

Additional Information (AI)
Des. No. 1500143
Original CE-4 Des. No. 1592433
I-70/SR 39 Interchange Modification
Hendricks County
January 30, 2019

Approval

_____ Date: _____
ES Signature

_____ Date: _____
FHWA Signature

Release for Public Involvement

KER _____ Date: 1-31-19
ES Initials

Certification of Public Involvement

_____ Date: _____
Office of Public Involvement

Name and Organization of AI Preparer

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INTRODUCTION

The I-70/SR 39 interchange was identified for improvement as part of a larger project to add travel lanes to I-70 (I-70 Added Travel Lanes [I-70 ATL]), under designation number (Des. No.) 1592433. The scope of work for the I-70/SR39 interchange in the Categorical Exclusion-Level 4 (CE-4) documents for the I-70 ATL project, approved November 14, 2017, have changed and requires an addendum with this Additional Information (AI) document. The original scope was to replace the SR 39 bridge over I-70 and reconfigure the ramp terminals, while maintaining a standard diamond layout. Updated traffic data indicated higher traffic volumes than anticipated, which warranted the investigation of additional interchange alternatives. This new investigation resulted in a change in scope of work and required a new project under Des. No. 1500143. The scope of work under Des. No. 1500143 and how it is different is explained below, starting with the history of the project, a discussion on the original scope and scope changes that warranted this AI, and concluding with the resources that required supplemental review.

PROJECT HISTORY

The original environmental document for the I-70/SR 39 interchange was approved by the Indiana Department of Transportation (INDOT) as a CE-4 under Des. No. 1592433 for the I-70 ATL project on November 14, 2017 (Appendix E). The project included adding two lanes in the median of I-70 from Hazelwood Road to SR 267 to create six 12-foot travel lanes, and adding two 12-foot lanes on the outside from SR 267 east to Ronald Reagan Parkway. In addition to the added travel lanes project, various bridges (approximately 11) and culverts (approximately 6) along the project corridor would need work. Specifically, the approved CE-4 identified the replacement of the SR 39 Bridge over I-70 (Des. No. 1500145) and a reconfiguration of the ramp terminals (Des. No. 1500143) at the I-70/SR 39 interchange.

SCOPE OF WORK

Original – I-70 ATL CE-4 (Des. No. 1592433)

Project Limits. The scope under the I-70 ATL project extended on I-70 from approximately 0.8 mile west of SR 39 to 0.5 mile east of the Ronald Reagan Parkway overpass, spanning 10.8 miles through three counties, Morgan, Hendricks, and Marion.

Project Description. As part of the I-70 ATL project, the I-70/SR 39 interchange was analyzed using a standard diamond layout, with the goal of increasing capacity, safety, and limiting right-of-way (ROW) acquisition, and/or maintaining a level of service (LOS) of C or better at the ramp junctions. The ramps would remain relatively close to their existing location, with no new entrance or exit points. The SR 39 bridge was to be widened to four 12-foot lanes (two northbound and two southbound) with one two-way 12-foot left turn lane, a 10-foot multi-use path on the west side of the bridge, and a 6-foot sidewalk on the east side of the bridge.

Right-of-Way. Under the I-70 ATL project, approximately 1.0 acre of permanent ROW was to be required for the I-70/SR 39 interchange project. The required ROW was zoned commercial.

Maintenance of Traffic. The preferred maintenance of traffic (MOT) for the I-70/SR 39 interchange, under the I-70 ATL project, consisted of two stages. The first stage consisted of maintaining traffic on the two lanes of the bridge while the three-lane widening section was constructed. The second stage consisted of moving traffic to the new three-lane widened section, while the two existing lanes were reconstructed.

Scope Changes Warranting AI Document – I-70/SR 39 Interchange (Des. No. 1500143)

Project Limits. The scope of the project limits for the I-70/SR 39 interchange modification will be reduced to the limits of the I-70/SR 39 interchange (see Appendix A, Figures 1 and 2). Specifically, the project extends from 0.43 miles west to 0.47 miles east of SR 39 on I-70 and 0.31 miles north to 0.41 miles south of I-70 on SR 39. The only exception to these limits is on SR 39 south of the intersection with County Road 1000S, which further extend approximately 600 feet south.

Project Description. Since the original CE-4 was approved in November 2017, additional traffic data was obtained from a Traffic Impact Study (TIS) (A&F Engineering, 2017) prepared for a large, proposed development near the interchange that indicated much higher traffic volumes than anticipated for the SR 39 bridge and mainline I-70 at the I-70/SR 39 interchange. This substantive change in projected traffic volumes led to the investigation of additional interchange alternatives. Projected traffic volumes at the ramp junctions, mainline I-70, and SR 39 intersection (Design Year 2039) in combination with traffic volumes from the TIS were used to analyze two proposed interchange build alternatives. A Modified Standard Diamond Interchange and a Diverging Diamond Interchange (DDI). As a result of the traffic analyses, a DDI was determined to most efficiently address the need, to accommodate large traffic volumes at the I-70/SR 39 interchange, and address the purpose, to provide desirable traffic operations and accessibility both now and into the future. As part of the DDI modifications, the existing four-span bridge (SN 039-32-05293-A) carrying SR 39 over I-70 (one lane each northbound [NB] and southbound [SB] directions of SR 39) will be replaced with two separate 48” Bulb-Tee Pre-stressed Concrete two-span bridges (SNs 039-32-10120-A [SB] and 039-32-10415-A [NB]). The SR 39 NB bridge will provide two lanes and a multi-use path (Des. No. 1801428). The SR 39 SB bridge will provide two lanes (Des. No. 1500145). The NB and SB bridges flank the existing SR 39 Bridge. Preliminary project plans are included in Appendix A (A-2 to A-19).

Right-of-Way. As a result of the DDI, approximately 2.44 acres of permanent ROW and 0.48 acre of temporary ROW will be required, which is more than the ROW amounts in the I-70 ATL CE-4. The required ROW includes the following:

Land Use Impacts	Amount (Acres)	
	Permanent	Temporary
Residential	0.66	0.00
Commercial	1.21	0.13
Agricultural	0.17	0.27
Forest	0.00	0.00
Wetlands	0.00	0.00
Other	0.57	0.35
TOTAL	2.44	0.48

Maintenance of Traffic. The preferred MOT for the DDI is the use of phased construction, the use of temporary pavement, with some nighttime partial and full lane and shoulder closures. Single lane closures will be utilized on I-70 at nighttime only. Short-term full closures shall be utilized during bridge beam placement. The SR 39 Bridge will remain open to traffic during construction of the new SR 39 bridges. Access to existing truck stops and gas stations will be maintained.

Item/Resource Comparison. The change from a standard diamond layout to a DDI warranted the inclusion of this AI document. Table 1 depicts how the I-70/SR 39 interchange was discussed in

the CE-4 for the I-70 ATL project (i.e. standard diamond interchange), in contrast to the I-70/SR 39 interchange modifications project (i.e. diverging diamond interchange) in this AI.

Table 1: Project Information Comparison

Item/Resource	I-70 ATL CE-4 ¹ (Standard Diamond Interchange)	I-70/SR 39 Interchange Modifications AI (Diverging Diamond Interchange)
Project Description		
Des. Nos.	<i>Reconfiguration of Ramps:</i> 1500143 <i>SR 39 Bridge Replacement:</i> 1500145 <i>I-70 ATL:</i> 1592433	<i>I-70/SR 39 Interchange Modifications and NB Bridge:</i> 1500143 <i>SR 39 SB Bridge:</i> 1500145 <i>Multi-Use Path:</i> 1801428 <i>I-70 ATL:</i> 1592433
Cost	<i>Des. No. 1500143:</i> \$3,025,000 <i>Des. No. 1500145:</i> \$5,825,000	<i>Des. No. 1500143:</i> \$ 9,559,955.00 <i>Des. No. 1500145:</i> \$ 1,332,587.04 <i>Des. No. 1801428:</i> \$ 1,748,941.22
Interchange Work	Ramp terminal reconfigurations and replacement of existing 4-span bridge, keeping original standard diamond interchange design.	A Diverging Diamond Interchange replacing existing bridge with two separate 2-span bridges.
Lanes on Bridge	<i>Lanes:</i> Four 12-foot lanes (two NB and two SB) with one two-way 12-foot left turn-lane. <i>Shoulder:</i> 10-foot	<i>Lanes:</i> Four 12-foot lanes (two NB, two SB). <i>Shoulder:</i> 2-foot
Pedestrian/Biking Facilities	10-foot multi-use path on west side of bridge. 6-foot sidewalk on east side of bridge.	10-foot multi-use path on northbound bridge.
Soil Disturbance	Unknown for SR 39 – Likely minimal due to attempt to keep standard diamond layout.	Approximately 40 acres.
ROW Required	<i>Permanent:</i> 1.0 acre	<i>Permanent:</i> 2.44 acres <i>Temporary:</i> 0.48 acre
MOT	Consists of two stages. First stage: maintain traffic on the two lanes of the bridge while the three-lane widening section was constructed. Second stage: move traffic to the new three-lane widened section, while the two existing lanes were reconstructed.	New bridges will be built to the east and west of the existing bridge. Existing SR 39 bridge remains open to traffic during construction of the new SR 39 bridges. Phased construction. Use of temporary shoulder pavement. Some nighttime partial and full lane and shoulder closures.
Ecological Resources		
Streams, Rivers, Watercourses	No impacts anticipated.	No impacts anticipated.
Wetlands	Permanent impacts to 1.33 acres jurisdictional and 0.61 acre isolated wetlands. Due to interchange work, new bridge, and grading.	Permanent impacts to 0.79 acre of jurisdictional and 0.36 acre isolated wetlands. No temporary impacts. Due to regrading/reconfiguration of

Item/Resource	I-70 ATL CE-4 ¹ (Standard Diamond Interchange)	I-70/SR 39 Interchange Modifications AI (Diverging Diamond Interchange)
		the interchange and creation of detention areas). See supplemental review below.
Tree Removal/ Terrestrial Habitat	Tree survey for the I-70 ATL project did not include area specific to the I-70/SR39 interchange. All impacts will occur within existing ROW along the I-70 median and ditch-lines, which provide poor habitat for native species. Therefore, impacts to terrestrial habitat will be minimal.	Approximately 24 trees (22 live and 2 dead) will be removed/impacted. These trees are located in the southwest quadrant of the I-70/SR 39 interchange, near the west side of the SR 39 bridge, and at the northwest quadrant of the I-70/SR 39 interchange. See supplemental review below.
Karst	No impacts anticipated.	No impacts anticipated.
Threatened & Endangered Species	May Affect, Not Likely to Adversely Affect – AMMs Required for Indiana Bat and Northern Long-Eared Bat	See supplemental review below.
Other Resources		
Drinking Water	No impacts anticipated.	No impacts anticipated.
Floodplains	No impacts anticipated.	No impacts anticipated.
Farmland	No impacts anticipated.	No impacts anticipated.
Cultural		
Historical	No impacts anticipated.	No impacts anticipated.
Section 4(f)/6(f)		
Section 4(f)/6(f)	No impacts anticipated.	No impacts anticipated.
Air Quality		
Air Quality	No impacts anticipated.	No impacts anticipated.
Noise		
Noise	Noise analysis conducted. No abatement measures required.	The proposed bridge is similar to the initial structure discussed in the CE-4; therefore, the original noise analysis remains valid. No abatement measures are recommended for this project.
Community Impacts		
Regional, Community, & Neighborhood Factors	No impacts anticipated.	No impacts anticipated.
Indirect & Cumulative Impacts	No impacts anticipated.	No impacts anticipated.
Public Facilities & Services	Impacts from the MOT should not significantly affect public facilities and services.	Impacts from the MOT should not significantly affect public facilities and services.

