevaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is feasible and reasonable, abatement measures might be provided. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project's final design and the public involvement processes.

## **1. Project History and Background**

This project is a proposed new interchange on I-69 at 106<sup>th</sup> Street. It is being developed by the Indiana Department of Transportation (INDOT), with active support and sponsorship from the Town of Fishers and Hamilton County. The project is federally funded. New right-of-way is required.

This Noise Study Report supports an Environmental Assessment for the proposed interchange.

This section of I-69 has been subject to a series of improvement projects to address ever growing traffic. 106<sup>th</sup> Street is the only remaining location in this section of the I-69 corridor where an interchange can be added, based on Federal Highway Administration (FHWA) interstate spacing criteria.

Currently, there is no access to or from I-69 at 106<sup>th</sup> Street. Access is needed to support existing traffic volumes as well as anticipated growth. Motorists now use the I-69 interchanges at 96<sup>th</sup> Street or 116<sup>th</sup> Street to gain access to the 106<sup>th</sup> Street area; however, these interchanges experience congestion and delay during peak periods, and service levels will deteriorate over time. The interchanges at 96<sup>th</sup> Street and 116<sup>th</sup> Street are not easily expandable because dual right- and left-turn lanes are already provided to/from the interchange ramps at the signalized ramp junctions. Further expansion would result in significant impacts and cost.

The Town of Fishers has seen a great deal of growth over the past three decades and is currently the eighth most populated community in Indiana. U.S. Census data reports that Fishers had an approximate population of 2,000 in 1980, 7,200 in 1990, and 77,000 in 2010. Growth has been both residential and commercial. The area near the proposed 106<sup>th</sup> Street interchange, and in particular the existing platted commercial office parks along the east side of I-69 between 96<sup>th</sup> Street and 116<sup>th</sup> Street, are currently experiencing development activity.

## **2. Existing Roads and Proposed Changes**

Currently 106<sup>th</sup> Street passes over I-69 with no access to I-69. It is a two-lane road with 11-foot lanes and four-foot shoulders. It is classified as a Minor Arterial with a posted speed limit of 40 mph. I-69 in each direction consists of: four 12-foot through lanes; a 12-foot auxiliary lane for entrance/exit to 96<sup>th</sup> and 116<sup>th</sup> streets, and to/from SR 37; a ten-foot outside shoulder; and, a five-foot median shoulder. The posted speed of I-69 in the project area is 65 mph.

No pedestrian facilities exist along 106<sup>th</sup> Street in the project area. There is a signalized intersection with left-turn lanes at Crosspoint Boulevard/Lantern Road (west project limit) and a full two-lane roundabout at USA Parkway/Lantern Road (east project limit). [Lantern Road used to be continuous north-south, but was cut by I-69 and so exists on both sides of the interstate. The west intersection is referred to as Crosspoint Boulevard and the east roundabout is referred to as USA Parkway]. The Town of Fishers has developed plans to construct a full two-lane roundabout at Crosspoint Boulevard.

Several interchange alternatives were considered: a tight diamond, a single-point, a diverging diamond, Transportation Systems Management, and a roundabout. The roundabout interchange is the preferred

alternative. It minimizes average vehicular delay during the peak hours and provides a “low to no” delay solution during non-peak hours. The roundabout interchange cost falls between the other two alternatives. It conforms to the existing pattern of roundabouts along 106<sup>th</sup> Street.

The I-69 exit ramps will be designed as a single 16-foot lane, which will transition to two 12-foot lanes. The I-69 entrance ramps will exit the roundabouts with two lanes, then transition to a single 16-foot lane for the majority of the ramp. Rather than ending the northbound entrance ramp with a merge taper, it will continue approximately 350 feet and connect directly to the SR 37 exit lane.

106<sup>th</sup> Street will be reconstructed with two 12-foot lanes in each direction, with curb and gutter. Exterior to the roundabout, there will be a continuous median extending to the roundabouts to the west and east. This establishes access control over this section of 106<sup>th</sup> Street. The distance along 106<sup>th</sup> Street between the centerlines of Crosspoint and USA Parkway is approximately 2,400'. A six-foot grass buffer will separate the curb and gutter from an eight-foot multi-use path in each direction. Access to Kincaid Drive will be right-in only. Architectural Brick & Tile on the opposite side of 106<sup>th</sup> Street will be limited to right-in, right-out movements.

### 3. Existing Noise Environment

Corridor land use is predominately office. The southwest and southeast are exclusively so, except that in the southeast quadrant the Lantern Elementary School occupies the southeast quadrant of the intersection of 106<sup>th</sup> Street and Lantern Road. The northeast quadrant of the 106<sup>th</sup> Street interchange includes the retail Architectural Brick and Tile and the Eastern Star Church in the northeast quadrant of the intersection of 106<sup>th</sup> Street and USA Parkway. The balance of the northeast quadrant of the interchange is office.

Each interchange quadrant was considered a Common Noise Environment (CNE – **Appendix A**), with the northwest quadrant being considered in a separate study, as noted.

Noise measurements were made in conformance with FHWA’s guidance at six locations (**Figure 1**, **Appendix B**, and **Table 2**) on October 23, 2013. As noted on the Noise Data Sheets in Appendix B, a Rion NL-31 sound level meter was used with an exchange rate of 3, set on slow response, and A-weighting. A Norsonic Noise Calibrator 1251 emitting 114 dBA was used to calibrate the meter before and after the measurements (calibration certificates follow the Noise Data Sheets). The setup height was five feet on a tripod with the tripod set away from reflective surfaces. All measurements and traffic counts were 15 minutes in duration. Leq(1h) and Lmax were recorded at each site.

**Table 2**  
**Common Noise Environments, Measurements Sites, and Related Receptors**

CNE	Measurement Site	Single Family DUs	Land Use	Effective Noise Abatement Criterion	Measured Noise Level (dBA Leq (1h))	2014 Modeled Noise Level	Difference
SW CNE	SW1 CMG Worldwide	0	Office	71	67.4	68.1	0.7
SE CNE	SE1 Office Bldg.	0	Office	71	70.0	67.1	-2.9
	SE3 Lantern School	0	School	66	59.2	58.6	-0.6
NW CNE	NE1 Brick	0	Retail	None	70.2	71.0	0.8
	NE2 East Star Church	0	Church	66	56.5	54.6	-1.9
	NE3 Field	0	Office	71	70.7	67.7	-3.0

Source: Corradino, LLC

Traffic counts by the vehicle types that TNM2.5 requires were collected during the noise measurements and were used to validate the TNM2.5 model setup. Counts on I-69 were made using videotape that was processed in the office. Local roads were manually counted.

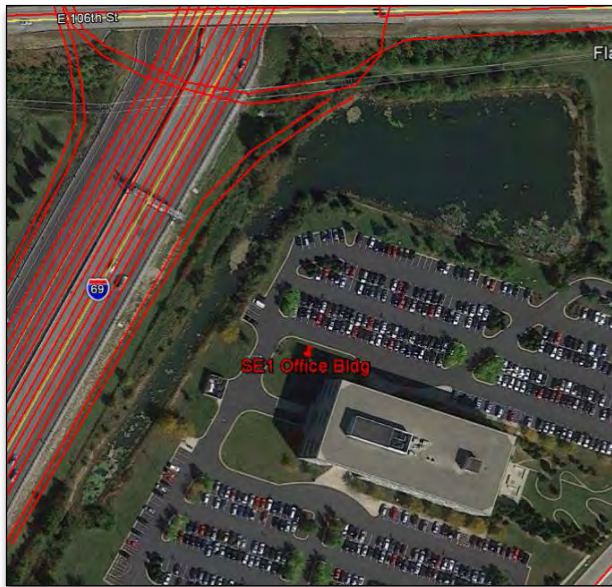
**Table 2** shows the relationship between the CNEs, measurement sites, land use, effective NAC, and the measured and modeled noise levels at the receptors. The TNM2.5 computer model runs validated the field measurements within 3 dBA (**Table 2**). None of the measured and modeled values exceed the applicable NAC. Descriptions are provided below for each measurement site.

**SW1 CMG Worldwide** – This office building appeared largely vacant at the time of the noise measurement. The measurement was taken in the northeast corner of the parking lot of the building at a point close to I-69 where there could be outside activity (**Figure 3**). A fountain with a spray that reached more than 20 feet high operates continuously in the detention area between the parking lot and 106<sup>th</sup> Street. It causes a low level of background gray noise. A planted berm along the property border with I-69 affords some mitigation of noise from I-69, as does the berm supporting 106<sup>th</sup> Street, such that the recorded noise level was only 67 dBA.

**Figure 3**  
**SW1 at CMG Worldwide Office Building**



**Figure 4**  
**SE1 at CMG Worldwide Office Building**



**SE1 Office Building** – The measurement at this site was in a grassy area at the rear of the building where there is an entrance from the parking area (**Figure 4**). There is water detention between the building and I-69 that wraps around to the north side of the parking lot, between the lot and 106<sup>th</sup> Street. The noise measurement found the existing noise level to be 67 dBA.

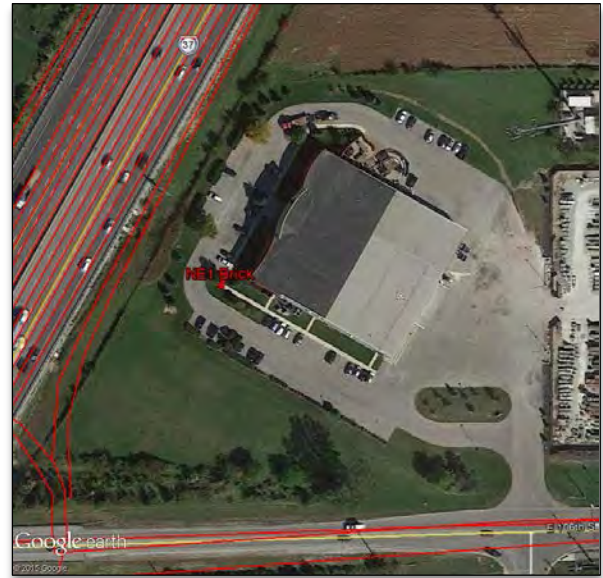
**Figure 5**  
**SE3 at Lantern School**



**SE3 Lantern School** – The Lantern Elementary School is one of two sensitive receivers measured. It is on the southeast corner of 106<sup>th</sup> Street and Lantern Drive, which meet in a roundabout. The measurement site was near a gazebo-type structure that may experience some school use during designated activity. It represented the area of potential activity closest to the east project limit. Improvements to 106<sup>th</sup> Street extend east to the roundabout shown in **Figure 5**. The noise measurement at this site was only 59 dBA, well below the established NAC for schools of 67 dBA.

**Figure 6**  
**NE1 at Architectural Brick and Tile**

**NE1 Brick** – The Architectural Brick and Tile retail store is tucked into the northeast quadrant of the future interchange (**Figure 6**). It is close enough that the berm that supports 10<sup>th</sup> Street buffers noise from I-69. The existing noise level measured here was 67 dBA. The measurement site was very close to the lanes of I-69, but the shielding of noise from the south section of I-69 resulted in a measurement of only 70 dBA.



**Figure 7**  
**NE2 at Eastern Star Church**

**NE2 East Star Church** – The Eastern Star Church is over 1,200 feet from I-69, but is just within 500 feet of the east project limit at the USA Drive/106<sup>th</sup> Street roundabout (**Figure 7**). Only some grassy areas around the perimeter of the parking lot fall within 500 feet. The measurement site was in this grassy area. The noise measurement was 57 dBA.



**Figure 8**  
**NE3 Field Awaiting Development**



**NE3 Field** – This last measurement site is located in an area subject to development (**Figure 8**). Indeed, during the course of the study, the Flanagan House has been relocated to this site, though it does not yet show on aerial photography. The Sallie Mae office complex is to the east across USA Parkway. Noise levels in this undeveloped area will vary, but the location chosen as representative had a measurement of 71 dBA.

## 4. Analysis Methodology

This noise analysis follows the guidance in the FHWA's *Highway Traffic Noise: Analysis and Abatement Guidance* (July 2010) and INDOT's *Traffic Noise Analysis Procedure* (July 2011).

Noise measurements were made in conformance with FHWA guidance at six locations as noted in Section 3. The TNM2.5 was used to model the noise measurement sites using the features of TNM to model terrain lines, ground zones, and barriers. Traffic counted during the noise measurements (October 2013, representing 2014) was used to validate the TNM2.5 model. All 2014 modeled values were within 3 dBA of the measured values (**Table 3**), validating the TNM2.5 model inputs.