Item/Resource	I-70 ATL CE-4 ¹ (Standard Diamond Interchange)	I-70/SR 39 Interchange Modifications AI (Diverging Diamond Interchange)
Environmental Justice	No impacts anticipated.	No impacts anticipated.
Relocations	No displacements anticipated.	One structure (currently zoned commercial and vacant), located north of the I-70/SR 39 interchange, on the west side of SR 39 and across from the Love's Travel Stop.
Hazardous Materials		
Hazardous Materials	<p><i>A Red Flag Investigation was approved by INDOT-ES on December 6, 2016, and identified the following for the I-70/SR 39 interchange:</i></p> <ul style="list-style-type: none"> - One (1) Leaking Underground Storage Tank (LUST), owned by the former Mike's West 70 Marathon, is located within the project limits in the northeast quadrant of the I-70/SR 39 interchange. This site is now the location of Loves Truck Stop. Per IDEM's Virtual File Cabinet (VFC), the site received a No Further Action (NFA) approval on October 31, 2013; therefore, no impact is expected. - One (1) state cleanup site is located within the project limits, at the I-70/SR 39 interchange. A review of IDEM Spills data indicates this was a spill of petroleum product on February 27, 2004, that was contained. No impact is expected. - Two wells, operated by Citizens Gas and Coke Utility, are located within the project limits in Hendricks County. Well CG-21 (IGS-ID: 126459) is located north of the westbound I-70 exit ramp to SR 39. Well CG-45 (IGS-ID: 126476) is located in the southeast quadrant of the Ronald Reagan Parkway/I-70 interchange. 	<p><i>A re-review of the INDOT Red Flag Investigation geodatabase by Kaskaskia Engineering Group, LLC (KEG), on October 18, 2018 identified the following for the I-70/SR 39 interchange:</i></p> <ul style="list-style-type: none"> - One (1) Leaking Underground Storage Tank (LUST), owned by the former Mike's West 70 Marathon, is located within the project limits in the northeast quadrant of the I-70/SR 39 interchange. This site is now the location of Loves Truck Stop. Per IDEM's Virtual File Cabinet (VFC), the site received a No Further Action (NFA) approval on October 31, 2013; therefore, no impact is expected. - One (1) state cleanup site is located within the project limits, at the I-70/SR 39 interchange. A review of IDEM Spills data indicates this was a spill of petroleum product on February 27, 2004, that was contained. No impact is expected. - One well, operated by Citizens Gas and Coke Utility, is located within the project limits in Hendricks County. Well CG-21 (IGS-ID: 126459) is located north of the westbound I-70 exit ramp to SR 39. Coordination will occur with Indiana Department of Natural Resources (IDNR) Oil and Gas and Reclamation during project development and any impacts will be appropriately mitigated.

Item/Resource	I-70 ATL CE-4 ¹ (Standard Diamond Interchange)	I-70/SR 39 Interchange Modifications AI (Diverging Diamond Interchange)
Permits		
Permits	USACE Section 404 IDEM Section 401 IDNR CIF	USACE Section 404 RGP IDEM Section 401 IP

¹ Information pertinent to the I-70/SR 39 interchange has been extracted from the CE-4 for the purposes of this table, since the CE-4 discussed items as they related to the I-70 ATL project corridor.

SUPPLEMENTAL RESOURCE REVIEW

The aforementioned scope changes for the I-70/SR 39 interchange modifications in this AI, resulted in a supplemental review of the following resources: wetlands, terrestrial habitat, threatened and endangered species, and permits. Additionally, early coordination was re-initiated with the Indiana Department of Natural Resources (IDNR) and the U.S. Fish and Wildlife Service (USFWS) (See Appendix B). The following details these supplemental reviews.

Water Resources (Waters of the US Report Addendum)

The original Waters of the US Report (WOUS), for the I-70 ATL project, was approved on March 15, 2017 by INDOT-Ecology and Waterway Permitting Office (EWPO). Specific to the I-70/SR 39 interchange, the original WOUS identified the presence of three (3) jurisdictional wetlands (approved USACE Jurisdictional Determination received October 11, 2018), located in the northwest, southeast, and southwest infields of the interchange. Additionally, one (1) non-jurisdictional isolated wetland was found in the northeast quadrant. Due to the interchange work associated with the single diamond layout, total permanent wetland impacts were estimated at 1.94 acres (1.33 acres of jurisdictional wetlands and 0.61 acre of isolated wetlands).

Due to a change in the project limits, a site visit was conducted on October 9, 2018 by qualified personnel to survey and delineate wetlands within the proposed revised project limits of the I-70/SR 39 interchange modifications project for a (WOUS) Addendum (Appendix C-2 to C-31). The WOUS Addendum was approved by INDOT-EWPO on October 29, 2018 (Appendix C-1). The WOUS Addendum, in addition to the aforementioned water resources (identified in the original WOUS), noted the presence of one (1) stream that is likely a jurisdictional Waters of the US in the north side of investigated area. Due to the change in project scope to the DDI, a total of 0.79 acre of jurisdictional wetlands and 0.36 acre of isolated wetlands are anticipated to be permanently impacted. No temporary impacts are anticipated. Impacts will be due to regrading/reconfiguration of the interchange and creation of detention areas. No impacts are expected to streams.

All impacts will be permitted and mitigated for, as necessary, before the project is allowed to go to construction. Every effort shall be taken to avoid and minimize impacts to Waters of the U.S. and jurisdictional wetlands. The final determination of jurisdictional waters are ultimately made by the USACE and IDEM. Coordination with U.S. Army Corps of Engineers (USACE), Indiana EPA (IEPA), and INDOT Environmental Services Division is ongoing regarding permitting and mitigation for impacts.

Tree Removal/Terrestrial Habitat

The new scope of this project will require tree removal. It is estimated that approximately 24 total trees (22 live and two dead) will be removed in the southwest quadrant of the I-70/SR 39 interchange, near the SR 39 bridge, and at the northwest quadrant of the I-70/SR 39 interchange. Tree removal will follow all recommendations from the USFWS and all AMMs for the Indiana bat and northern long-eared bat by not removing trees from April 1 through September 30. The commitments documented in the approved I-70 ATL CE-4 are still valid.

Threatened and Endangered Species

All of Indiana is within range of the federally endangered Indiana bat (*Myotis sodalis*) and federally threatened NLEB (*Myotis septentrionalis*). Per coordination with INDOT on October 11, 2018, a review of the USFWS database did not indicate the presence of endangered bat species within 0.5 mile of the project area. Additional investigation to confirm the presence or absence of bats under the bridge was conducted during the site visit on October 9, 2018 by KEG. No evidence of bats was observed under the bridge (see bridge inspection sheet in Appendix B).

The existence of bats has been documented on a building that is required to be demolished at the northwest quadrant of the SR 39 interchange with I-70 (the old schoolhouse at 2227 E CR 1000 S, Clayton, Indiana). Bats were observed roosting under the eaves and gable of the building on October 24, 2018 during an on-site inspection by KEG (see structure inspection sheet in Appendix B). During a second inspection by Lochmueller Group on November 8, 2018, no bats were seen but staining was observed under the eaves and gables. Additionally, on the small back porch (west side of building) a large amount of bat guano was found within the cracks of the decking board. Although the guano was degraded, a composite sample was collected and shipped to the Northern Arizona University (NAU) School of Forestry and Center for Microbial Genetics and Genomics for analysis in order to provide, if possible, the species of bat that has been roosting at the structure. Results are pending at the time this document was written.

An early coordination letter was sent to USFWS on November 29, 2018. An e-mail response was received on that same date stating that USFWS will wait for the results of DNA sampling before providing comments.

Once the partial government shutdown is complete, coordination will resume with USFWS to discuss the results of species testing and any additional commitments they may have for Section 7. Should consultation with USFWS result in additional recommendations or changes in finding, the environmental document will need to be reevaluated. Coordination with INDOT ESD should occur.

Since the species is unknown at this time, it will be assumed endangered and threatened species are present and the more restrictive winter hibernation time period shall be used. The demolition of the building shall occur during the winter hibernation period, between November 16th 2019 and March 14th of 2020. Demolition of the building during this period would result in a "not likely to adversely affect" for the listed species. The USFWS bat Avoidance and Minimization Measures (AMMs) listed in the original CE-4 document (Des. 1592433) will be required. Additional AMMs are required for demolition of the structure. These are listed in the Project Commitments Section.

Interstate Access

The Interstate Access Document (IAD) (Appendix F) contains the analysis to support the Indiana Department of Transportation (INDOT) approval request for the modification of the existing I-70 access at SR 39. INDOT received approval for the project from FHWA on July 20, 2017. The IAD follows the current guidance within the Indiana Interstate Access Request Procedures. Per this guidance, the limited, proposed modifications at this location allow for a minor IAD to be completed. The State of Indiana Interstate Access Request Procedures (May 2018) requires six of the eight Federal Highway Administration (FHWA) policy points identified in the U.S. Federal Register be addressed in the NEPA document. The remaining two policy points are discussed in the IAD. This AI will include concise answers to the six policy points required in the NEPA document, as they were not addressed in the initial submittal.

NEPA Document 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)).”

Access is already provided to SR 39 from I-70 via an interchange. The existing bridge is in poor condition, with advanced deterioration, requiring a full replacement. Given the structural status of the bridge, and the fact that significant development has and will continue in the area surrounding the interchange, a change of interstate access at this location is feasible and reasonable. Traffic Data is available in the Interstate Access Document.

NEPA Document 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)).”

This section of the interstate is located in a relatively rural area, and therefore does not see benefits from transportation system management features. The Interstate 70 mainline is already planned to undergo a lane addition project, bringing the total number of lanes to three in each direction. A standard diamond interchange can be easily expanded in the future compared to the DDI to accommodate the projected increase in traffic volumes, however a DDI provides better results in operations, safety, construction cost, and constructability compared to a standard diamond interchange. The DDI efficiently handles large volumes of left-turning traffic traveling to and from the Interstate System. The DDI crosses traffic to the opposite side of the roadway at either end of the bridge, at the same location as the ramp intersections. This allows free-flow left-turn movements to and from the ramps, which are typically the most dangerous and inefficient movements at a busy interchange.

NEPA Document Policy Point 3

“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 450 and transportation conformity requirements of 40 CFR 51 and 93.”

Des. Nos 1500143 and 1500145 are listed in the Indiana STIP. Des. Nos 1500143, 1500145, and 1801428 are included in the Indianapolis Metropolitan Planning Organization TIP. The project will be in compliance with the 2017 INDOT Interstate Highways Congestion Policy.

NEPA Document Policy Point 4

“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).”

No other intersections exist along SR 39 within half a mile of the interchange. The adjacent interchanges along I-70 are more than 7 miles from the SR 39 interchange. The area surrounding I-70 is rural in this area, and therefore will not likely require the construction of multiple interchanges additions in the near future.

NEPA Document Policy Point 5

“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)).”

The Traffic Impact Study for planned future development to the north or the interstate was used throughout the development of the IAR process. The interchange design used forecasted traffic data that will accommodate the full development buildout as a “worst case”. The design incorporated the “worst case” traffic scenario, to ensure traffic did not spill back onto the interstate from the development.

NEPA Document Policy Point 6

“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).”

In the original CE-4, a reconstruction of the existing SR 39 over I-70 bridge was considered. This kept the existing diamond interchange, while adding lanes. This AI addresses the change of design to a diverging diamond interchange. Impacts between the two design types are similar, and any changes in impacts are discussed in this AI.

Public Involvement

A public comment was received from Mr. Ted Everett on August 17th, 2018 via telephone. Ted is the owner of Ted Everett Farm Equipment near the corner of SR 39 and Keller Hill Road, just south of the SR 39 Interchange. Everett Farm Equipment has oversized deliveries to and from

the business on a daily basis, mostly coming from I-70. He is limited on alternative routes he can use for equipment delivery. Mr. Everett indicated they would prefer a 16-foot clear width be provided through the construction zone, if possible, but that a 14-foot minimum clear width may be sufficient. The majority of their equipment can accommodate a 14-foot width but they do have some combines that are 16 feet wide. He also mentioned they hold a farm show in the fall with over 3,000 people in attendance and over 300 semis of equipment delivered.

The project plans for MOT will meet a minimum clear width of 14 feet.

The proposed project will meet the minimum requirements described in the current Indiana Department of Transportation (INDOT) Public Involvement Manual 2012 which would require the project sponsor to offer the public an opportunity to submit comments and/or request a public hearing. Therefore, a legal notice will appear in a local publication contingent upon the release of this document for public involvement. This document will be revised after the public involvement requirements are fulfilled. To date, this project has not generated substantial public controversy concerning community or natural resource impacts.

Project Commitments

All previous project commitments for the I-70 ATL (Des. 1592433) project will be implemented. The following additional commitments will be implemented with the I-70/SR 39 Interchange Modifications project:

- The existence of bats has been documented on a structure that is required to be demolished at the NW quadrant of the interchange (the old schoolhouse at 2227 E CR 1000 S, Clayton, Indiana). Since the species is unknown at this time, it will be assumed endangered and threatened species are present and the more restrictive winter hibernation time period shall be used. The demolition of the structure shall occur during the winter hibernation period, between November 16th 2019 and March 14th of 2020.
- Once the partial government shutdown is complete, coordination will resume with USFWS to discuss the results of species testing and any additional commitments they may have for Section 7. Should consultation with USFWS result in additional recommendations or changes in finding, the environmental document will need to be reevaluated. Coordination with INDOT ESD should occur.
- Structure AMM2: If structure maintenance, repair, and/or alteration will be performed during the winter hibernation period (defined as November 16th 2019 and March 14th of 2020), determine if work will occur in an area with hibernating bats. If hibernating bats or signs of frequent bat activity are observed, Transportation Agencies and State DOTs will conduct maintenance activity or similar structure alteration in a manner that will not disturb bats using the structure.
- Structure AMM4: If bat activity or signs of frequent bat activity is observed, Transportation Agencies and State DOTs will not remove the structure. Note: If there are concerns about human health/safety/property, coordinate with a nuisance wildlife control officer and the local USFWS Field Office.