The TNM2.5 was used to estimate future (2035) noise levels with the project using forecast traffic as explained below and shown in **Appendix C**. Sound level results from TNM2.5 are presented in **Appendix D**. There were no impacts to sensitive receivers, and no noise barrier analysis was required. Impacts were limited to office buildings.

### Future Traffic

Future traffic was forecast using the regional TransCAD model adjusted for the project to support the *Interchange Justification Report* (July 2014). The horizon year was 2035. The model forecast AM and PM peak traffic (**Appendix C**). Traffic inbound in the morning represents the heaviest flow southbound each day. Conversely, outbound traffic is heaviest in the afternoon/evening. TNM2.5 runs for the receivers on the west side of I-69 used inbound traffic volumes (see highlighted volumes in the data table in **Appendix C**). TNM2.5 runs for receivers on the east side of I-69 used the outbound volumes. In neither case are the volumes so high that traffic flow speeds would deteriorate to the point that something other than the loudest hour is modeled. The posted speed will be 65 mph, as it is today.

## 5. Future Noise Environment

The project will have minimal effects on the noise environment, as traffic volumes are already very high and, to over simplify some complex geometric changes, the mainline basically goes from five to six lanes in each direction. Traffic flow on I-69 goes up by 25 to 30 percent in the peak hours. Meanwhile, there are no sensitive receivers, other than the school and church, which are both more than 1,300 feet from the near lanes of I-69.

All receptors within 500 feet of I-65 were modeled, although there are so few that only three receptors were identified in addition to those locations where noise was measured. The additional locations are: two new office buildings constructed since the project began in the southwest quadrant at the south project limit; another office building (Roche) south along I-69 on its east side, and the Fannie Mae office complex in the northeast quadrant. The Flanagan House was evaluated in its original location (see **Figure 2**), but that information is now omitted because it has been moved. Its new location is adjacent to the measurement location NE2 Field. Its land use is considered to be office.

The TNM2.5 model results are presented by CNE in **Table 3**. TNM2.5 sound level results for 2035 build conditions may be found in **Appendix D**. As mentioned earlier, sites close to 106<sup>th</sup> Street would experience noise levels lower in the future as the ramps to be constructed with the interchange will shield some areas from the mainline noise of I-69. Away from 106<sup>th</sup> Street to the north and south the effect of the increase in I-69 traffic predominates.

**Table 3**  
**2035 Noise and NAC Exceedances**

CNE	Measurement Site	Land Use	Effective Noise Abatement Criterion	2035 Modeled Noise Level	Criteria Exceedance
SW CNE	SW1 CMG Worldwide	Office	71	62.9	NA
	Two new office buildings	Office	71	77.8	6.8
SE CNE	SE1 Office Bldg.	Office	71	68.9	NA
	Roche Office Bldg.	Office	71	74.2	3.2
	SE3 Lantern School	School	66	61.5	NA
NW CNE	NE1 Brick	Retail	None	63.6	NA
	NE2 East Star Church	Church	66	60.2	NA
	NE3 Field	Office	71	71.2	0.5
	Sallie Mae	Office	71	68.7	NA

Source: Corradino, LLC

The two new office building in the southwest quadrant on the west side of I-69 at the south project limit were built only about 90 feet from the right-of-way fence. The Roche Diagnostic Corporation on the east side of I-69 south of 106<sup>th</sup> Street elected to position its building as it did, close to I-69 with its logo prominently displayed so it can be seen from I-69. And, planning to widen I-69 has been ongoing for years, just as traffic has been growing for years. It would not be reasonable to mitigate noise at the outside area modeled. Office building have been built after public knowledge of improvements to I-69. The same is true at the new location of the Flanagan House. The *Noise Impact Analysis I-69 OPERATION INDY COMMUTE* (INDOT DES #1173161) (January 2012) shows these areas to be impacted and states that local officials will be contacted.

Because this project is being processed under the National Environmental Policy Act (NEPA) as an Environmental Assessment, a public hearing will be conducted. Its date has not yet been set.

Based on the studies thus far accomplished, the State of Indiana has not identified any locations where noise abatement is likely. This conclusion is based upon preliminary design costs and design criteria. Noise abatement has been not been found to be reasonable due to the isolated nature of impacted receptors and their choice of locating by I-69. A reevaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is feasible and reasonable, abatement measures might be provided. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project's final design and the public involvement processes.

The viewpoints of the benefited residents and property owners are a major consideration in determining the reasonableness of highway traffic noise abatement measures for proposed highway construction projects. These viewpoints will be determined and addressed during the environmental phase of project development. The will and desires of the public are an important factor in dealing with the overall problems of highway traffic noise. INDOT will incorporate highway traffic noise consideration in on-going activities for public involvement in the highway program and will reexamine the residents' and property owners' views on the desirability and acceptability of abatement during project development.

## 6. Construction Noise

It is difficult to predict levels of construction noise at a particular receptor or group of receptors. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. Daily construction normally occurs during daylight hours when people tolerate occasional loud noises. The duration for individual receptors should be short; therefore, there are no anticipated disruptions of normal activities. However, the project plans and specifications include provisions requiring the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and maintenance of muffler systems.

## 7. Coordination with Local Officials

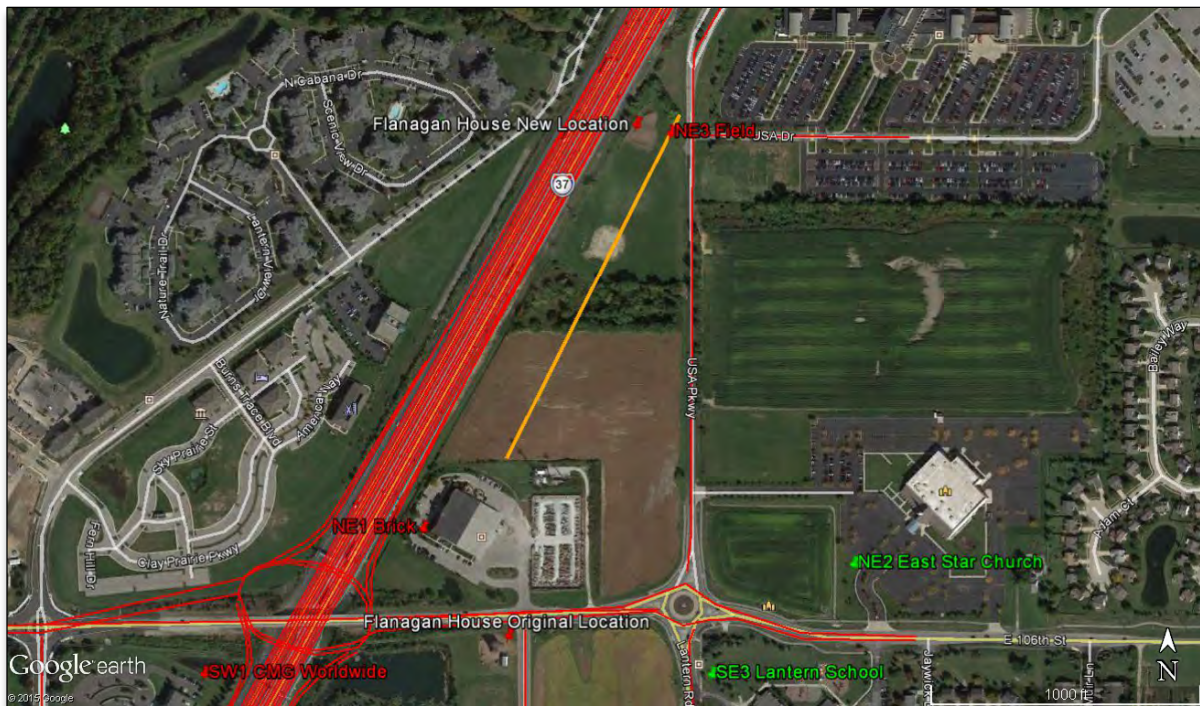
Consistent with 23 CFR 772.17, this report is being provided to the Town of Fishers and Hamilton County.

Noise contours are provided for the undeveloped areas along either side of I-69. The 71 dBA contour line falls at approximately 200 feet from the right-of-way fence at the point at which the new interchange ramps meet the surrounding grade. That is generally the position of undeveloped land both south and north of 106<sup>th</sup> Street. **Figure 9** shows the area south of 106<sup>th</sup> Street and **Figure 10** shows the area to the north.

**Figure 9**  
**71 dBA Noise Contour in Undeveloped Land South of 106<sup>th</sup> Street**



**Figure 10**  
**71 dBA Noise Contour in Undeveloped Land North of 106<sup>th</sup> Street**



# Noise Report

## **APPENDIX A**

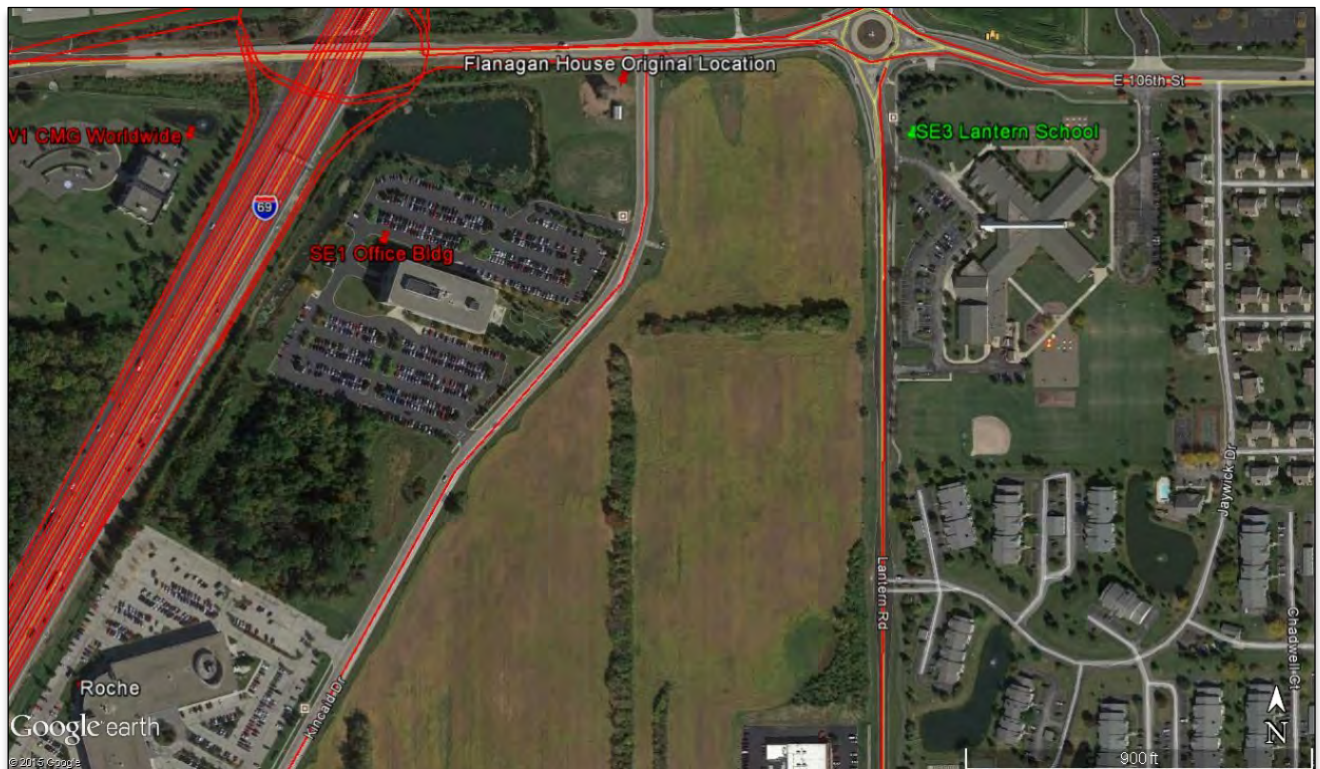
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### **COMMON NOISE ENVIRONMENTS**