CONCLUSION

The minor changes to the scope of the project are not anticipated to result in significant changes to the impacts on the environment, outside of those previously documented in the November 2017 approved CE-4.

By way of this AI, we (KEG) have documented our analysis of the project changes, environmental impacts, and associated coordination with pertinent agencies and offices. At this time, all environmental concerns regarding the above-stated changes to the project have been addressed, and no issues remain outstanding. Therefore, we recommend the original CE-4 document be amended to incorporate this AI. Unless specifically discussed in this document, the discussions and analysis of the environmental impacts in the approved CE-4 remain valid.

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APPENDIX A

Graphics

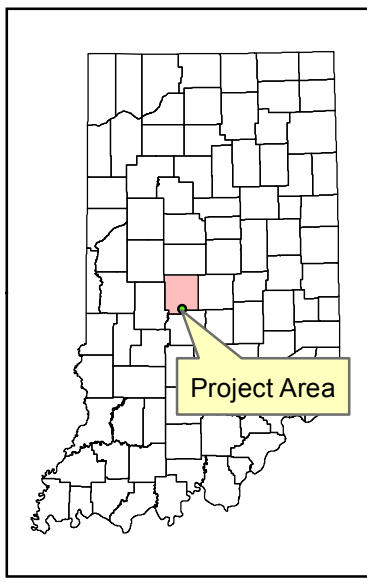
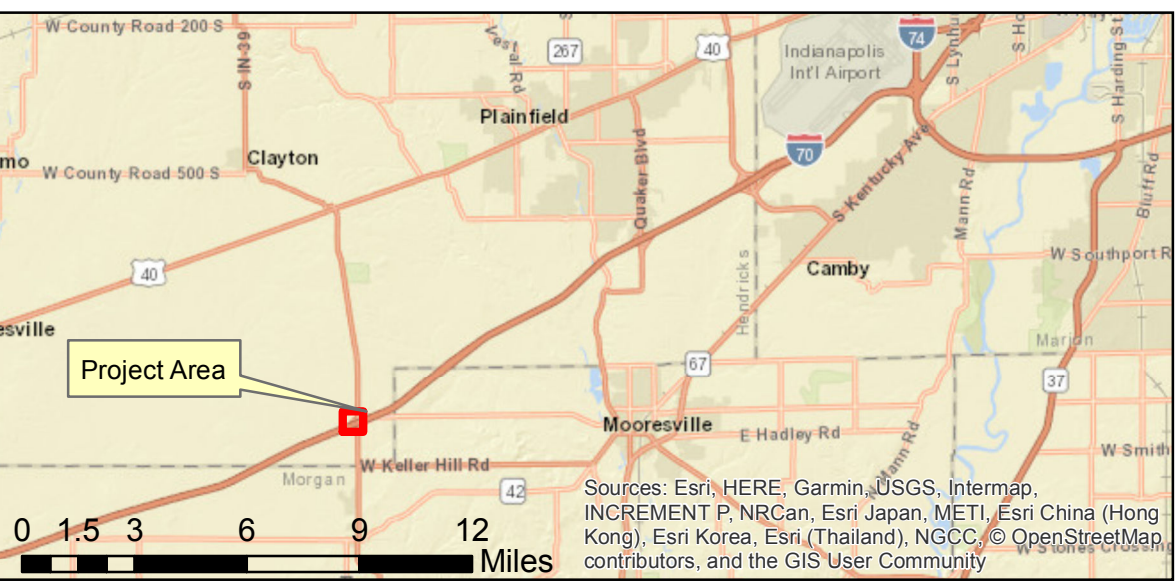
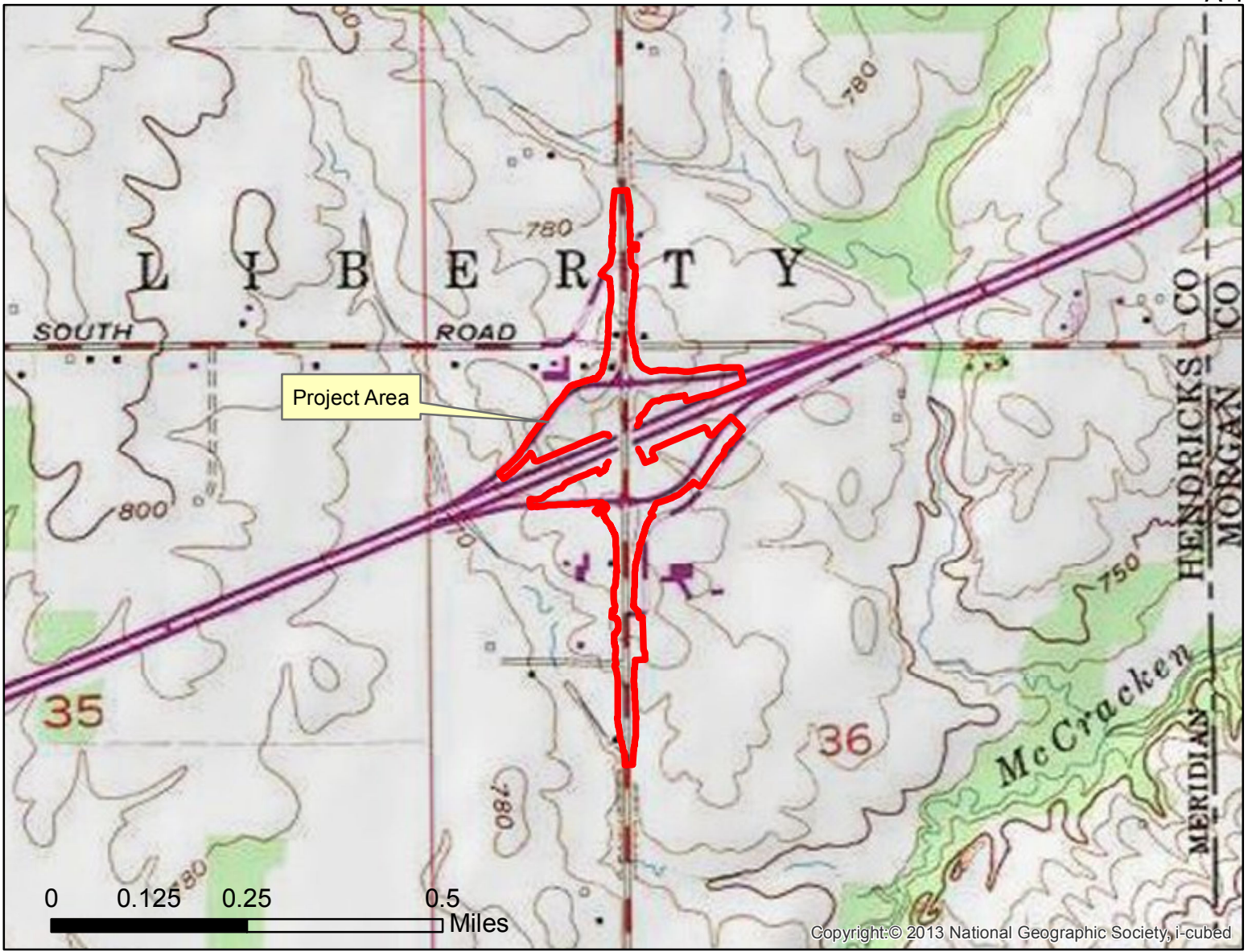
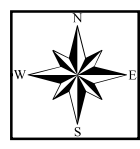
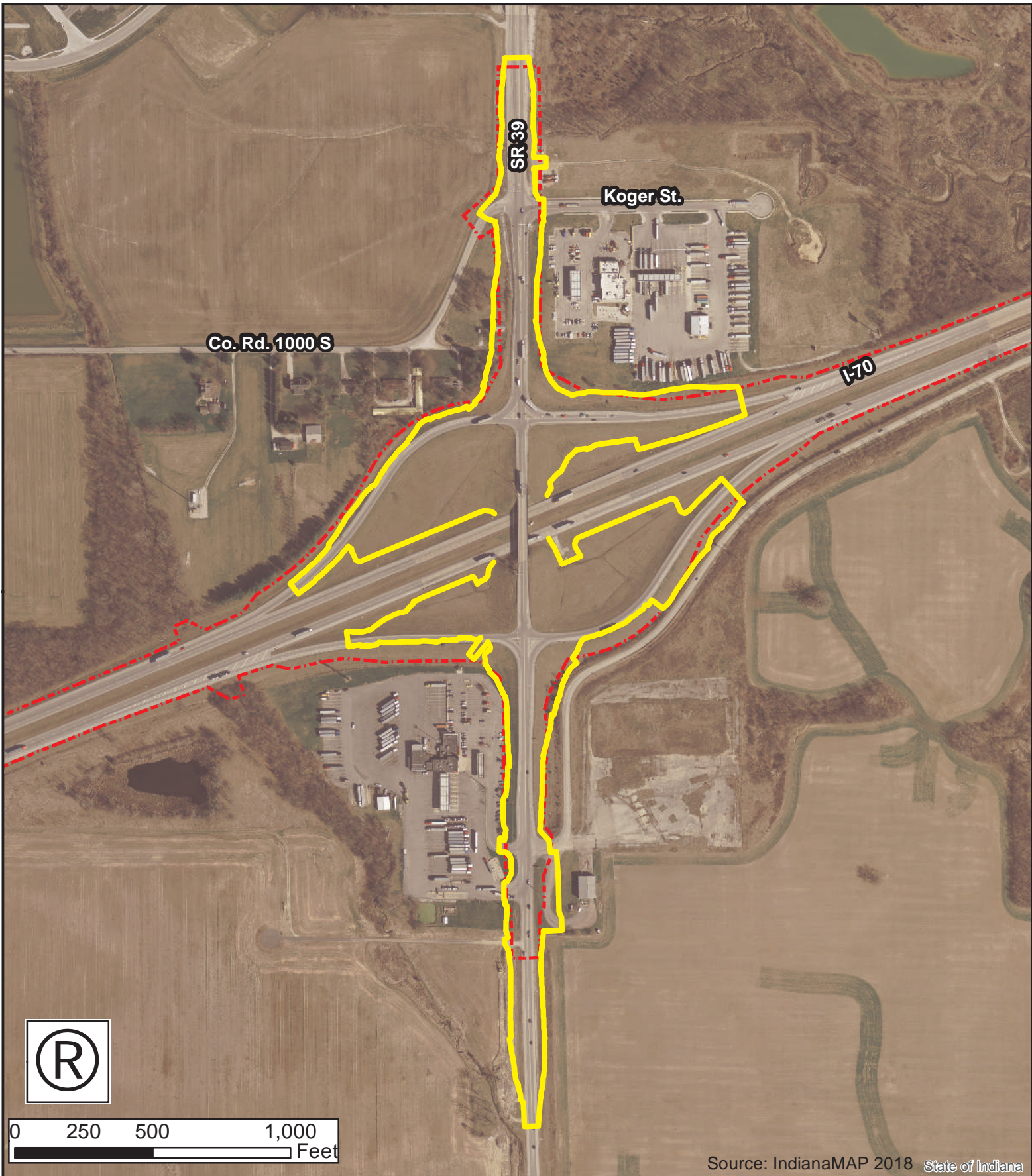


Figure 1 – Project Location Map
SR 39 at I-70 Interchange
Des. No. 1500143
Hendricks County, Indiana





Source: IndianaMAP 2018 State of Indiana

Figure 2
Construction Limits
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

- - - Original Construction Limits (Des. 1592433)
- New Construction Limits (Des. 1500143)

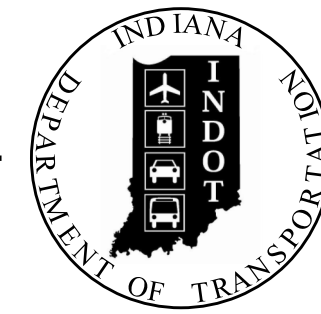


PROJECT	DESIGNATION
1500143	1500145 & 1801428
CONTRACT	BRIDGE FILE
R-41265	039-32-10120-A & 039-32-10415-A

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN AND SKEW	OVER	STATION
039-32-10120-A 039-32-10415-A	48" Bulb-Tee Prestressed Concrete Beam	2 Spans: 97'-0" Skew: 21°42'45" Lt.	Interstate 70	Sta. 49+97.25 Line "A"

KIN PROJECT INFORMATION	
DESIGNATION	PROJECT DESCRIPTION
1500143	I-70 at SR 39, Interchange
1500145	SR 39 SB over I-70
1801428	SR 39 NB over I-70

INDIANA DEPARTMENT OF TRANSPORTATION



BRIDGE PLANS

FOR SPANS OVER 20 FEET
STATE ROUTE 39

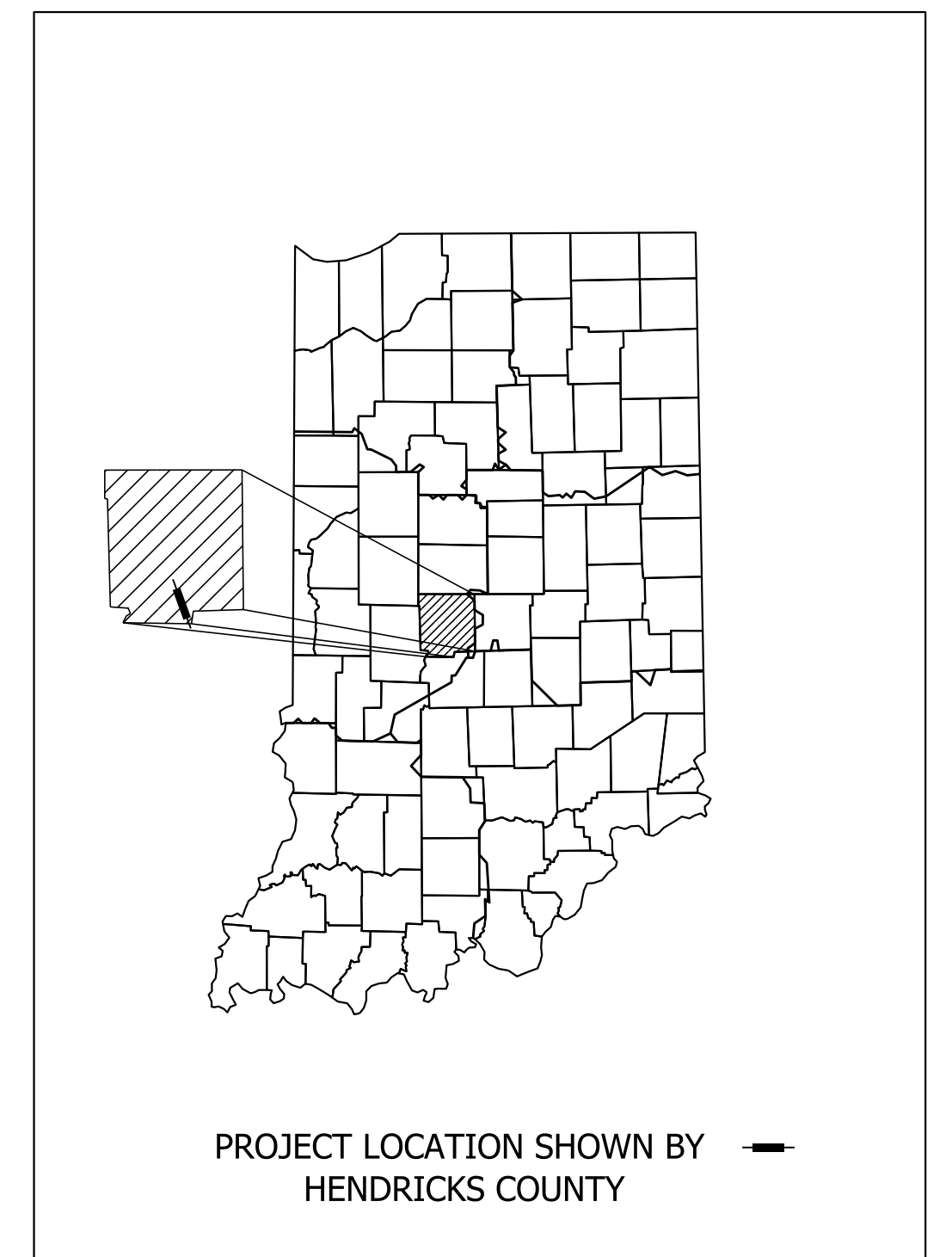
OVER INTERSTATE 70 RP 55+0.062

PROJECT NO. 1500143 P.E.
1500143 CONST.

Interchange Modification, I-70,
from 0.43 miles W of SR 39 to 0.47 miles E of SR 39
Section 25 & 36, T-14-N, R-1-W, Liberty Township, Hendricks County, Indiana.

TRAFFIC DATA	I-70	SR 39
A.A.D.T. (2019)	47,171 V.P.D.	16,344 V.P.D.
A.A.D.T. (2039)	53,806 V.P.D.	18,338 V.P.D.
D.H.V. (2039)	4,628 V.P.H.	1,643 V.P.H.
DIRECTIONAL DISTRIBUTION	51 % / 49%	50 % / 50%
TRUCKS	31.8 % A.A.D.T. 22.1 % D.H.V.	25.1 % A.A.D.T. 15.3 % D.H.V.

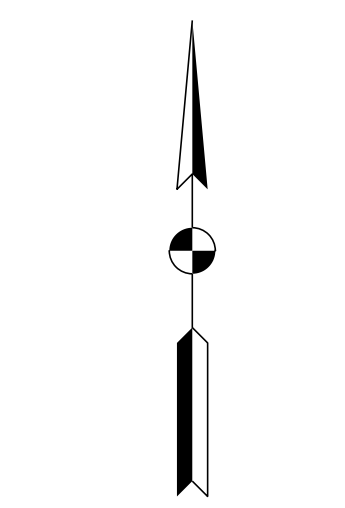
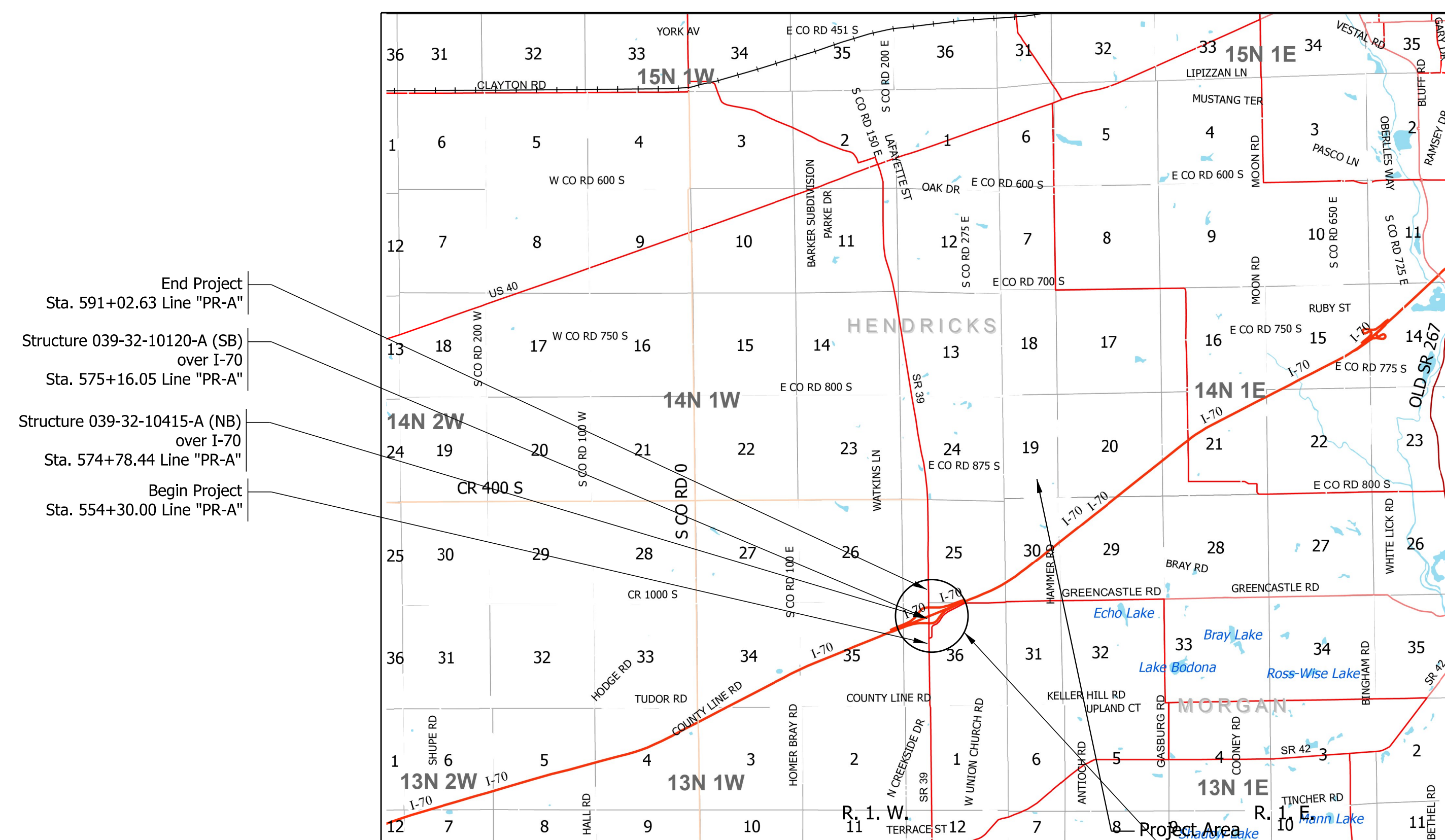
DESIGN DATA		
DESIGN SPEED	70 M.P.H.	45 M.P.H.
PROJECT DESIGN CRITERIA	RECONSTRUCTION 4R (FREEWAY)	RECONSTRUCTION (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION	INTERSTATE	STATE COLLECTOR
RURAL/URBAN	URBAN (SUBURBAN)	URBAN (SUBURBAN)
TERRAIN	LEVEL	LEVEL
ACCESS CONTROL	FULL	FULL



LATITUDE: 39°01'29.57" N LONGITUDE: 85°53'13.86" W

BRIDGE LENGTH: 0.048 MI.
ROADWAY LENGTH: 0.648 MI.
TOTAL LENGTH: 0.696 MI.
MAX. GRADE: 2.75 %

HUC: 05120203080010



SCALE: 1" = 5,000'

STAGE 1 PLANS
JUNE 1, 2018

LOCATION MAP

INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 2018
TO BE USED WITH THESE PLANS.

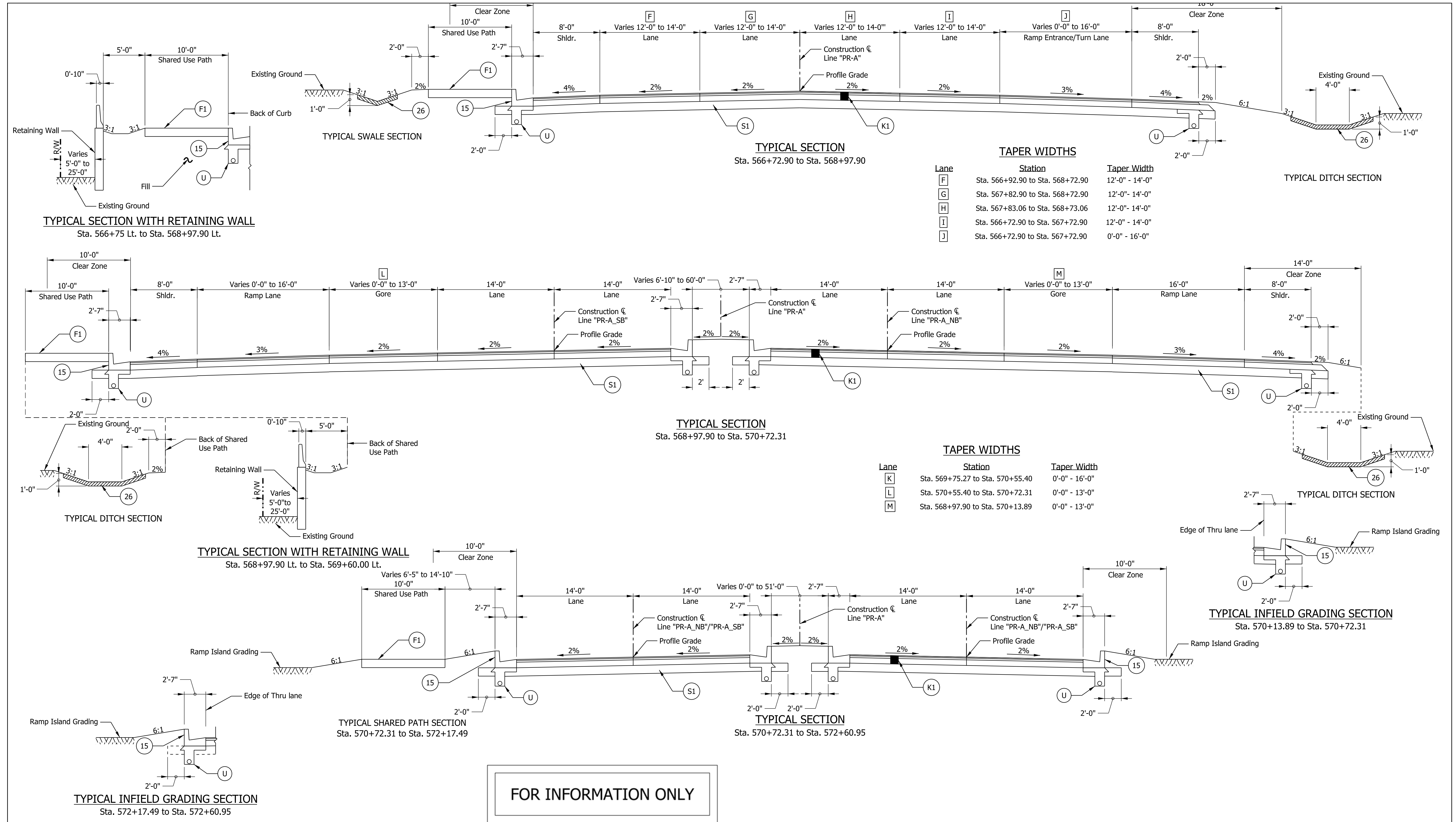
wsp WSP USA Inc.
115 W. Washington Street
Suite 1270S
Indianapolis, IN 46204
TEL: 317-972-1706