## SW CNE



## SE CNE



## NE CNE



# Noise Report

## APPENDIX B

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### **NOISE MEASUREMENT DATA SHEETS and CALIBRATION CERTIFICATES**

## NOISE DATA SHEET

Ted counts 106<sup>th</sup> Street, Kirk videos I-69 from swale

Job # 4184		AM/PM		Site # SW1	
Project: Des. 1298035 – New 106 <sup>th</sup> St. Interchange@1-69, Fishers, IN		Date: 23 Oct 2013			
Instrumentation		Rion NL-31 Sound Level Meter, slow response, A-weighting, exchange rate = 3		Day of Week M T <u>W</u> T F	
		Norsonic Sound Calibrator type 1251 @ 114 dB		Calibration Confirmed Yes/No	
Location		NE corner of CCG Worldwide parking lot		Temp. 50 F	
Receptor Represents		Common area near pond		Heavy Overcast/Light Overcast/ Sunny/ Clear Night/ Overcast Night	
Major Noise Source		I-69 - Much of the property line has a low berm on the private property		Humidity 50 %	
Secondary Source		106 <sup>th</sup> Street - Fountain runs continuously by parking lot		Pavement Dry/Wet	
Land Use Category		A-57dBA Serene Park	B&C-67dBA Residential/Active Park/ Hosp/Church/Section 4(f)	E-72dBA Motels/Rest./ Offices/Devel.	F-NA Agric./Manuf./ Mainten./Retail
				G-NA Undeveloped lands not yet permitted	Wind Upwind -1 to -5 Calm -1 to +1 Downwind +1 to +5

	# Lanes	Lane Width	Median Width	Posted Speed	*Observed Speed
Major Road	4 NB/ 3 SB	12	24	55	
Secondary Road	2	11	NA	40	

Test 1 – 15 min.	From	5:20 PM	To 5:35 PM	
Decibel Reading	67.4	L Aeq	88.4	L max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	EB/WB	SB/WB
Cars	1167	898	278	
Medium Trucks (3-axle)	27	30	3	
Heavy Trucks	66	83	1	
Buses				
Motorcycles				

Test 2 – min.	From		To	
Decibel Reading		L Aeq		L max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	NB/EB	SB/WB
Cars			0	
Medium Trucks (3-axle)			0	
Heavy Trucks			0	
Buses			0	
Motorcycles			0	

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## NOISE DATA SHEET

Kirk video I-69

Job # 4184		AM/PM		Site # SE1	
Project: Des. 1298035 – New 106 <sup>th</sup> St. Interchange@1-69, Fishers, IN		Date: 23 Oct 2013			
Instrumentation		Rion NL-31 Sound Level Meter, slow response, A-weighting, exchange rate = 3		Day of Week M T <u>W</u> T F	
		Norsonic Sound Calibrator type 1251 @ 114 dB		Calibration Confirmed Yes/No	
Location		Rear grassy area outside 4 story office building		Temp. 50 F	
Receptor Represents		Potential outdoor activity area of office building		Heavy Overcast/Light Overcast/ Sunny/ Clear Night/ Overcast Night	
Major Noise Source		I-69		Humidity 50 %	
Secondary Source		NA		Pavement Dry/Wet	
Land Use Category		A-57dBA Serene Park		B&C-67dBA Residential/Active Park/ Hosp/Church/Section 4(f)	
		E-72dBA Motels/Rest./ Offices/Devel.		F-NA Agric./Manuf./ Mainten./Retail	
		G-NA Undeveloped lands not yet permitted		Wind Upwind -1 to -5	
				Calm -1 to +1	
				Downwind +1 to +5	

	# Lanes	Lane Width	Median Width	Posted Speed	*Observed Speed
Major Road	4 NB/ 3 SB	12	24	55	
Secondary Road	NA	NA	NA	NA	NA

Test 1 – 15 min.	From	1:25 PM	To	1:40 PM
Decibel Reading	70.0	L Aeq	84.0	L max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	NB/EB	SB/WB
Cars	685	679		
Medium Trucks (3-axle)	17	39		
Heavy Trucks	95	89		
Buses				
Motorcycles				

Test 2 – min.	From		To	
Decibel Reading		L Aeq		L max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	NB/EB	SB/WB
Cars			0	
Medium Trucks (3-axle)			0	
Heavy Trucks			0	
Buses			0	
Motorcycles			0	



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## NOISE DATA SHEET

Ted counts 106<sup>th</sup>, Kirk video I-69

Job #: 4184		AM/PM		Site # SE3	
Project: Des. 1298035 – New 106 <sup>th</sup> St. Interchange@1-69, Fishers, IN		Date: 23 Oct 2013			
Instrumentation		Rion NL-31 Sound Level Meter, slow response, A-weighting, exchange rate = 3		Day of Week MT <u>W</u> T F	
		Norsonic Sound Calibrator type 1251 @ 114 dB		Calibration Confirmed Yes/No	
Location		SE corner of Lantern Road and 106 <sup>th</sup> Street		Temp. 50 F	
Receptor Represents		Lantern School grounds/gazebo		Heavy Overcast/Light Overcast/ Sunny/ Clear Night/ Overcast Night	
Major Noise Source		106 <sup>th</sup> Street and Lantern Road		Humidity 50 %	
Secondary Source		I-69 - distant		Pavement Dry/Wet	
Land Use Category		A-57dBA Serene Park	B&C-67dBA Residential/Active Park/ Hosp/Church/Section 4(f)	E-72dBA Motels/Rest./ Offices/Devel.	F-NA Agric./Manuf./ Mainten./Retail
		G-NA Undeveloped lands not yet permitted		Wind Upwind -1 to -5 Calm -1 to +1 Downwind +1 to +5	

	# Lanes	Lane Width	Median Width	Posted Speed	*Observed Speed
Major Road	2	11	NA	40	
Secondary Road	4 NB/ 3 SB	12	24	55	

Test 1 – 15 min.	From	2:10 PM	To	2:25 PM
Decibel Reading	59.2	<sup>L</sup> Aeq	68.0	<sup>L</sup> max
Traffic Volumes	106th	Lantern	Secondary Road I-69	
	EB/WB	NB/SB	NB/EB	SB/WB
Cars	80	85	769	690
Medium Trucks (3-axle)	3	2	22	39
Heavy Trucks	0	0	104	96
Buses				
Motorcycles				

Test 2 – min.	From		To	
Decibel Reading		<sup>L</sup> Aeq		<sup>L</sup> max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	NB/EB	SB/WB
Cars			0	
Medium Trucks (3-axle)			0	
Heavy Trucks			0	
Buses			0	
Motorcycles			0	



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## NOISE DATA SHEET

Ted counts 106<sup>th</sup>, Kirk video I-69

Job # 4184		AM/PM		Site # NE1	
Project: Des. 1298035 – New 106 <sup>th</sup> St. Interchange@1-69, Fishers, IN		Date: 23 Oct 2013			
Instrumentation		Rion NL-31 Sound Level Meter, slow response, A-weighting, exchange rate = 3		Day of Week M T <u>W</u> T F	
		Norsonic Sound Calibrator type 1251 @ 114 dB		Calibration Confirmed Yes/No	
Location		West parking lot of Architectural Brick and Tile		Temp. 50 F	
Receptor Represents		Retail business parking lot		Heavy Overcast/Light Overcast/ Sunny/ Clear Night/ Overcast Night	
Major Noise Source		I-69		Humidity 50 %	
Secondary Source		106 <sup>th</sup> Street		Pavement Dry/Wet	
Land Use Category		A-57dBA Serene Park	B&C-67dBA Residential/Active Park/ Hosp/Church/Section 4(f)	E-72dBA Motels/Rest./ Offices/Devel.	F-NA Agric./Manuf./ Mainten./Retail
		G-NA Undeveloped lands not yet permitted		Wind Upwind -1 to -5 Calm -1 to +1 Downwind +1 to +5	

	# Lanes	Lane Width	Median Width	Posted Speed	*Observed Speed
Major Road	4 NB/ 3 SB	12	24	55	
Secondary Road	2	11	NA	40	

Test 1 – 15 min.	From	3:00 PM	To	3:15 PM
Decibel Reading	70.2	L Aeq	75.7	L max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	NB/EB	SB/WB
Cars	960	756	48	43
Medium Trucks (3-axle)	28	46	9	2
Heavy Trucks	119	92	1	0
Buses				
Motorcycles				

Test 2 – min.	From		To	
Decibel Reading		L Aeq		L max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	NB/EB	SB/WB
Cars			0	
Medium Trucks (3-axle)			0	
Heavy Trucks			0	
Buses			0	
Motorcycles			0	



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## NOISE DATA SHEET

Ted counts 106<sup>th</sup> and USA Parkway, Kirk video I-69

Job # 4184		AM/PM		Site # NE2		
Project: Des. 1298035 – New 106 <sup>th</sup> St. Interchange@I-69, Fishers, IN		Date: 23 Oct 2013				
Instrumentation		Rion NL-31 Sound Level Meter, slow response, A-weighting, exchange rate = 3		Day of Week M T <u>W</u> T F		
		Norsonic Sound Calibrator type 1251 @ 114 dB		Calibration Confirmed Yes/No		
Location		Eastern Star Church		Temp. 50 F		
Receptor Represents		Church grounds near 106 <sup>th</sup> Street		Heavy Overcast/Light Overcast/ Sunny/ Clear Night/ Overcast Night		
Major Noise Source		106 <sup>th</sup> Street		Humidity 50 %		
Secondary Source		USA Parkway and I-69 (distant)		Pavement Dry/Wet		
Land Use Category		A-57dBA Serene Park	B&C-67dBA Residential/Active Park/ Hosp/Church/Section 4(f)	E-72dBA Motels/Rest./ Offices/Devel.	F-NA Agric./Manuf./ Mainten./Retail	G-NA Undeveloped lands not yet permitted
				Wind Upwind -1 to -5 Calm -1 to +1 Downwind +1 to +5		

	# Lanes	Lane Width	Median Width	Posted Speed	*Observed Speed
Major Road	2	11	NA	40	
Secondary Road	4 NB/ 3 SB	12	24	55	

Test 1 – min.	From	2:35 PM	To	2:50 PM
Decibel Reading	56.5	L Aeq	63.7	L max
Traffic Volumes	106th EB/WB	USA Park NB/SB	Secondary Road I-69 NB/EB	SB/WB
Cars	84	65	896	717
Medium Trucks (3-axle)	2	4	44	41
Heavy Trucks	2	4	108	99
Buses				
Motorcycles				

Test 2 – min.	From		To	
Decibel Reading		L Aeq		L max
Traffic Volumes	Major Road NB/EB	SB/WB	Secondary Road NB/EB	SB/WB
Cars			0	
Medium Trucks (3-axle)			0	
Heavy Trucks			0	
Buses			0	
Motorcycles			0	



## NOISE DATA SHEET

Ted counts USA Parkway, Kirk video I-69

Job # 4184		AM/PM		Site # NE3	
Project: Des. 1298035 – New 106 <sup>th</sup> St. Interchange@1-69, Fishers, IN		Date: 23 Oct 2013			
Instrumentation		Rion NL-31 Sound Level Meter, slow response, A-weighting, exchange rate = 3		Day of Week M T <u>W</u> T F	
		Norsonic Sound Calibrator type 1251 @ 114 dB		Calibration Confirmed Yes/No	
Location		Field		Temp. 50 F	
Receptor Represents		Future office development		Heavy Overcast/Light Overcast/ Sunny/ Clear Night/ Overcast Night	
Major Noise Source		I-69		Humidity 50 %	
Secondary Source		USA Parkway		Pavement Dry/Wet	
Land Use Category		A-57dBA Serene Park	B&C-67dBA Residential/Active Park/ Hosp/Church/Section 4(f)	E-72dBA Motels/Rest./ Offices/Devel.	F-NA Agric./Manuf./ Mainten./Retail
				G-NA Undeveloped lands not yet permitted	Wind Upwind -1 to -5 Calm -1 to +1 Downwind +1 to +5

	# Lanes	Lane Width	Median Width	Posted Speed	*Observed Speed
Major Road	4 NB/ 3 SB	12	24	55	
Secondary Road	2	11	NA	40	

Test 1 – min.	From	3:25 PM	To	3:40 PM
Decibel Reading	70.7	L Aeq	75.4	L max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	NB/EB	SB/WB
Cars	1142	743	35	36
Medium Trucks (3-axle)	28	28	2	1
Heavy Trucks	99	82	1	
Buses				
Motorcycles				

Test 2 – min.	From		To	
Decibel Reading		L Aeq		L max
Traffic Volumes	Major Road		Secondary Road	
	NB/EB	SB/WB	NB/EB	SB/WB
Cars			0	
Medium Trucks (3-axle)			0	
Heavy Trucks			0	
Buses			0	
Motorcycles			0	



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## SCANTEK, INC.