PLANS PREPARED BY:	WSP USA Inc.	(317) 972-1706 PHONE NUMBER
CERTIFIED BY:		DATE
APPROVED FOR LETTING:	INDIANA DEPARTMENT OF TRANSPORTATION	DATE

BRIDGE FILE	
039-32-10120-A & 039-32-10415-A	
DESIGNATION	
1500145 & 1801428	
SURVEY BOOK	SHEETS
-	1 of 18
CONTRACT	PROJECT
R-41265	1500143

PLOT: 6/1/2018 3:37 PM

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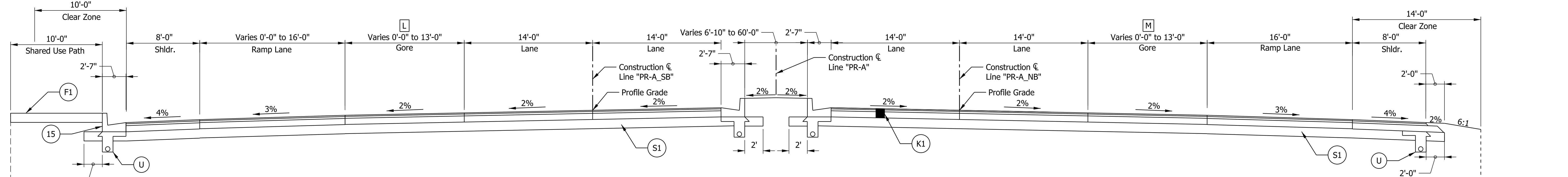
TYPICAL SECTION WITH RETAINING WALL
Sta. 566+75 Lt. to Sta. 568+97.90 Lt.

TYPICAL SECTION
Sta. 566+72.90 to Sta. 568+97.90

TAPER WIDTHS

Lane	Station	Taper Width
F	Sta. 566+92.90 to Sta. 568+72.90	12'-0" - 14'-0"
G	Sta. 567+82.90 to Sta. 568+72.90	12'-0" - 14'-0"
H	Sta. 567+83.06 to Sta. 568+73.06	12'-0" - 14'-0"
I	Sta. 566+72.90 to Sta. 567+72.90	12'-0" - 14'-0"
J	Sta. 566+72.90 to Sta. 567+72.90	0'-0" - 16'-0"

TYPICAL DITCH SECTION

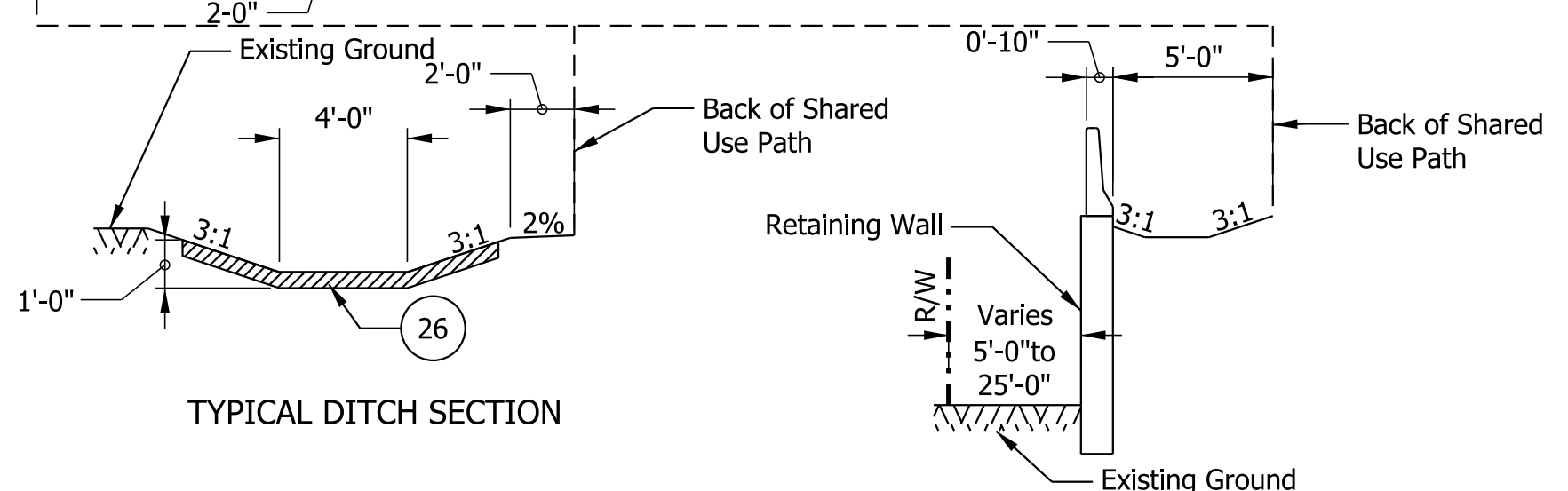


TYPICAL SECTION
Sta. 568+97.90 to Sta. 570+72.31

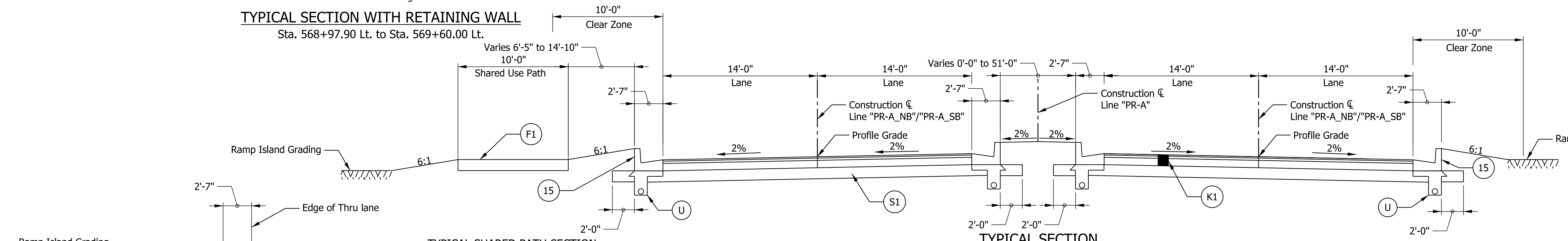
TAPER WIDTHS

Lane	Station	Taper Width
K	Sta. 569+75.27 to Sta. 570+55.40	0'-0" - 16'-0"
L	Sta. 570+55.40 to Sta. 570+72.31	0'-0" - 13'-0"
M	Sta. 568+97.90 to Sta. 570+13.89	0'-0" - 13'-0"

TYPICAL DITCH SECTION



TYPICAL SECTION WITH RETAINING WALL
Sta. 568+97.90 Lt. to Sta. 569+60.00 Lt.



TYPICAL SECTION
Sta. 570+72.31 to Sta. 572+60.95

TYPICAL SHARED PATH SECTION
Sta. 570+72.31 to Sta. 572+17.49

TYPICAL INFIELD GRADING SECTION
Sta. 570+13.89 to Sta. 570+72.31

TYPICAL INFIELD GRADING SECTION
Sta. 572+17.49 to Sta. 572+60.95

FOR INFORMATION ONLY

Note: Pavement Design assumed at this stage.
Final design to be provided by INDOT Pavement.

Plot: 6/11/2018 3:48 PM

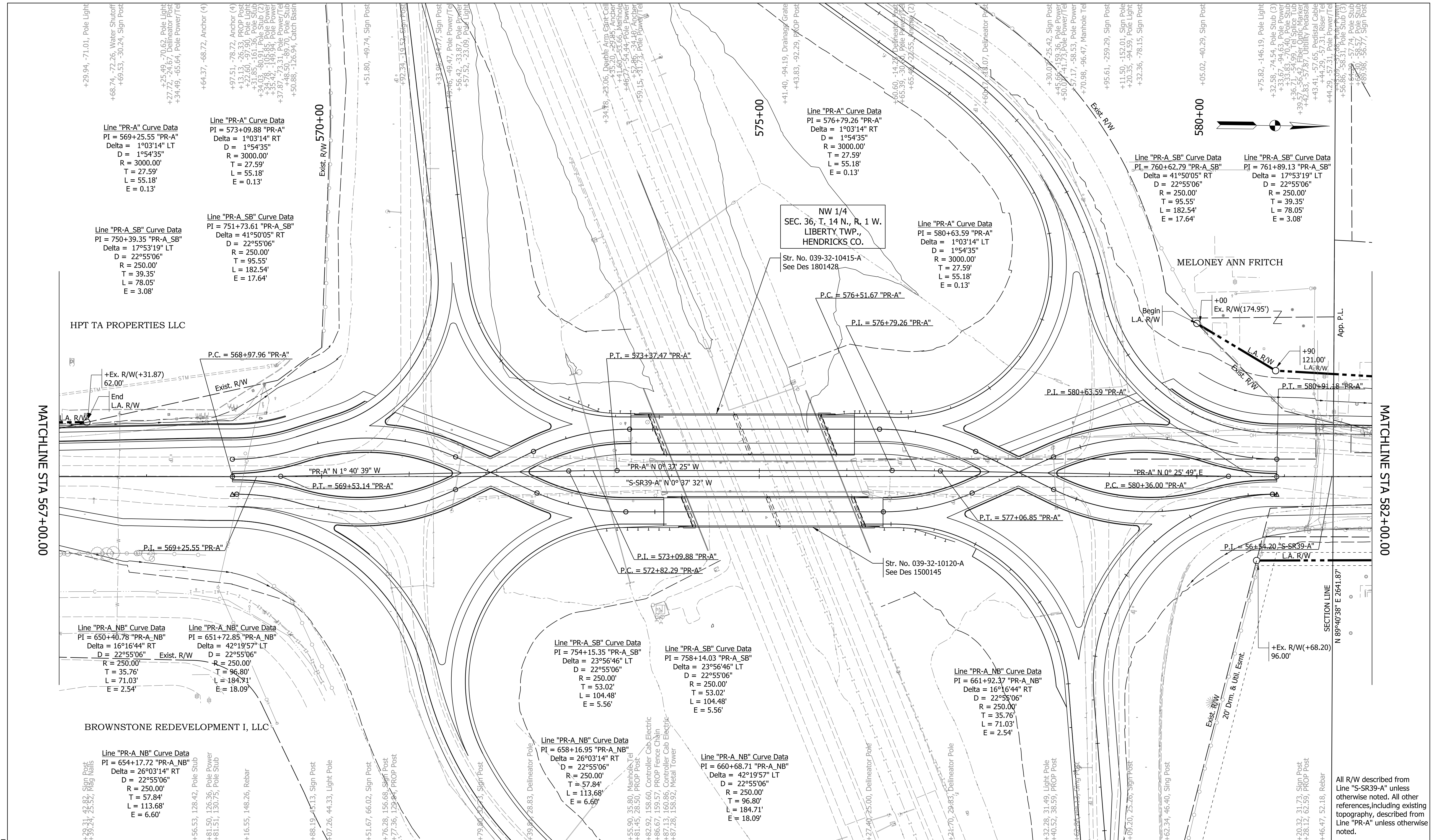
LEGEND

(S1) Subgrade Treatment, Type IC	(26) Sodding	(K1) Full Depth HMA Composed of: 165 lb/sy QC/QA-HMA, 4, 76, Surface, 9.5 mm 275 lb/sy QC/QA-HMA, 4, 70, Intermediate, 19.0 mm 880 lb/sy QC/QA-HMA, 4, 64, Base, 25.0 mm
(U) 6-in. Underdrain Composed of Pipe, Type 4, Circular, 6 in. Aggregate for Underdrains Geotextile for Underdrains	(15) Concrete Curb and Gutter	(F1) HMA for Sidewalk
	(C) Pavement Resurfacing	