Sound & Vibration Instrumentation  
& Engineering  
6430-C Dobbin Road  
Columbia, Maryland 21045 USA

## Invoice

DATE	INVOICE NO.
10/31/2013	24793

BILL TO	SHIP TO
The Corradino Group Attn: E. M. (Ted) Stone 200 S. Fifth Suite 300N Louisville, KY 40202	The Corradino Group Jason Bowers, T: 317-488-2363 jbowers@corradino.com 200 S. Meridian St. Suite 330 Indianapolis, IN 46225

P.O. NO.	TERMS	DUE DATE	SHIP DATE	SHIP VIA	FOB	VENDOR #	
Rent Agmt 10/21/13	American Express	10/31/2013	10/21/2013	UPS AM 2 D...	MD 21045 USA		
ITEM	DESCRIPTION				QTY	RATE	AMOUNT
Rental Period	For the period: 10/23/13 - 10/28/13 (Four Days						
Rent NL31 (b)	Rion NL-31 meter sn: 00593644, with UC-53 microphone sn: 316172, NH-21 preamplifier sn: 30406, and standard accessories. Rental fees: \$45/day, \$225/week				1	225.00	225.00
Rent 1251 (b)	N-1251 calibrator sn: 30829 w/ standard accessories. Rental fees: Included				1	0.00	0.00
Shipping	Subtotal Shipping/Insurance					40.00	225.00 40.00
For questions concerning this invoice, please email <a href="mailto:Info@Scantekinc.com">Info@Scantekinc.com</a> or call 410-290-7726					Total \$265.00		
FEIN # 52-1386726. RESERVATION OF PROPERTY: All goods supplied remain sellers property until full payment is received. MAKE CHECKS PAYABLE TO: SCANTEK, INC. 6430-C Dobbin Rd, Columbia MD 21045 USA. Pay sales tax due to MD or IN to Scantek; Pay sales tax due to other states directly to that state.					Payments/Credits \$-265.00		
					Balance Due \$0.00		

**Scantek, Inc.**  
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1  
ACCREDITED by NVLAP (an ILAC and APLAC signatory)

**NVLAP**<sup>®</sup>

NVLAP Lab Code: 200625-0

## Calibration Certificate No.28372

Instrument: **Sound Level Meter**  
Model: **NL31**  
Manufacturer: **Rion**  
Serial number: **00541620**  
Tested with: **Microphone UC53A s/n 310197**  
**Preamplifier NH21 s/n 19449**  
Type (class): **1**  
Customer: **Scantek, Inc.**  
Tel/Fax: **410-290-7726 / 410-290-9167**

Date Calibrated: **3/18/2013** Cal Due: **3/18/2014**  
Status: 

Received	Sent
X	X

  
In tolerance: 

--	--

  
Out of tolerance: 

--	--

  
See comments: 

--	--

  
Contains non-accredited tests:    Yes X No  
Calibration service:    Basic X Standard  
Address: **6430 Dobbin Road, Suite C,**  
**Columbia, MD 21045**

Tested in accordance with the following procedures and standards:  
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/22/2012  
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	31052	Sep 14, 2012	Scantek, Inc./ NVLAP	Sep 14, 2013
DS-360-SRS	Function Generator	33584	Sep 9, 2011	ACR Env./ A2LA	Sep 9, 2013
34401A-Agilent Technologies	Digital Voltmeter	US36120731	Sep 12, 2012	ACR Env./ A2LA	Sep 12, 2013
HM30-Thommen	Meteo Station	1040170/39633	Dec 6, 2012	ACR Env./ A2LA	Dec 6, 2013
PC Program 1019 Norsonic	Calibration software	v.5.2	Validated Mar 2011	Scantek, Inc.	-
1251-Norsonic	Calibrator	30878	Dec 14, 2012	Scantek, Inc./ NVLAP	Dec 14, 2013

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

### Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.0 °C	100.270 kPa	42.7 %RH

Calibrated by:	Preston Mackin	Authorized signatory:	Mariana Buzduga
Signature	<i>Preston Mackin</i>	Signature	<i>Mariana Buzduga</i>
Date	3/18/2013	Date	3/19/2013

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.

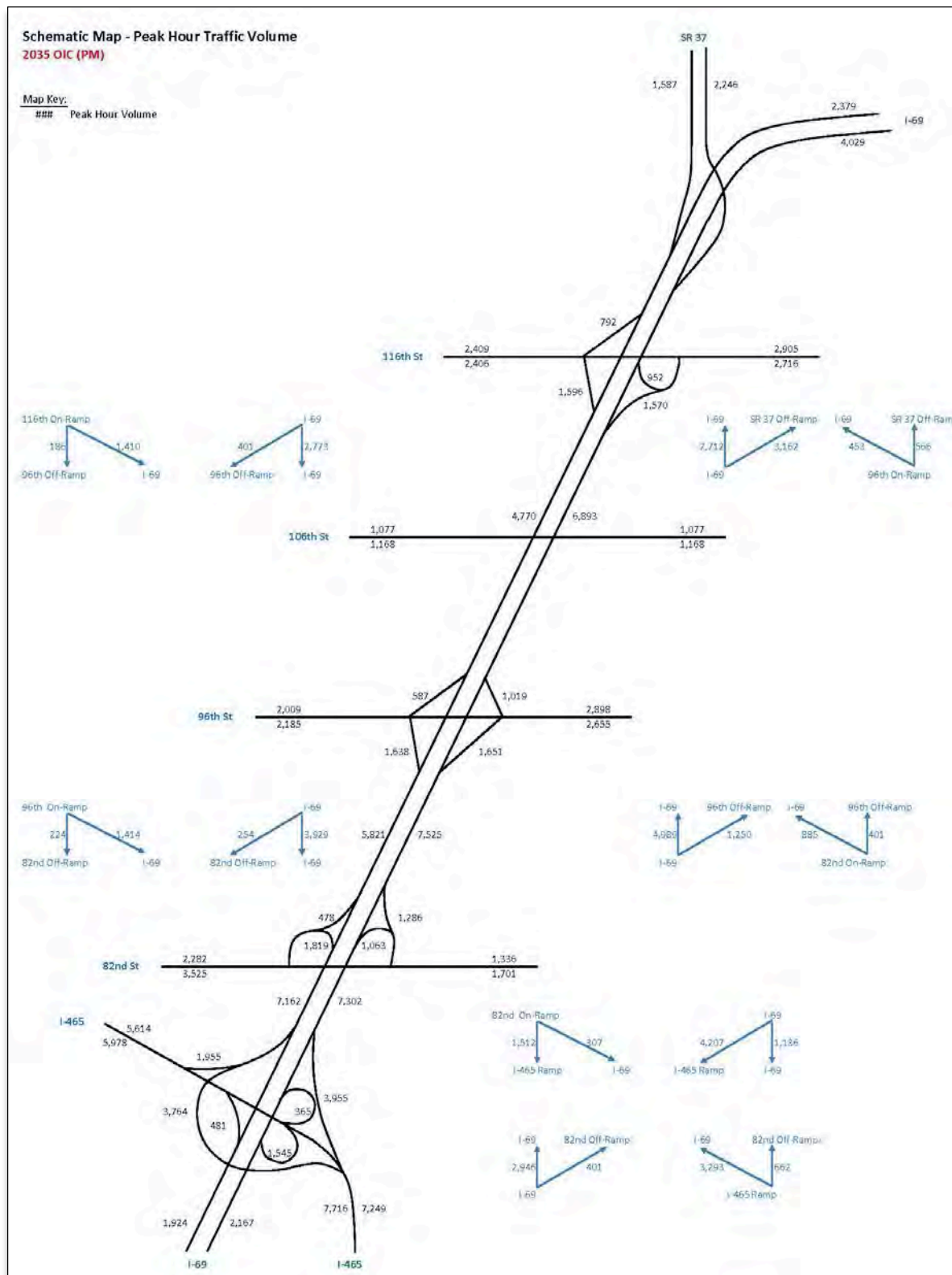
# Noise Report

## APPENDIX C

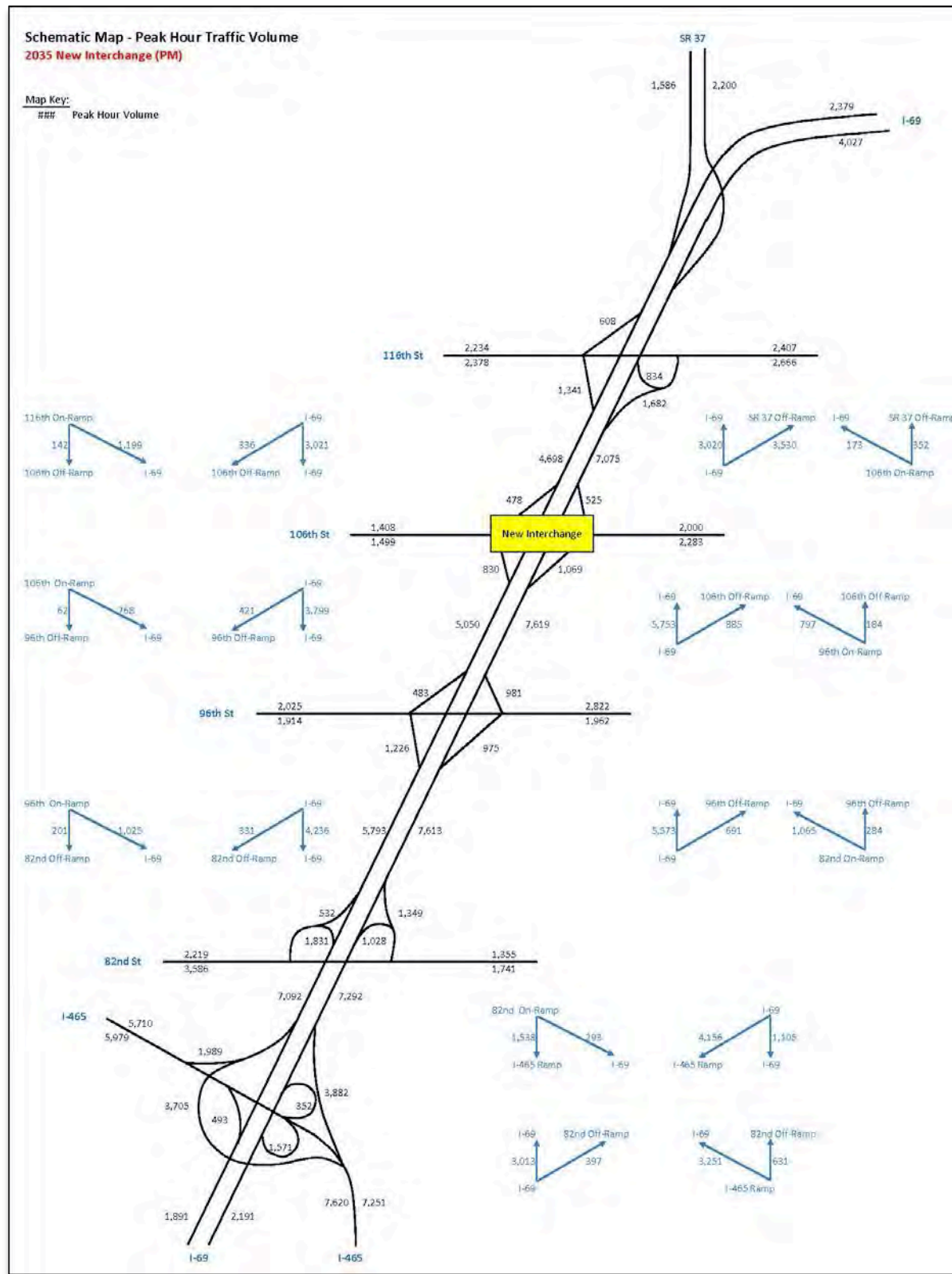
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### TRAFFIC