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: KSD	DRAWN: KSD	
CHECKED: RPH	CHECKED: RPH	

**TYPICAL CROSS SECTIONS
SR 39 LINE "PR-A"**

HORIZONTAL SCALE	BRIDGE FILE
3/16" = 1'	039-32-10120-A & 039-32-10415-A
VERTICAL SCALE	DESIGNATION
3/16" = 1'	1500145 & 1801428
SURVEY BOOK	SHEETS
	3 of 18
CONTRACT	PROJECT
R-41265	1500143



MATCHLINE STA 567+00.00

MATCHLINE STA 582+00.00

LEGEND

Guardrail

FOR INFORMATION ONLY

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: KSD	DRAWN: KSD	
CHECKED: RPH	CHECKED: RPH	

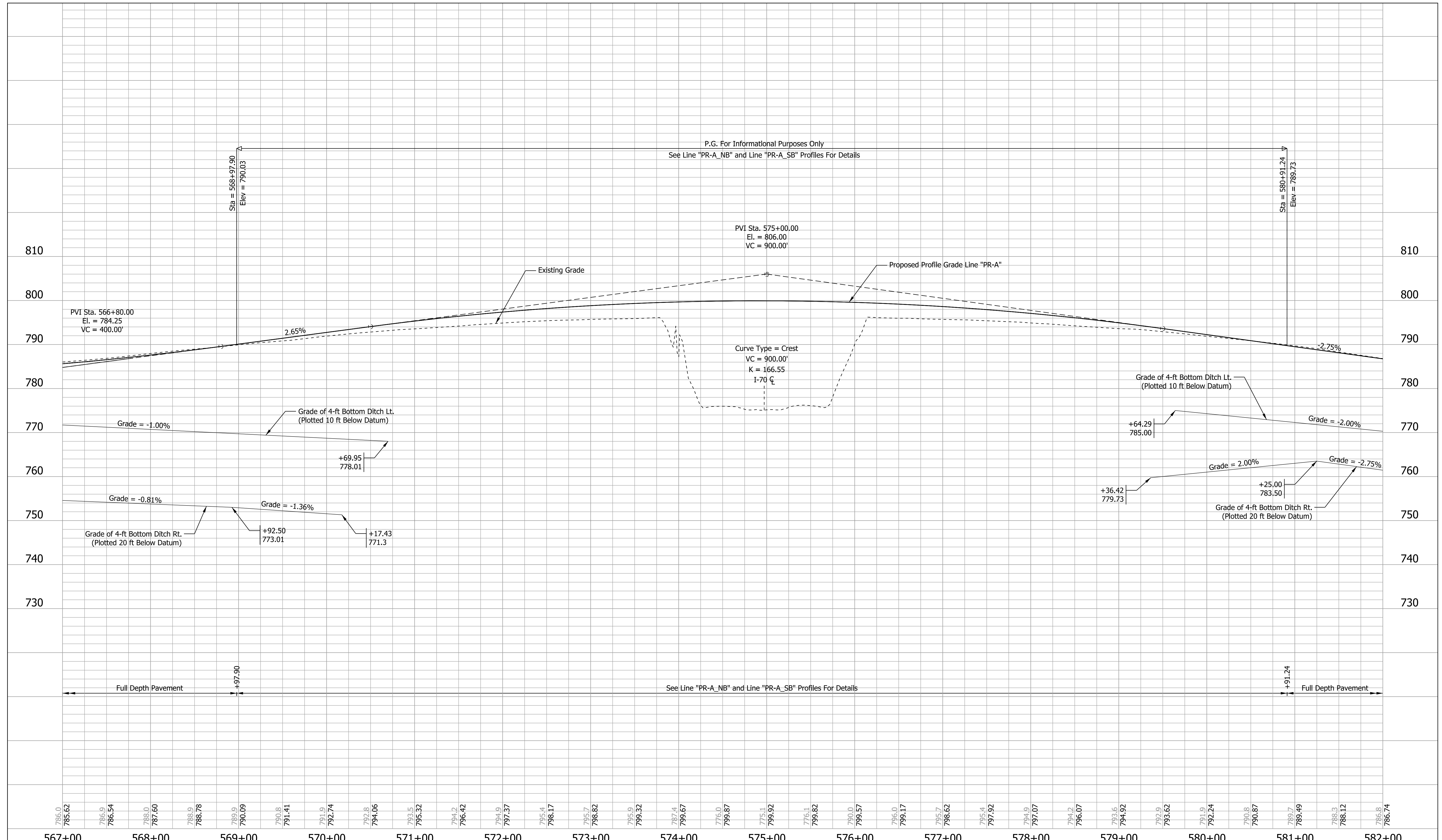
INDIANA DEPARTMENT OF TRANSPORTATION

SR 39 LINE "PR-A" - PLAN STA. 567+00 TO 582+00

HORIZONTAL SCALE	BRIDGE FILE
1" = 50'	039-32-10120-A & 039-32-10415-A
VERTICAL SCALE	DESIGNATION
1" = 50'	1500145 & 1801428
SURVEY BOOK	SHEETS
R-41265	4 of 18
CONTRACT	PROJECT
R-41265	1500143

Plot: 6/1/2018 3:38 PM

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786.0 785.62 786.54 788.0 787.60 788.9 788.78 789.9 790.09 790.8 791.41 791.9 792.74 792.8 794.06 793.5 795.32 794.2 796.42 794.9 797.37 795.4 798.17 795.7 798.82 795.9 799.32 797.4 799.67 776.0 799.87 775.1 799.92 776.1 799.82 790.0 799.57 796.0 799.17 795.7 798.62 795.4 797.92 794.9 797.07 794.2 796.07 793.6 794.92 792.9 793.62 791.9 792.24 790.8 790.87 790.7 789.49 788.3 788.12 786.8 786.74

567+00 568+00 569+00 570+00 571+00 572+00 573+00 574+00 575+00 576+00 577+00 578+00 579+00 580+00 581+00 582+00

FOR INFORMATION ONLY

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: KSD _____	DRAWN: KSD _____	
CHECKED: RPH _____	CHECKED: RPH _____	

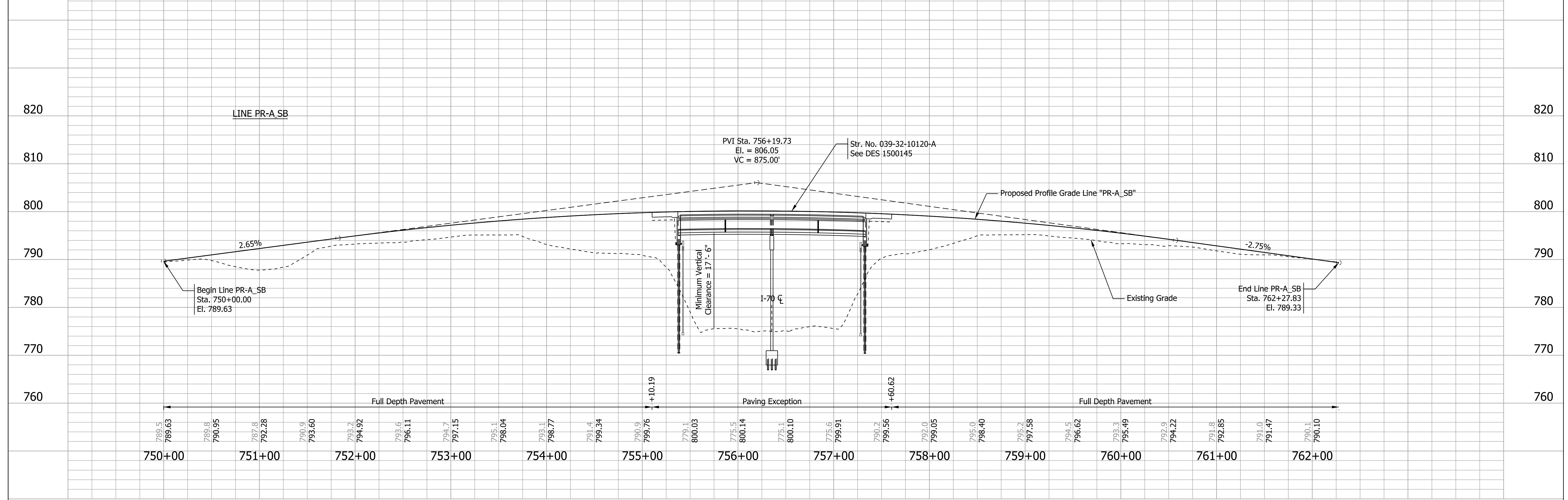
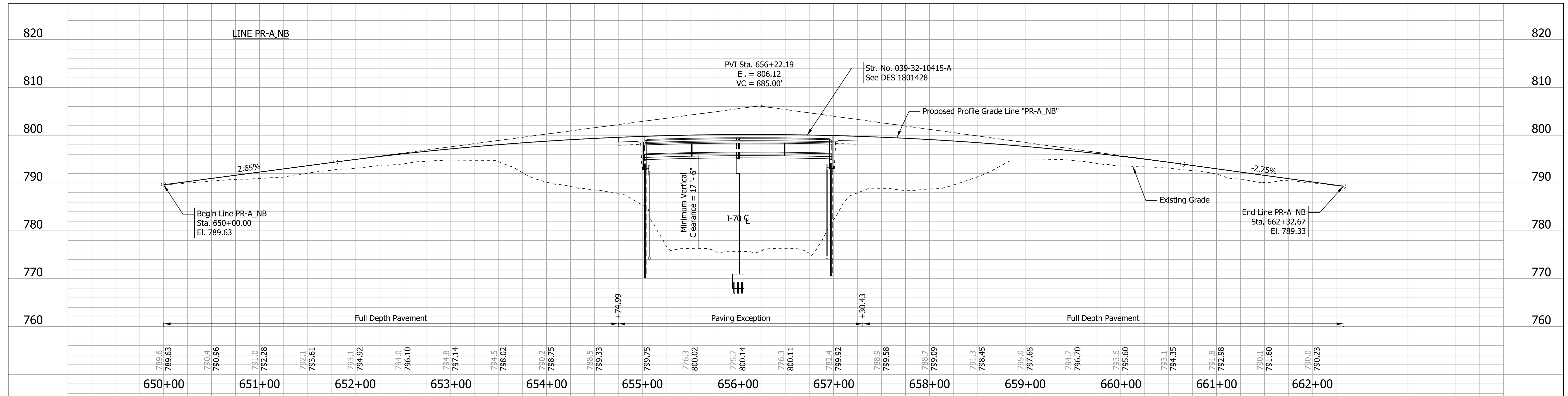
INDIANA
DEPARTMENT OF TRANSPORTATION

PROFILE
SR 39 LINE "PR-A"

HORIZONTAL SCALE 1" = 50'	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
VERTICAL SCALE 1" = 50'	DESIGNATION 1500145 & 1801428
SURVEY BOOK	SHEETS 5 of 18
CONTRACT R-41265	PROJECT 1500143