## 2035 TransCAD Model Results – No Build PM Peak

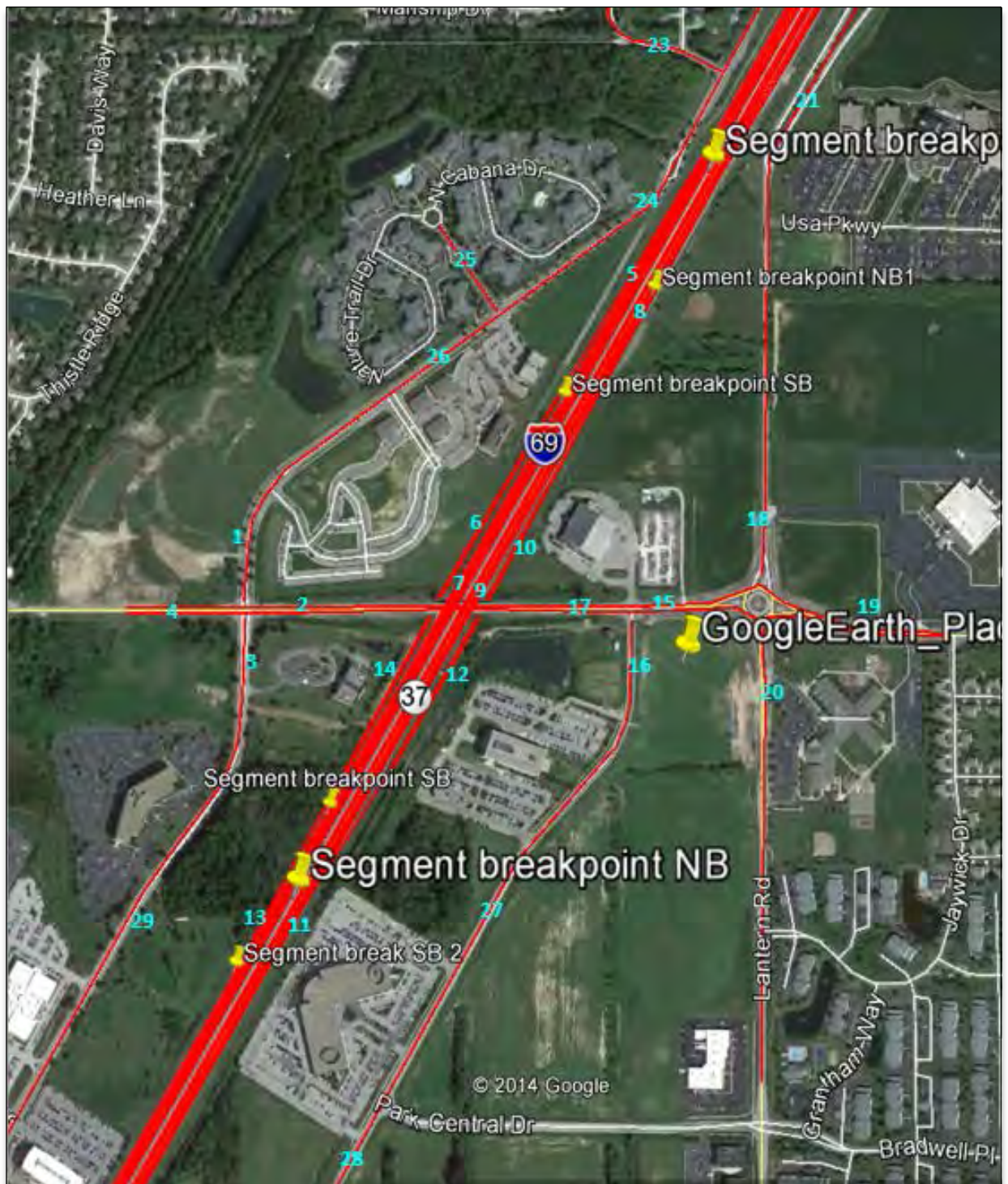


## 2035 TransCAD Model Results – Build PM Peak



## Traffic Key Map

(See data in table that follows.)



## TRAFFIC SPREADSHEET DRAWN FROM TRANSCADD RUNS

Location	Location Description	2015 No Build		2015 Build		2035 No Build		2035 Build	
		AM	PM	AM	PM	AM	PM	AM	PM
1	106th St @ Crosspoint Blvd, north leg (between 106th St and Horse Creek Ct)	473	641	437	616	814	1,032	832	987
2	106th St @ Crosspoint Blvd, east leg	1,082	1,551	2,114	1,889	1,848	2,245	3,066	2,907
3	106th St @ Crosspoint Blvd, south leg (Crosspoint Blvd north part)	513	625	435	456	822	944	725	763
4	106th St @ Crosspoint Blvd, west leg	732	953	982	1,061	1,428	1,571	1,709	1,807
5	I-69 Mainline SB, north of 106th St	5,556	3,935	5,652	3,981	6,830	4,770	7,028	4,698
6	New Interchange, SB off-ramp			440	372			703	478
7	I-69 Mainline SB, between gores			5,212	3,609			6,325	4,220
8	I-69 Mainline NB, north of 106th St	2,782	5,826	2,772	5,915	3,582	6,893	3,442	7,075
9	I-69 Mainline NB, between gores			2,685	5,640			3,220	6,550
10	New Interchange, NB on-ramp			87	275			222	525
11	I-69 Mainline NB, south of 106th St	2,782	5,826	3,146	6,457	3,582	6,893	4,079	7,619
12	New Interchange, NB off-ramp			461	817			859	1,069
13	I-69 Mainline SB, south of 106th St	5,556	3,935	5,549	4,088	6,830	4,770	6,938	5,050
14	New Interchange, SB on-ramp			337	479			613	830
15	106th St @ Kincaid, east leg	1,359	1,839	1,991	2,493	2,182	2,628	3,492	3,808
16	106th St @ Kincaid, south leg (Kincaid Dr north part)	532	694	561	274	739	816	622	298
17	106th St @ Kincaid, west leg	1,082	1,551	2,521	2,828	1,848	2,245	3,949	4,283
18	106th St @ USA Pkwy, north leg	484	703	673	903	1,139	1,389	1,306	1,640
19	106th St @ USA Pkwy, east leg	972	1,473	1,123	1,611	1,600	2,126	1,693	2,120
20	106th St @ USA Pkwy, south leg	473	845	527	1,201	813	1,167	959	1,671
21	Local Rd, north of USA Pkwy	153	217	234	289	410	443	376	432
22	Latern Rd, north of Fishers Point Blvd	140	213	72	100	237	294	126	170
23	Fishers Point Blvd	60	103	74	133	73	110	94	136
24	Latern Rd between Fishers Point Blvd and Latern Woods Blvd	200	316	146	233	310	404	220	306
25	Latern Woods Blvd	31	30	21	7	55	35	16	13
26	Latern Rd between Latern Woods Blvd and Horse Creek CT	149	236	107	190	217	301	175	239
27	Kincaid Dr (south part)	106	238	82	116	223	333	102	100
28	Kincaid Dr, south of Park Central Dr	110	241	106	452	243	344	149	444
29	Crosspoint Blvd (south part)	329	398	218	227	479	541	263	292

# Noise Report

## APPENDIX D

---

### TNM2.5 RESULTS 2014 and 2035 BUILD

## RESULTS: SOUND LEVELS

4184

The Corradino Group  
T Stone

17 March 2015

TNM 2.5

Calculated with TNM 2.5

## RESULTS: SOUND LEVELS

PROJECT/CONTRACT:

4184

RUN: 2014 Validation

BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless  
a State highway agency substantiates the use  
of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver															
Name	No.	#DUs	Existing LAeq1h	No Barrier		With Barrier				Type Impact	Increase over existing		Noise Reduction		Calculated minus Goal
				LAeq1h Calculated	Crit'n	LAeq1h Calculated	Crit'n	LAeq1h Calculated	Crit'n		LAeq1h Calculated	Crit'n	LAeq1h Calculated	Goal	
			dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA
SE1 Freedom Mortgage	1	0	70.0	67.1	71	71	-2.9	10	----	67.1	0.0	5	-5.0		
SE2 Flanigan House	2	0	63.7	62.1	71	71	-1.6	10	----	62.1	0.0	5	-5.0		
SE3 Elem School	3	0	59.2	58.6	66	66	-0.6	10	----	58.6	0.0	5	-5.0		
NE1 Brick Sales	4	0	70.2	71.0	71	71	0.8	10	Snd Lvl	71.0	0.0	5	-5.0		
NE2 Church	5	0	56.5	54.6	66	66	-1.9	10	----	54.6	0.0	5	-5.0		
NE3 near Sallie Mae	7	0	70.7	67.7	71	71	-3.0	10	----	67.7	0.0	5	-5.0		
SW1 Office Bldg	10	0	67.4	68.1	71	71	0.7	10	----	68.1	0.0	5	-5.0		
Roche	12	0	0.0	69.7	71	71	69.7	10	----	69.7	0.0	5	-5.0		
Sallie Mae	13	0	0.0	65.5	71	71	65.5	10	----	65.5	0.0	5	-5.0		
Dwelling Units															
# DUs			Noise Reduction												
			Min	Avg	Max										
			dB	dB	dB										
All Selected			0	0.0	0.0	0.0									
All Impacted			0	0.0	0.0	0.0									
All that meet NR Goal			0	0.0	0.0	0.0									

I:\Projects\4184Noise\TNM runs\2014 no NW quad

1

17 March 2015

## RESULTS: SOUND LEVELS

4184

The Corradino Group  
T Stone

18 March 2015  
TNM 2.5  
Calculated with TNM 2.5

## RESULTS: SOUND LEVELS

PROJECT/CONTRACT:

RUN: 4184

BARRIER DESIGN: 2035 Build

ATMOSPHERICS: INPUT HEIGHTS

68 deg F, 50% RH

Average pavement type shall be used unless  
a State highway agency substantiates the use  
of a different type with approval of FHWA.

Receiver											
Name	No.	#DUs	Existing LAeq1h	No Barrier		Increase over existing		Type Impact	With Barrier		Calculated minus Goal
				LAeq1h Calculated	Crit'n	Calculated	Crit'n Sub'l Inc		Calculated LAeq1h	Noise Reduction Calculated Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB
SE1 Freedom Mortgage	1	0	70.0	68.9	71	-1.1	10	----	68.9	0.0	5
SE3 Elem School	3	0	59.2	61.5	66	2.3	10	----	61.5	0.0	5
NE1 Brick Sales	4	0	70.2	63.6	71	-6.6	10	----	63.6	0.0	5
NE2 Church	5	0	56.5	60.2	66	3.7	10	----	60.2	0.0	5
NE3 near Sallie Mae	7	0	70.7	71.2	71	0.5	10	Snd Lvl	71.2	0.0	5
SW1 Office Bldg	10	0	67.4	62.9	71	-4.5	10	----	62.9	0.0	5
Roche	12	0	0.0	74.2	71	74.2	10	Snd Lvl	74.2	0.0	5
Sallie Mae	13	0	0.0	68.7	71	68.7	10	----	68.7	0.0	5
Dwelling Units											
# DUs			Noise Reduction								
			Min	Avg	Max						
			dB	dB	dB						
All Selected		0	0.0	0.0	0.0						
All Impacted		0	0.0	0.0	0.0						
All that meet NPR Goal		0	0.0	0.0	0.0						

I:\Projects\4184\Noise\TNM runs\2035 Build no NW quad

1

18 March 2015

# Appendix J

## Environmental Justice



Legend:

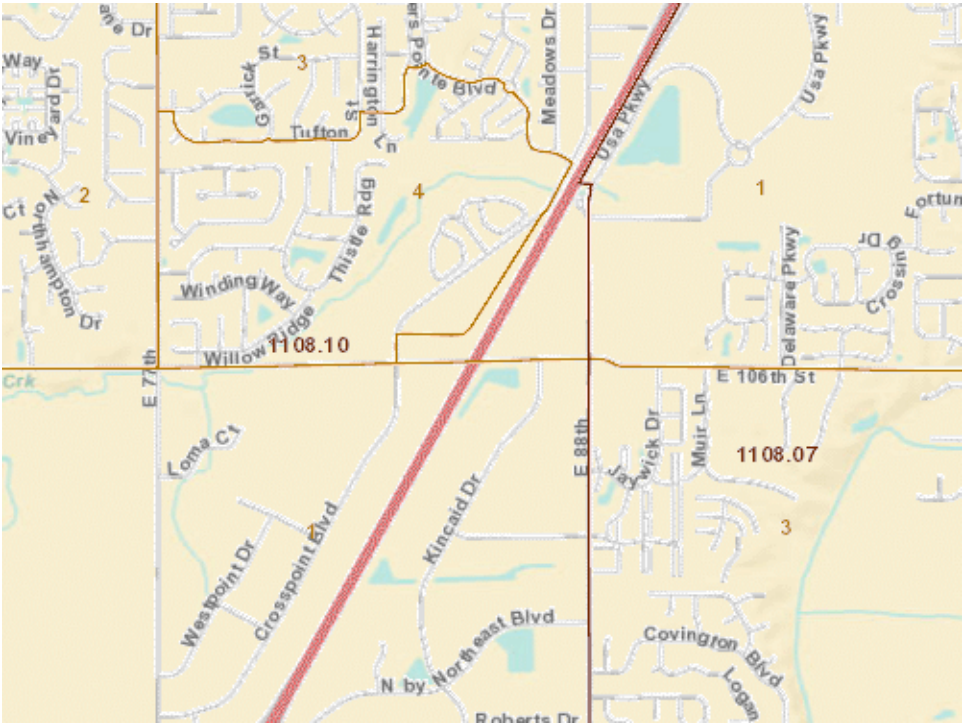
Boundaries

- State
- '13 County
- '13 Census Tract
- '13 Block Group

Items in grey text are not visible at this zoom level

Features

- Major Road
- Street
- Stream/Waterbody



B03002: HISPANIC OR LATINO ORIGIN  
2008-2012 American Community Survey 5-

	COC		AC	
	Hamilton County, Indiana		Census Tract 1108.10 (part),	
	Estimate	Margin of Error	Estimate	Margin of Error
Total:	276,098	*****	6,152	+/-381
Not Hispanic or Latino:	266,559	*****	6,134	+/-382
White alone	238,359	+/-277	5,517	+/-439
Black or African American alone	9,152	+/-488	455	+/-359
American Indian and Alaska Native	350	+/-131	0	+/-16
Asian alone	12,916	+/-487	41	+/-50
Native Hawaiian and Other Pacific	61	+/-58	0	+/-16
Some other race alone	449	+/-272	0	+/-16
Two or more races:	5,272	+/-717	121	+/-108
Two races including Some other race	298	+/-155	0	+/-16
Two races excluding Some other	4,974	+/-690	121	+/-108
Hispanic or Latino:	9,539	*****	18	+/-32
White alone	6,701	+/-606	17	+/-31
Black or African American alone	199	+/-204	0	+/-16
American Indian and Alaska Native	40	+/-50	0	+/-16
Asian alone	36	+/-43	0	+/-16
Native Hawaiian and Other Pacific	0	+/-27	0	+/-16
Some other race alone	1,626	+/-450	1	+/-3
Two or more races:	937	+/-455	0	+/-16
Two races including Some other race	426	+/-276	0	+/-16
Two races excluding Some other	511	+/-343	0	+/-16

Number Non-white/Minority	37739	635
Percent Non-white/Minority	13.67	10.32
125 % COC	17.09	< COC
Potential Minority EJ Impact?		No

B17001: POVERTY STATUS IN THE  
2008-2012 American Community Survey 5-

	COC		AC	
	Hamilton County, Indiana		Census Tract 1108.10	
	Estimate	Margin of	Estimate	Margin of
Total:	274,404	+/-304	6,152	+/-381
Income in the past 12 months below	12,760	+/-1,241	257	+/-189
Male:	5,705	+/-721	133	+/-123
Under 5 years	802	+/-236	27	+/-32
5 years	153	+/-109	0	+/-16
6 to 11 years	869	+/-229	37	+/-37
12 to 14 years	647	+/-250	0	+/-16
15 years	222	+/-137	16	+/-29
16 and 17 years	110	+/-82	0	+/-16
18 to 24 years	594	+/-184	0	+/-16
25 to 34 years	677	+/-229	37	+/-56
35 to 44 years	452	+/-142	0	+/-16
45 to 54 years	683	+/-227	15	+/-24
55 to 64 years	398	+/-144	0	+/-16
65 to 74 years	78	+/-60	0	+/-16
75 years and over	20	+/-20	1	+/-3
Female:	7,055	+/-743	124	+/-89
Under 5 years	446	+/-164	11	+/-18
5 years	39	+/-38	10	+/-18
6 to 11 years	1,126	+/-266	9	+/-15
12 to 14 years	312	+/-153	0	+/-16
15 years	32	+/-31	0	+/-16
16 and 17 years	159	+/-93	0	+/-16
18 to 24 years	950	+/-240	0	+/-16
25 to 34 years	1,259	+/-304	35	+/-36
35 to 44 years	966	+/-238	0	+/-16
45 to 54 years	751	+/-227	16	+/-24
55 to 64 years	533	+/-162	11	+/-19
65 to 74 years	239	+/-128	32	+/-37
75 years and over	243	+/-113	0	+/-16
Income in the past 12 months at or	261,644	+/-1,235	5,895	+/-394
Male:	128,568	+/-757	2,772	+/-259
Under 5 years	9,989	+/-245	222	+/-108
5 years	2,629	+/-396	109	+/-92
6 to 11 years	13,817	+/-620	200	+/-98
12 to 14 years	6,363	+/-512	108	+/-83
15 years	1,979	+/-288	40	+/-35
16 and 17 years	4,398	+/-304	106	+/-93
18 to 24 years	7,638	+/-200	177	+/-100
25 to 34 years	16,253	+/-239	575	+/-111
35 to 44 years	21,979	+/-153	295	+/-104
45 to 54 years	19,995	+/-247	471	+/-150
55 to 64 years	13,258	+/-203	229	+/-88
65 to 74 years	6,363	+/-156	170	+/-79
75 years and over	3,907	+/-123	70	+/-57
Female:	133,076	+/-729	3,123	+/-330
Under 5 years	9,821	+/-176	139	+/-72
5 years	2,197	+/-328	59	+/-48
6 to 11 years	13,375	+/-508	122	+/-78
12 to 14 years	6,583	+/-500	218	+/-144

15 years	2,124	+/-308	88	+/-73
16 and 17 years	4,027	+/-298	90	+/-83
18 to 24 years	6,987	+/-243	221	+/-114
25 to 34 years	17,772	+/-309	528	+/-146
35 to 44 years	22,980	+/-246	488	+/-138
45 to 54 years	20,869	+/-236	555	+/-116
55 to 64 years	13,756	+/-206	297	+/-122
65 to 74 years	7,156	+/-203	241	+/-125
75 years and over	5,429	+/-217	77	+/-53

Number Low Income	12,760	257
Percent Low Income	4.65	4.18
125% COC	5.81	< COC
Potential Poverty Impact?		No

# **Appendix K**

## **TIP and STIP Documentation**



Planning the Transportation Future for the Indianapolis Region

## Indianapolis Regional Transportation Improvement Program (IRTIP)

[Project Overview](#)
[Funding History](#)
[Amendment History](#)
[Map](#)

[<<Go Back](#)

### New Interchange Construction at I-69 and 106th Street in Fishers, Hamilton County (1298035)

Project Description: Construction of a new interchange at I-69 and 106th Street in Fishers

**Capacity Increasing, Regionally Significant, Modeling Project, Congestion Management Plan Project**

Project Status: **Programmed -**

Last Approved: **7/1/2015**

Estimated Open to Traffic: **2018**

Highway: **69**

Project Type: **New Interchange Construction**

Lead Agency: **INDOT**

INDOT District: **Greenfield**

County: **Hamilton Co.**

Est Total Cost: **\$36,000,000**

	Total	Prior	FY2016	FY2017	FY2018	FY2019	FY2020	PE	RW	CON	OTHER
FEDERAL - State STP	\$23,360,000	-	\$23,360,000	-	-	-	-	-	-	\$23,360,000	-
LOCAL	\$12,640,000	\$2,500,000	\$10,140,000	-	-	-	-	\$2,500,000	\$2,300,000	\$5,840,000	\$2,000,000
<b>TOTAL</b>	<b>\$36,000,000</b>	<b>\$2,500,000</b>	<b>\$33,500,000</b>	-	-	-	-	<b>\$2,500,000</b>	<b>\$2,300,000</b>	<b>\$29,200,000</b>	<b>\$2,000,000</b>

*\* For more detailed funding information, please click on the Funding History tab.*



U.S. Department  
of Transportation

<b>Federal Transit Administration</b> Region V 200 West Adams St., Suite 320 Chicago, IL 60606-5253	<b>Federal Highway Administration</b> Indiana Division 575 N. Pennsylvania St., Rm 254 Indianapolis, IN 46204-1576
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July 1, 2015

Roy Nunnally, Director  
Asset Management Division  
Indiana Department of Transportation  
100 N Senate Ave. N925  
Indianapolis, IN 46204

Dear Mr. Nunnally:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the documents necessary to make an air quality conformity finding on the Indianapolis Metropolitan Planning Organization FY 2016-2019 Transportation Improvement Program (TIP).

The Indiana Department of Environmental Management, the Indiana Department of Transportation, and the US Environmental Protection Agency have completed their reviews and recommend that we find the document conforms to the applicable air quality conformity requirements. Appropriate consultation and public involvement on the conformity analyses was completed.

Therefore, FHWA and FTA find the IMPO FY 2016-2019 TIP conform as required by the conformity rule. If you have any questions, please feel free to call Larry Heil of FHWA at (317) 226-7480 or Tony Greep of FTA at (312) 353-1646.

Sincerely,

Richard J. Marquis  
Division Administrator  
FHWA Indiana Division

Marisol Simón  
Regional Administrator  
FTA Region 5

cc: transmitted by e-mail  
Anna Gremling, IMPO  
Kathy Eaton-McKalip, INDOT  
Randy Walter, INDOT

# **Appendix L**

## Air Quality

## David Cleveland

---

**Subject:** Indiana PM 2.5 Hot Spot Consultation to determine if any are Projects of Air Quality Concern  
**Location:** FHWA Conference call #317-223-2343  
**Start:** Thu 9/18/2014 10:00 AM  
**End:** Thu 9/18/2014 12:00 PM  
**Show Time As:** Tentative  
**Recurrence:** (none)  
**Organizer:** LHEIL@dot.gov

INDOT has several projects that we need to consult with you to determine if they are projects of air quality concern:

Des#1383338 – I-70 ATL from SR-39 to SR-267  
Des#1173697 – I-70 Interchange Mod from I-465 to Post Rd  
Des#1383332 – I-69 ATL from SR-37 to SR-238  
Des#1383336 – I-69 ATL from SR-238 to SR-13  
Des#1298035 – I-69 New Interchange at 106th Street  
Des#1400597 – I-65 ATL from SR-311 to Memphis-Blue Lick Rd  
Des#0500194 – PR-61 NRC from SR-62 to SR-61 north of Boonville

INDOT is finalizing the model runs today and their consultant will complete the technical report that presents the logic of why each project should or should not be considered a project of air quality concern. FHWA wants to review that justification and forward it to you by September 15, 2014. These are mostly added travel lane projects, and we do not anticipate them to have substantive increases in truck volumes. So the consultant will determine what the background concentration for each project location is and present the traffic associated with the build and no-build scenarios. This should give us a sound basis to determine if they are projects of air quality concern. All of these projects need to have their NEPA documents approved by the end of the year, and so our purpose in meeting early with you is to allow adequate time if a quantitative hot spot analysis is required to support the NEPA decision.

Please block out this time to meet and discuss these projects so a decision can be made one way or the other. We can use our FHWA conference line. You will click right into the conference call once you dial 317-233-2343 without the need to enter a pass code.

Thanks!!

Larry Heil  
FHWA Indiana Division

# INDOT PM<sub>2.5</sub> Project Level Interagency Consultation

Conference Call Handouts  
September 18, 2014

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# Goals and Methods for Evaluation

## Goal:

- Identify INDOT projects “of air quality concern” (if any) that will require a PM<sub>2.5</sub> quantitative hot-spot analysis
- Include consultation decisions in NEPA documents to indicate projects are not of air quality concern

## Evaluation Methods:

- Compare current and forecast traffic volumes from the Indiana Statewide Travel Demand Model (ISTDM) vs. project examples identified in the current guidance
- Determine if ISTDM project Build vs. No-Build volume changes are “significant”
- Assess nearby monitor readings
- Compare project to other projects found to be of air quality concern

# EPA Guidance (Appendix B) Examples

Some examples of projects of local air quality concern that would be covered by 40 CFR 93.123(b)(1)(i) and (ii) are:

- A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) and 8% or more of such AADT is diesel truck traffic;
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal;
- Expansion of an existing highway or other facility that affects a congested intersection (operated at Level-of-Service D, E, or F) that has a significant increase in the number of diesel trucks; and,
- Similar highway projects that involve a significant increase in the number of diesel transit busses and/or diesel trucks.