Plot: 6/1/2018 3:38 PM

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Plot: 6/1/2018 3:38 PM

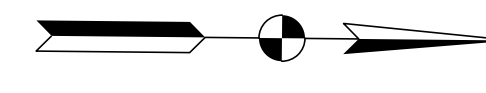
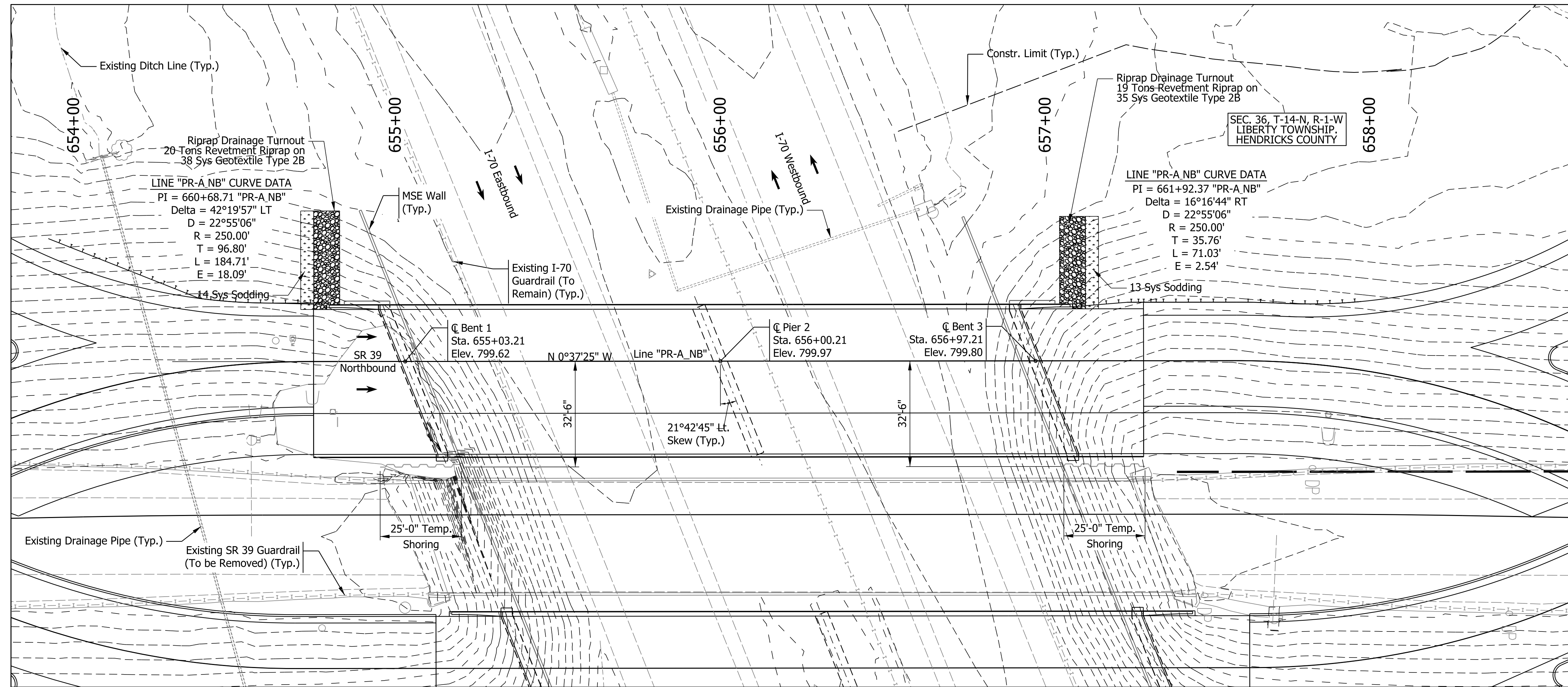
FOR INFORMATION ONLY

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: KSD	DRAWN: KSD	
CHECKED: RPH	CHECKED: RPH	

INDIANA
DEPARTMENT OF TRANSPORTATION

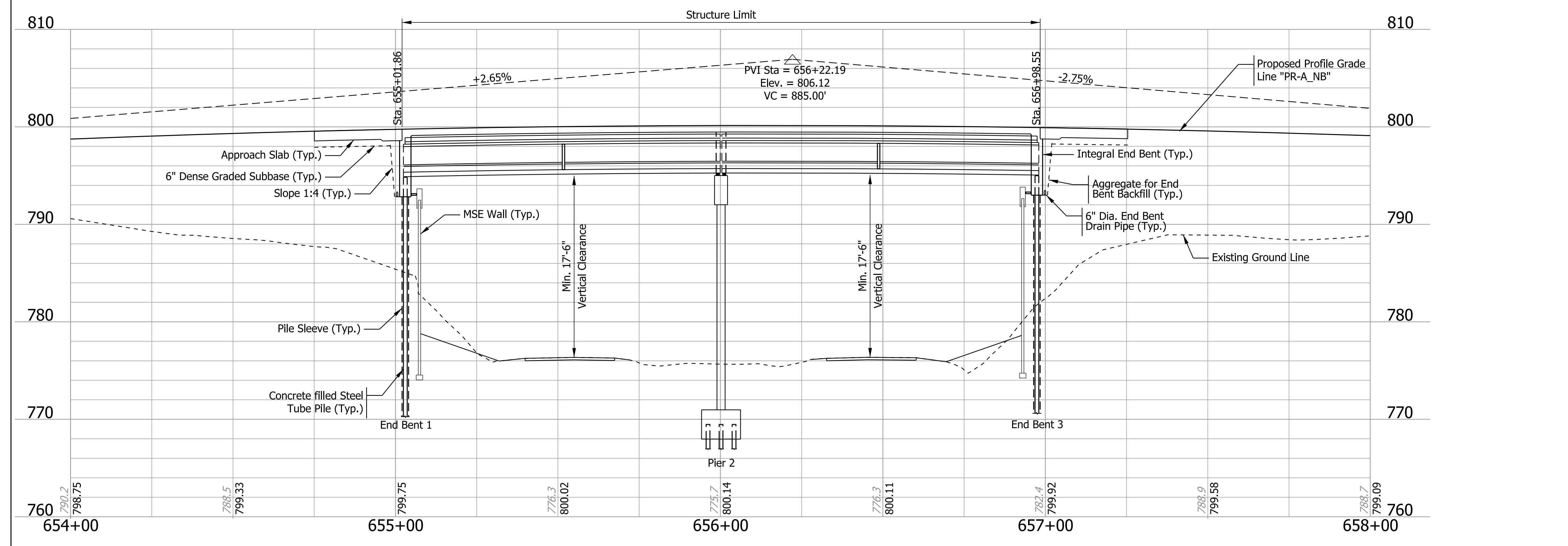
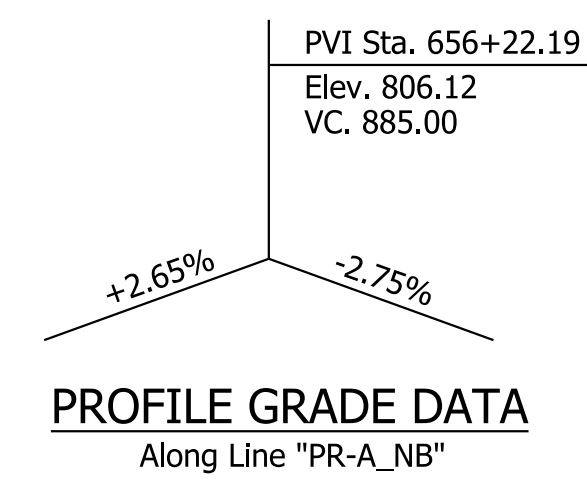
PROFILES
SR 39 LINE "PR-A_NB" & "PR-A_SB"

HORIZONTAL SCALE 1" = 50'	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
VERTICAL SCALE 1" = 50'	DESIGNATION 1500145 & 1801428
SURVEY BOOK	SHEETS
	6 of 18
CONTRACT R-41265	PROJECT 1500143



EXISTING STRUCTURE

The existing SR 39 structure over I-70 is a 4-Span multi beam (or) girder bridge built in ??? with 38'-0", 69'-9", 69'-9", & 38'-0" spans and 30'-0" clear roadway, reinforced concrete deck. Plans are on file with the Bridge Department of the Indiana Department of Transportation as File No. 039-32-05393A. Present structure is to be removed.



NOTE

- R/W not visible in plan view. Bridge falls within R/W limits.

PRESTRESSED CONCRETE BULB-TEE BEAM BRIDGE
2 SPANS @ 97'-0"
32'-0" CLEAR ROADWAY
20°42'45" SKEW LT.
SR 39 OVER I-70
HENDRICKS COUNTY

Plot: 6/1/2018 3:38 PM

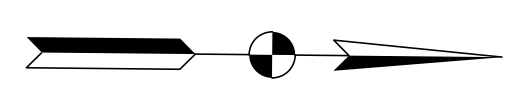
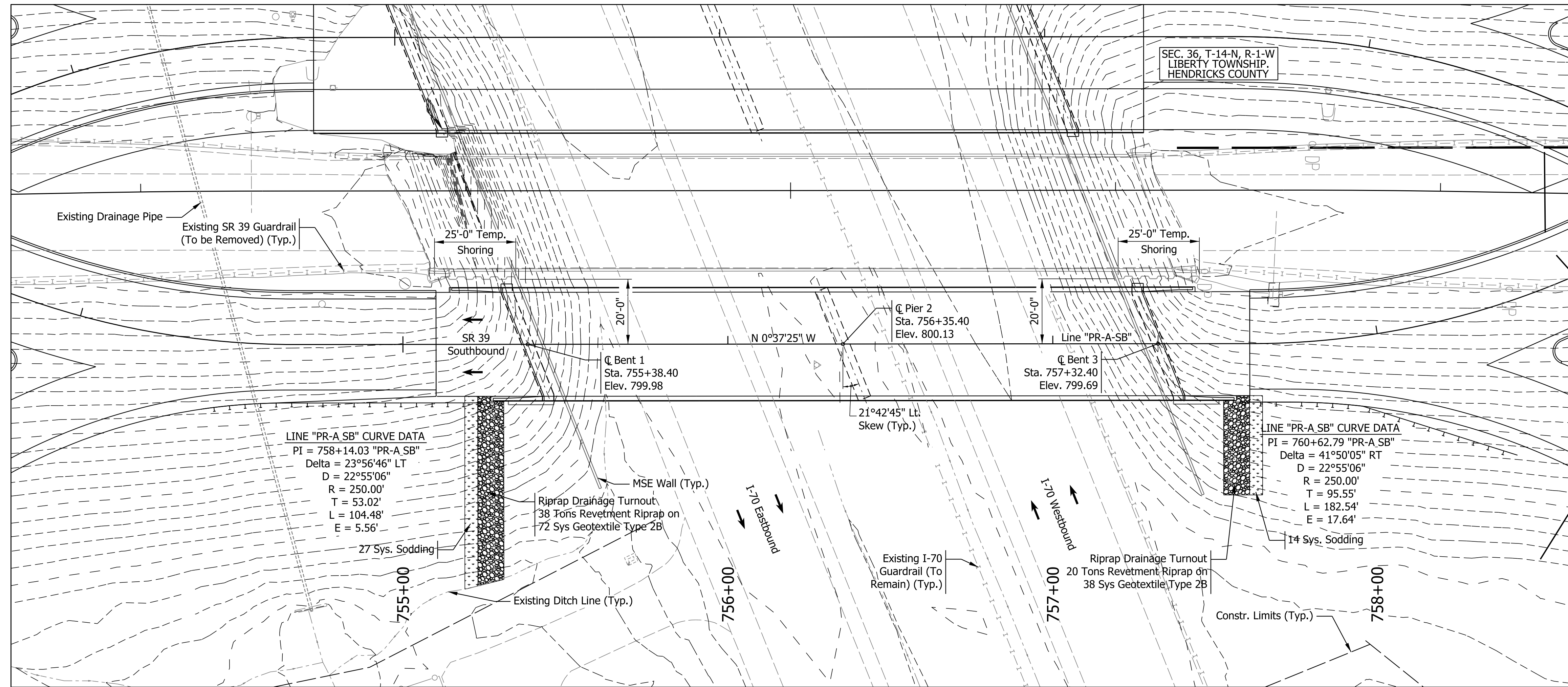
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: SDK	DRAWN: KHN	
CHECKED: BMG	CHECKED: SDK	