---

Reference Link:

<http://www.epa.gov/oms/stateresources/transconf/policy/420b13053-appx.pdf>

# Previous INDOT Project-Level Analyses (Indianapolis)

Item	I-69 Section 5 (Bloomington to Martinsville) DES# 0300381	I-65 (SR44 to Southport Road) DES# 1383343/1383354/1383342/1383341
Highest AADT	2035 Build AADT = <b>61,588</b>	2035 Build AADT = <b>125,695</b>
Highest Truck Volume	2035 Build Trucks = <b>12,785</b>	2035 Build Trucks = <b>22,442</b>
Build vs. No-Build %	2035 AADT = + <b>38%</b> 2035 Trucks = + <b>16%</b>	2035 Trucks = < <b>10%</b>
Background Concentration	<b>10.43</b> µg/m <sup>3</sup>	<b>11.27</b> µg/m <sup>3</sup>
Estimated Analysis Year Design Values	2018 = <b>11.4</b> µg/m <sup>3</sup> 2035 = <b>11.1</b> µg/m <sup>3</sup>	2017 = <b>12.0</b> µg/m <sup>3</sup>

Compared against 15 µg/m<sup>3</sup> Annual NAAQS

\* Designations under 12 µg/m<sup>3</sup> NAAQS expected in December 2014

# INDOT Initial Project Screening

➤ Evaluated INDOT project lists to identify projects that clearly do not require a quantitative hot-spot analysis

- ☐ Not in a nonattainment/maintenance area
- ☐ Intersection projects
- ☐ Low traffic volumes (< 75,000 forecast AADT and 10,000 Trucks)
- ☐ No significant capacity increase resulting from project

➤ Identify projects for further review

	A	B	C	D	E	F	G	H	I	J	K	L	M	S	T	BO	BP	BQ
	Corr#	LRP#	Old LRP	KIN#	LD	DES	Contract Prefix	Contract Number	Contract#	District	CO#	County	Route	Location	Work Category Name	Section	Notes	ELIMINATE DUE
5	002			4454	Y	0400283	IR	30153	IR-30153	Greenfield	49	Marion	I465	From 0.5 mile W of I-69 interchange to 75th street	Added Travel Lanes Project	I-69 to 75th St		Active
6	016				N	1172943	IR	33066	IR-33066	Greenfield	49	Marion	I65	Ramp (I-465 to I-65 SB) over I-65 and I-465	Interchange Modification Project			Active
7	022				Y	1006581	IR	34001	IR-34001	Greenfield	29	Hamilton	I69	I-69 improvements from I-465 to 116th and SR 37 Interchan	Added Travel Lanes Project		SR-37 interchange	Under Construction
8	022				Y	1173161	IR	34166	IR-34166	Greenfield	49	Marion	I69	I-69 improvements from I-465 to 116th and SR 37 Interchan	Added Travel Lanes Project		96th St interchange	Under Construction
9																	82nd St interchange	Under Construction
11	266			5592	Y	1005696	IR	33274	IR-33274	Greenfield	49	Marion	US52	German Church Road	Intersection Improvement Project		German Church Rd intersection	Project Type
12	266				N	1005697	IR	33305	IR-33305	Greenfield	49	Marion	US52	Bade Davis	Intersection Improvement Project	No data for Bade	Bade Rd intersection	Project Type
13																	Davis Rd intersection	Project Type
14	266		2645			9700320	PLC	37344	PLC-37344	Greenfield	49	Marion	US52	Marion/Hancock County Line to CR 500W (PE & RW Trackin	Added Travel Lanes Project	C/L to CR500W	Mt. Comfort Rd intersection	Project Type
15	402				Y	1297199	IR	35187	IR-35187	Seymour	41	Johnson	I65	@ Worthsville Road, 7.7 miles North of SR 44	New Interchange Project			PM2.5 Study COMPLETED as
16	405				Y	1383332	R	37053	R-37053	Greenfield	29	Hamilton	I69	At SR 37 (N jct.) to 5.24 miles N of SR 37 (N jct.) (0.50 mile N	Added Travel Lanes Project	SR-37 to SR-238		Active
17	405				N	1383489	R	37053	R-37053	Greenfield	29	Hamilton	I69	I69 at Old SR238 (Exit 210)	Added Travel Lanes Project		SR-238 interchange	Active
18	405				Y	1383336	R	37055	R-37055	Greenfield	29	Hamilton	I69	5.24 mi N of SR 37 (N jct.) (0.50 mi N of old SR 238) to 0.85 n	Added Travel Lanes Project	SR-238 to SR-13	SR-13 interchange	Hold - reassessment of MM20
19	406				Y	1383338	R	37133	R-37133	Crawfordsville	32	Hendricks	I70	0.85 mile W of SR 39 to 0.50 mile E of SR 267	Added Travel Lanes Project	SR-39 to SR-267		Hold - reassessment of MM20
20	406				N	1400176	R	37133	R-37133	Crawfordsville	32	Hendricks	I70	SR39 at I70, 2.39 mi N of SR42	Added Travel Lanes Project		SR-39 interchange	Hold - reassessment of MM20
21	407				Y	1383343	R	37075	R-37075	Greenfield	41	Johnson	I65	4.72 miles S of I-465 South Leg to 2.88 miles S of I-465 South	Added Travel Lanes Project	County Line Rd to Southport Rd	Southport Rd Interchange	PM2.5 Study COMPLETED as
22	407				Y	1383354	R	37094	R-37094	Seymour	41	Johnson	I65	6.18 miles S of I-465 South Leg (0.50 mile N of Main St Greer	Added Travel Lanes Project	Main St to County Line Rd	County Line Rd interchange	PM2.5 Study COMPLETED as
23	407				Y	1383342	R	37095	R-37095	Seymour	41	Johnson	I65	5.41 miles N of SR 44 to 6.18 miles S of I-465 South Leg (Just	Added Travel Lanes Project	Whiteland Rd to Main St	Main St-Greenwood interchange	PM2.5 Study COMPLETED as
24	407				Y	1383341	R	37096	R-37096	Seymour	41	Johnson	I65	0.85 mile S of SR 44 to 5.41 miles N of SR 44 (0.50 mile N of	Added Travel Lanes Project	SR-44 to Whiteland Rd	Whiteland Rd interchange	PM2.5 Study COMPLETED as
25																	SR-44 interchange	PM2.5 Study COMPLETED as
26						0400962	R	30395	R-30395	Greenfield	49	Marion	SR135	1.52 miles S of US 31 (Edgewood Avenue)	Intersection Improvement Project		Edgewood Ave intersection	Project Type
27						1006121	R	34861	R-34861	Greenfield	29	Hamilton	SR38	At 226th Street/6 Points Road	District Intersection Improvement Project		226th St intersection	Project Type
28					Y	1173698	R	35048	R-35048	Greenfield	49	Marion	I465	exit ramp from EB I-465 to US 421(Michigan Road)	Interchange Modification	Interchange Modification	I465 at US-421/Michigan Rd interchange	Active
29					N	1173700	R	35048	R-35048	Greenfield	49	Marion	I465	Entrance ramp from US 421 (Michigan Road) to EB I-465	Added Travel Lanes Project			Active
30					N	1173701	R	35048	R-35048	Greenfield	49	Marion	I465	Entrance Ramp from US 421 (Michigan Road) to WB I-465	Added Travel Lanes Project			Active
31					N	1173704	R	35048	R-35048	Greenfield	49	Marion	I465	Exit ramp from WB I-465 to US 421 (Michigan Road)	Added Travel Lanes Project			Active
32						1173697	R	35459	R-35459	Greenfield	49	Marion	I70	Exit ramp from EB I-70 to Post Road RP 90+71	Interchange Modification		Post Rd interchange	Active
33						1298035	IR	35629	IR-35629	Greenfield	29	Hamilton	I69	I-69 at 106 Street	Intersection Improvement Project		106th St interchange	Active
34						1296847	R	35680	R-35680	Greenfield	29	Hamilton	SR37	SR 37; at Strawtown Ave (6.34 mile north SR 32 / SR 38 Conn	District Intersection Improvement Project		Strawtown Ave intersection	Project Type

# Projects Identified for Consultation Review (List)

Project DES # *	Route	Project Type	Length (mi)	County / Nonattainment Area
<b>1383332</b> 1383489	I-69	Added Travel Lanes	5.17	Hamilton Indianapolis
<b>1383336</b>		Added Travel Lanes	4.64	
<b>1298035</b>		New Interchange	0.47	
<b>1383338</b> 1400176	I-70	Added Travel Lanes	7.99	Hendricks Indianapolis
<b>1173697</b>		Interchange Modification	0.20	Marion Indianapolis
<b>1400597</b>	I-65	Added Travel Lanes	8.11	Clark Louisville KY-IN
<b>0500194</b> 1005804 (bridge)	SR 61	New Road (Minor Arterial) Construction	4.17	Warrick Evansville
<b>1297017</b>	Chicago Street Corridor	Added Travel Lanes	-----	Lake Chicago-Gary-Lake Cty

\* Project DES numbers in bold are shown on MAP (next page)

# Projects Identified for Consultation Review (Map)



### I-69 Projects

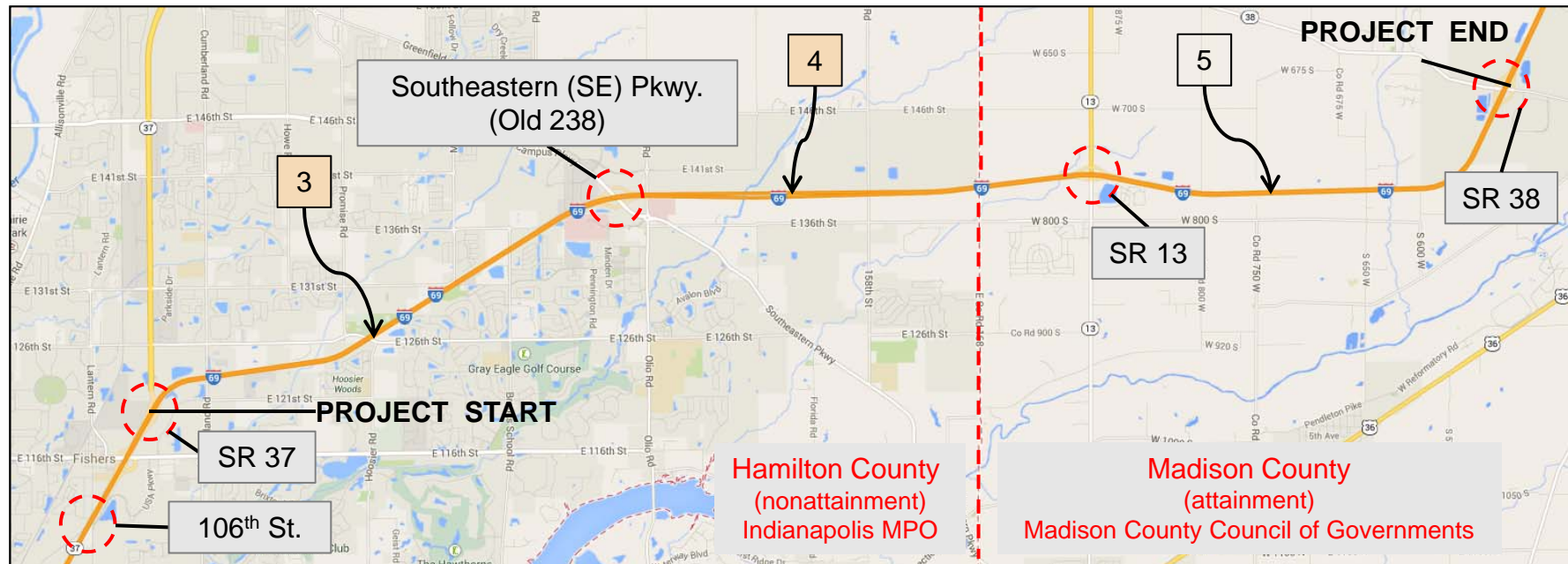
---

- DES # 1383332
- DES # 1383489
- DES # 1383336
- DES # 1298035

- **Add a third travel lane in each direction on I-69 from SR 37 to SR 38**
- **Interchange modification at Exit 210**
- **New interchange @ 106<sup>th</sup> Street**
  
- **Completion Year of 2016**
  
- **Eastern portion of project located in the Indianapolis PM2.5 nonattainment area**

# Project Location & Traffic Volumes

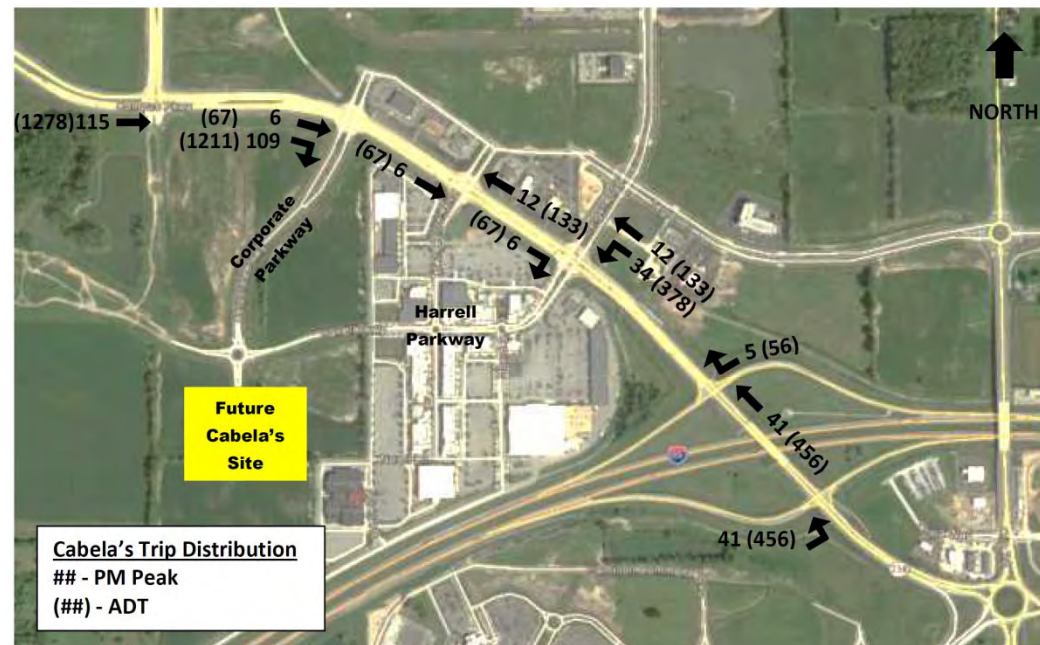
## I-69 PROJECTS



ID	I-69 Section	2010		2020 (closest to completion year)				2035			
		AADT	Truck	AADT	AADT Build vs NoBuild	Truck	Truck Build vs NoBuild	AADT	AADT Build vs NoBuild	Truck	Truck Build vs NoBuild
3	SR 37 to SE Pkwy	62,161	10,485	72,403	+ 4%	12,131	+ 1%	91,016	+ 11%	15,097	+ 11%
4	SE Pkwy to SR 13	57,734	11,749	64,784	+ 4%	13,090	+ 1%	77,006	+ 3%	15,394	+ 3%

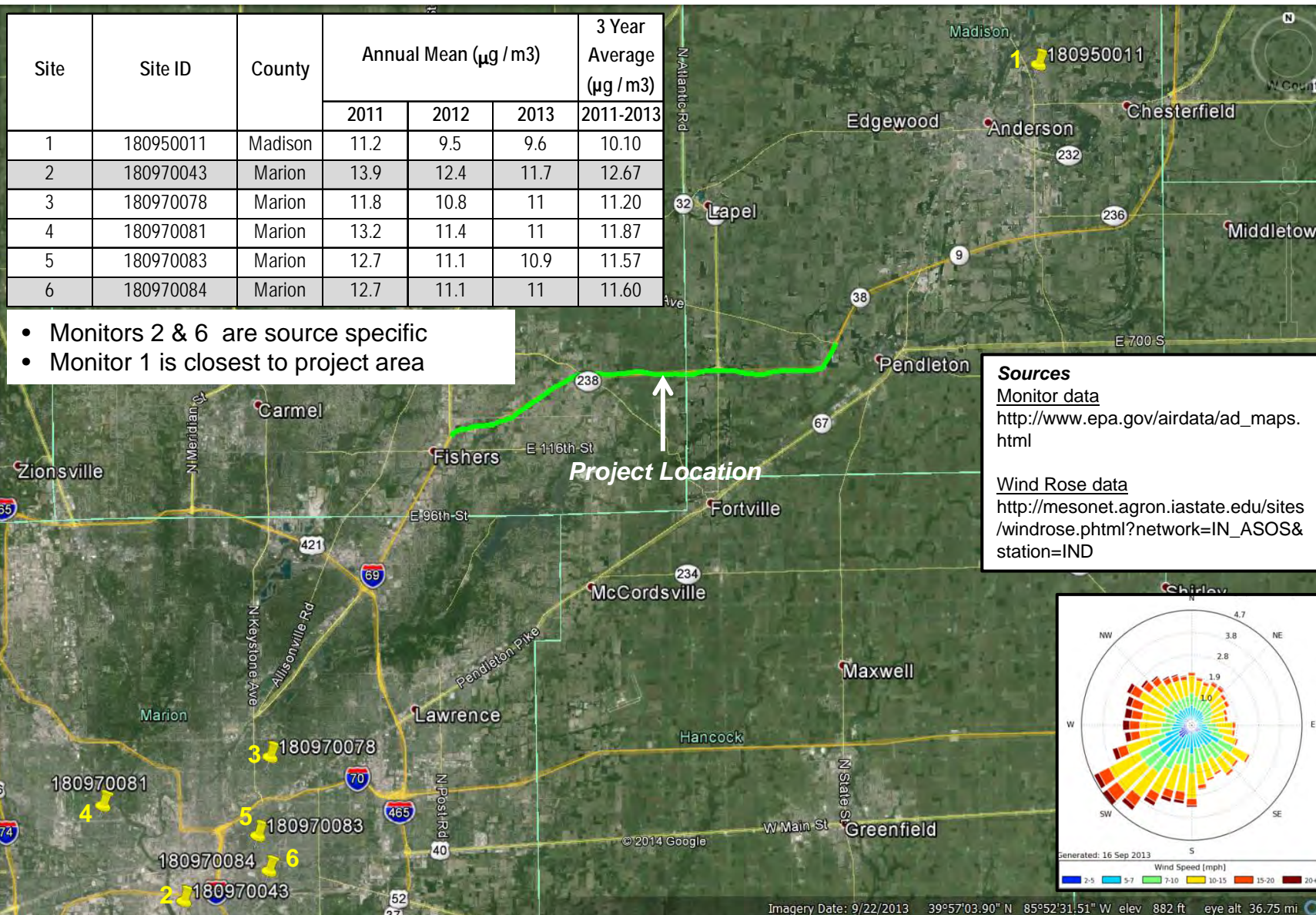
*August 21, 2014 INDOT Summary of ISTDM Base and Forecast Volumes including Build vs. No-Build*

- April 2014 AECOM “Traffic Volume Forecast” for I-69 at Campus Parkway (Exit 210) and SR 13 (Exit 214)
- Exit 210 (Campus Parkway) interchange in nonattainment area
- Average traffic growth rates determined from the Indianapolis MPO model
- Impact of new Cabela’s added to forecasts



# Background Concentration Monitor Locations and Readings

## I-69 PROJECTS



# Evaluating Need for Hot-spot Analysis

Highest Section: SR 37 to SE Pkwy

## I-69 PROJECTS

Item	Comparison to EPA Guidance Examples	Comparison To Previous I-69 Hot-Spot Analyses	Comparison To Previous I-65 Hot-Spot Analyses
Highest AADT	< 125,000 AADT	Higher	Lower (38% less AADT in 2035)
Highest Truck Volume	>10,000 Trucks	Higher	Lower (32% less Trucks in 2035)
Build vs. No-Build %	Only 1% Change in 2020 Diesel Traffic	Lower	Lower
Background Concentration	-----	Higher	Similar

**INDOT PM2.5 Project-Level Consultation**  
**Interagency Consultation Group**  
**Conference Call**

Thursday, September 18, 2014, 10:00 am

**1. Meeting Attendees**

Name	Organization	Email	Phone
Larry Heil	FHWA – Indiana Division	<a href="mailto:LHEIL@dot.gov">LHEIL@dot.gov</a>	317-226-748
Michelle Allen	FHWA – Indiana Division	<a href="mailto:Michelle.Allen@dot.gov">Michelle.Allen@dot.gov</a>	317-226-7344
Tony Maietta	US EPA – Region 5	<a href="mailto:maietta.anthony@epa.gov">maietta.anthony@epa.gov</a>	312-353-8777
Laura Hilden	INDOT – Environmental Services	<a href="mailto:lhilden@indot.in.gov">lhilden@indot.in.gov</a>	317-233-5018
Ken McMullen	INDOT – Environmental Policy Manager	<a href="mailto:KMCMULLEN@indot.IN.gov">KMCMULLEN@indot.IN.gov</a>	317-233-1164
Ron Bales	INDOT – NEPA Specialist	<a href="mailto:rbales@indot.IN.gov">rbales@indot.IN.gov</a>	317-234-4916
Frank Baukert	INDOT – Long Range Planning	<a href="mailto:FBAUKERT@indot.IN.gov">FBAUKERT@indot.IN.gov</a>	317-232-1486
Shawn Seals	IDEM – Office of Air Quality	<a href="mailto:SSEALS@idem.IN.gov">SSEALS@idem.IN.gov</a>	317-233-0425
Dan Szekeres	Michael Baker Jr., Inc. (Baker)	<a href="mailto:dszekeres@mbakerintl.com">dszekeres@mbakerintl.com</a>	717-221-2019
Rob Dabadie	Baker	<a href="mailto:RDabadie@mbakerintl.com">RDabadie@mbakerintl.com</a>	410-689-3452
Mary Jo Hamman	Baker	<a href="mailto:mhamman@mbakerintl.com">mhamman@mbakerintl.com</a>	317-663-8190
Dean Munn	Corradino Group	<a href="mailto:dmunn@corradino.com">dmunn@corradino.com</a>	317-488-2363

Materials: Attached Handouts (INDOT PM25 Project-Level Consultation Handouts 9-18-14.pdf)

**2. Overview**

- Larry Heil (FHWA) provided background on the purpose of the conference call.
- In Indiana, project-level air quality analyses have been completed for three projects (I-69, I-65, I-190). For each analysis, the project portion of the total concentration was about 1 µg/m<sup>3</sup> and forecasted peak year concentrations were below the current 15 µg/m<sup>3</sup> annual PM2.5 National Ambient Air Quality Standard (NAAQS).
- All projects except for Chicago St and the 106th St. interchange are being advanced as Categorical Exclusions. These other projects are expected to be Environmental Assessments.

**3. Project Review**

- Dan Szekeres (Baker) led discussions through each of the handout pages including an overview of the key data and resources to assist the consultation group in determining whether projects are of “air quality concern” requiring a quantitative analysis.
- The evaluation methods included an assessment of existing and forecast traffic volumes, the impact of the project on volume (build vs. no-build), nearby monitor readings, and comparisons of volumes to EPA guidance examples. All forecasted traffic volumes were developed from the Indiana Statewide

Travel Demand Model (ISTDM) and produced by INDOT.

- Handout page 4 provides roadway traffic and monitor data for the completed quantitative hotspot analyses for I-69 (Section 5) and I-65 (SR 44 to Southport Road) under the current NAAQS. Both IDEM and EPA noted that they do not expect the Indianapolis area to be nonattainment under the upcoming 2012 PM<sub>2.5</sub> NAAQS designations.
- IDEM commented that there may be other factors and considerations when evaluating projects for quantitative analysis beyond the current numbers provided in the handouts. However, no specific concerns or issues were identified for the projects under consideration at this time.
- For the I-65 project in Clark County, IDEM noted that this area is the most sensitive PM area in the state. However, it was agreed that the project impact on diesel traffic for this project is expected to be minimal.
- All participants on the consultation call agreed that quantitative analyses were not required for each of the projects.
- Minor enhancements to the handout materials will be provided including:
  - Remove the reference to "15 µg/m<sup>3</sup>" in the footnote on Slide 4
  - Modify the graphic on Slide 10 to show the 106<sup>th</sup> St. Interchange
  - Remove decision references for each grouping of projects on Slides 13, 18, 23, 28, 33
  - Include traffic count information for SR 61 on Slide 26

#### **4. Conclusions**

- The interagency consultation group concurred that each of the projects provided in the handouts (see handout page 6) is not a project of air quality concern and does not require a quantitative hotspot analysis. This includes the following project DES #s:
  - DES # 1383332
  - DES # 1383489
  - DES # 1383336
  - DES # 1298035
  - DES # 1383338
  - DES # 1400176
  - DES # 1173697
  - DES #1400597
  - DES # 0500194
  - DES # 1005804
  - DES # 1297017
- Each of the environmental documents should contain the conference call meeting minutes and the associated handouts. The conformity determination will include references to indicate that the associated projects were determined not to be of air quality concern.
- INDOT and FHWA will continue to track other new major transportation investment projects to determine future consultation.

Meeting concluded at 10:55 am ET.