INDIANA
DEPARTMENT OF TRANSPORTATION

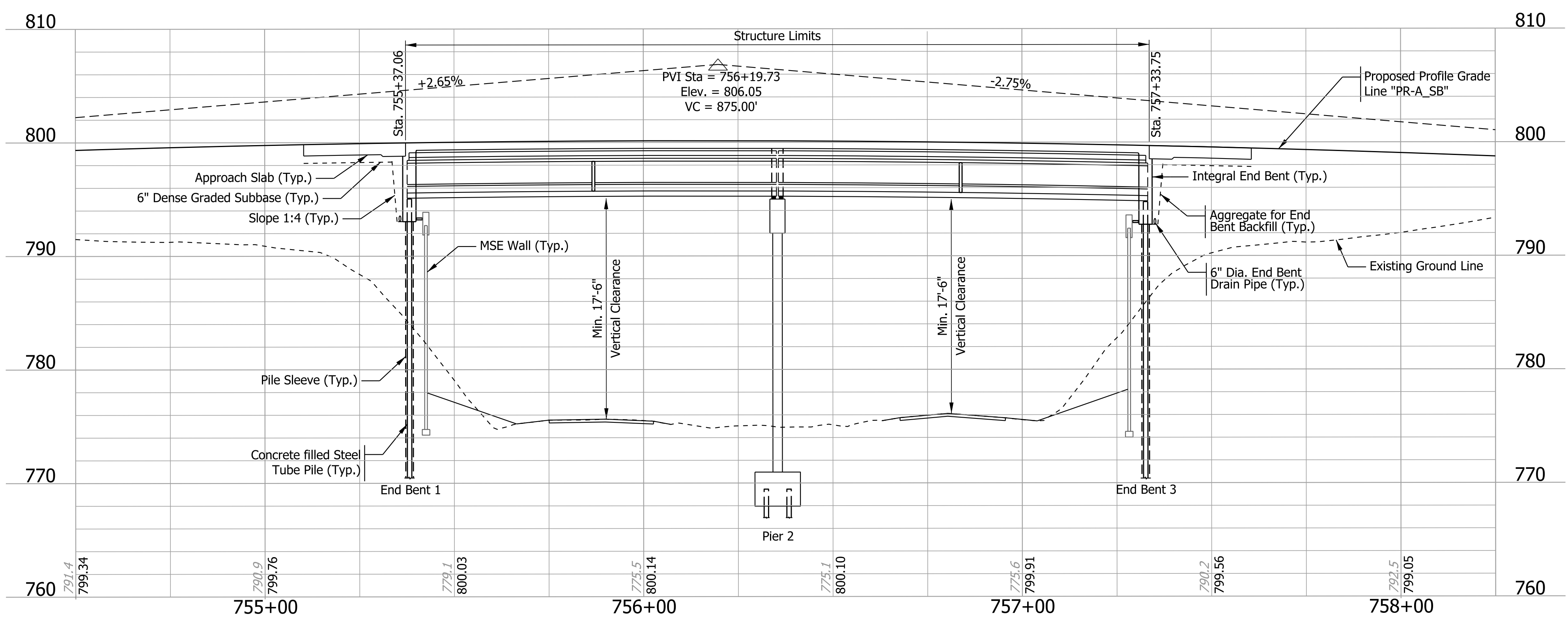
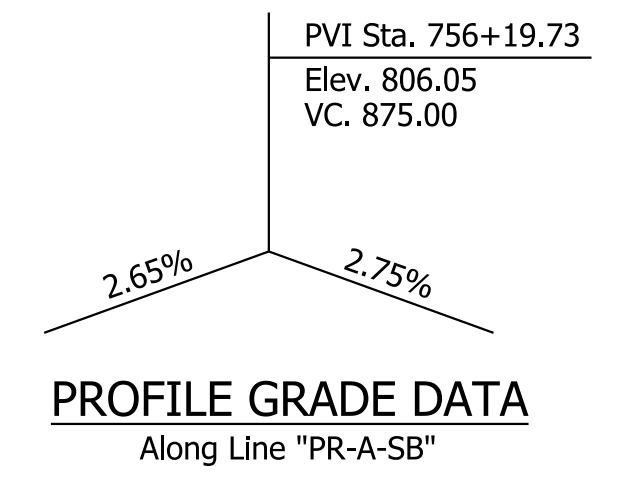
LAYOUT
SR 39 NB BRIDGE OVER I-70

SCALE	BRIDGE FILE
AS SHOWN	039-32-10120-A & 039-32-10415-A
	DESIGNATION
	1500145 & 1801428
DRAWING NUMBER	SHEETS
of	7 of 18
CONTRACT	PROJECT
R-41265	1500143



EXISTING STRUCTURE

The existing SR 39 structure over I-70 is a 4-Span multi beam (or) girder bridge built in ??? with 38'-0", 69'-9", 69'-9", & 38'-0" spans and 30'-0" clear roadway, reinforced concrete deck. Plans are on file with the Bridge Department of the Indiana Department of Transportation as File No. 039-32-05393A. Present structure is to be removed.



NOTE

- R/W not visible in plan view. Bridge falls within R/W limits.

PRESTRESSED CONCRETE BULB-TEE BEAM BRIDGE
 2 SPANS @ 97'-0"
 32'-0" CLEAR ROADWAY
 20°42'45" SKEW LT.
 SR 39 OVER I-70
 HENDRICKS COUNTY

Plot: 6/1/2018 3:39 PM

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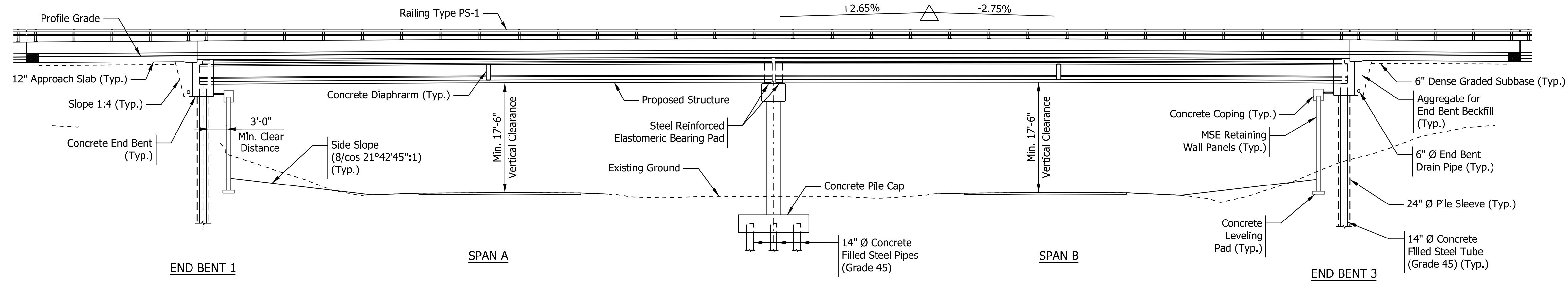
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: SDK	DRAWN: KHN	
CHECKED: BMG	CHECKED: SDK	

INDIANA
DEPARTMENT OF TRANSPORTATION

LAYOUT
SR 39 SB BRIDGE OVER I-70

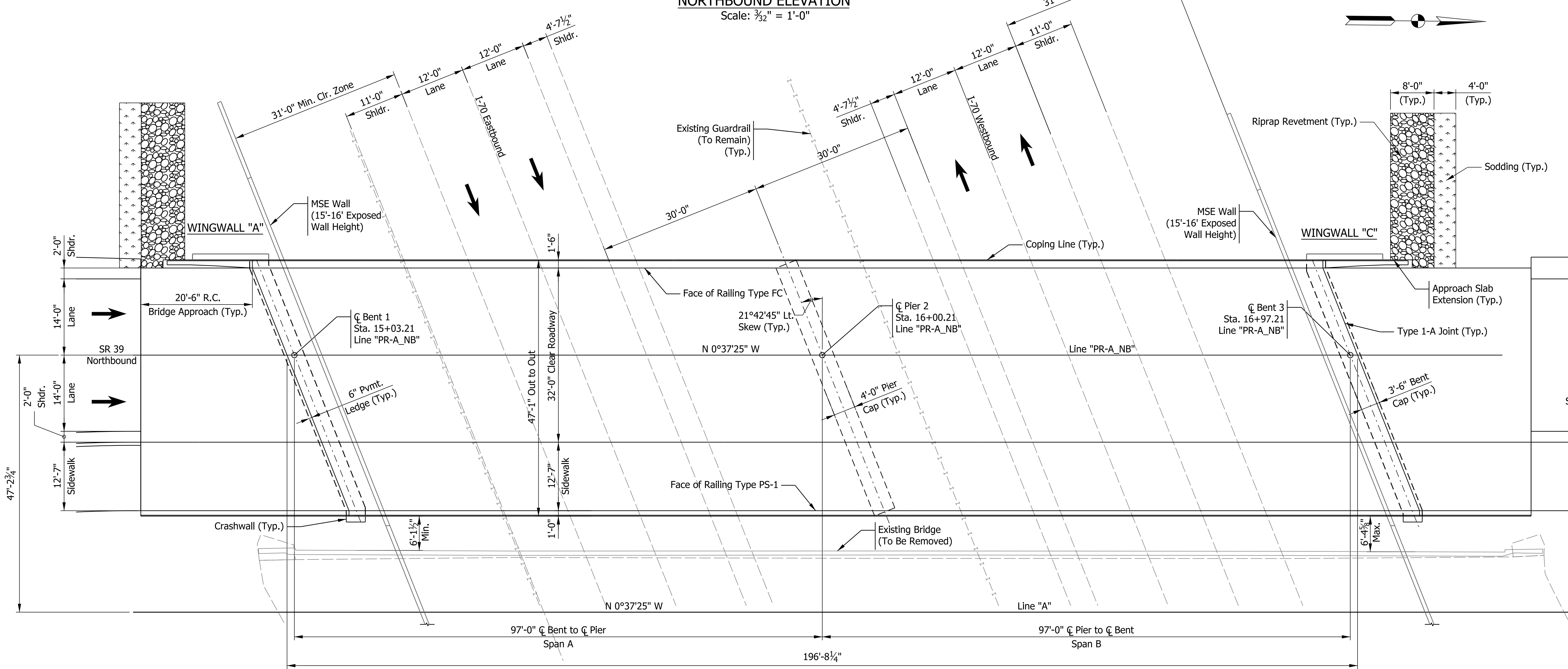
SCALE	BRIDGE FILE
AS SHOWN	039-32-10120-A & 039-32-10415-A
	DESIGNATION
	1500145 & 1801428
DRAWING NUMBER	SHEETS
of	8 of 18
CONTRACT	PROJECT
R-41265	1500143

STRUCTURE TO BE BUILT ON A 885' VERTICAL CURVE



NORTHBOUND ELEVATION

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



NORTHBOUND PLAN

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

GENERAL NOTES

Reinforcing steel cover to be 21#2" inches in top and 1" minimum in bottom of floor slab, 3" in footings, except bottom steel which shall be 4", and 2" in all other parts, unless noted.

All exposed faces of the end bent caps and the barrier shall receive Surface Seal. Surface Seal will be paid for as a lump sum. Surface Seal all exposed surfaces of approach slabs, face of deck coping and outer 6" of the underside of deck.

DESIGN DATA

Designed from HL-93 loading, in accordance with AASHTO LRFD Bridge Design Specifications, Sixth Edition, 2012nd Interims through 2013.

DEAD LOAD
Actual weight plus 35 lb/sq ft for future wearing surface and 15 lb/sq ft for permanent metal deck forms.

FLOOR SLAB
Designed with a 71#2" structural depth plus 1#2" sacrificial wearing surface.

DESIGN STRESSES

CONCRETE

Class "A" Concrete	f _c = 3,500 p.s.i.
Class "B" Concrete	f _c = 3,000 p.s.i.
Class "C" Concrete	f _c = 4,000 p.s.i.
Prestressed Concrete	f _c = 8,000 p.s.i.

REINFORCING STEEL
Reinforcing Steel (Grade 60) f_y = 60,000 p.s.i.

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. Finishing machine was assumed to be supported 6 in. outside 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/sq ft for permanent metal stay-in-place deck forms, removable deck forms and 2 ft exterior walkway.

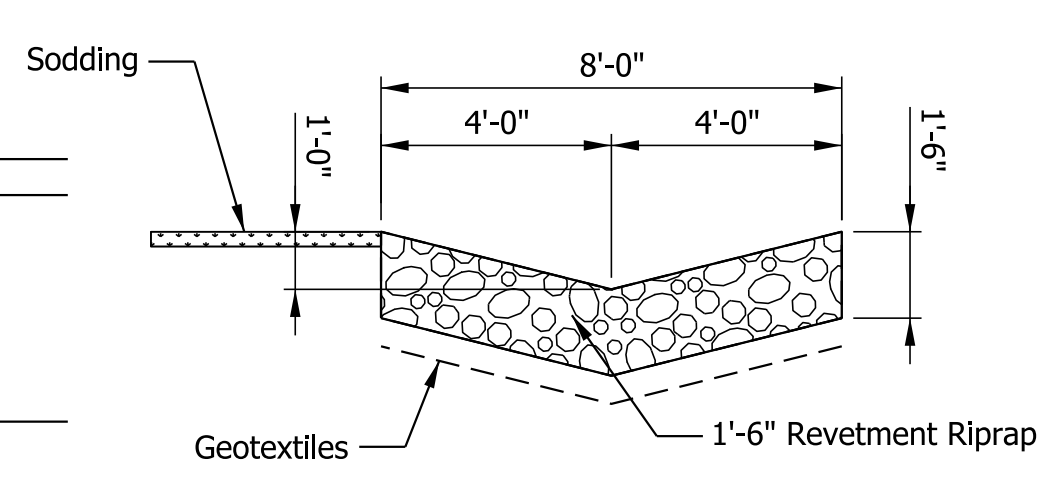
CONSTRUCTION LIVE LOAD

Designed for 20 lb/sq 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.

Designed for 70 mph horizontal wind loading in accordance with LRFD 3.8.1.



RIPRAP DRAINAGE TURNOUT TYPICAL SECTION

Not to Scale

PRESTRESSED CONCRETE BULB-TEE BEAM BRIDGE
2 SPANS @ 97'-0"
32'-0" CLEAR ROADWAY
21°42'45" SKEW LT.
SR 39 OVER I-70
HENDRICKS COUNTY

Plot: 6/1/2018 3:39 PM

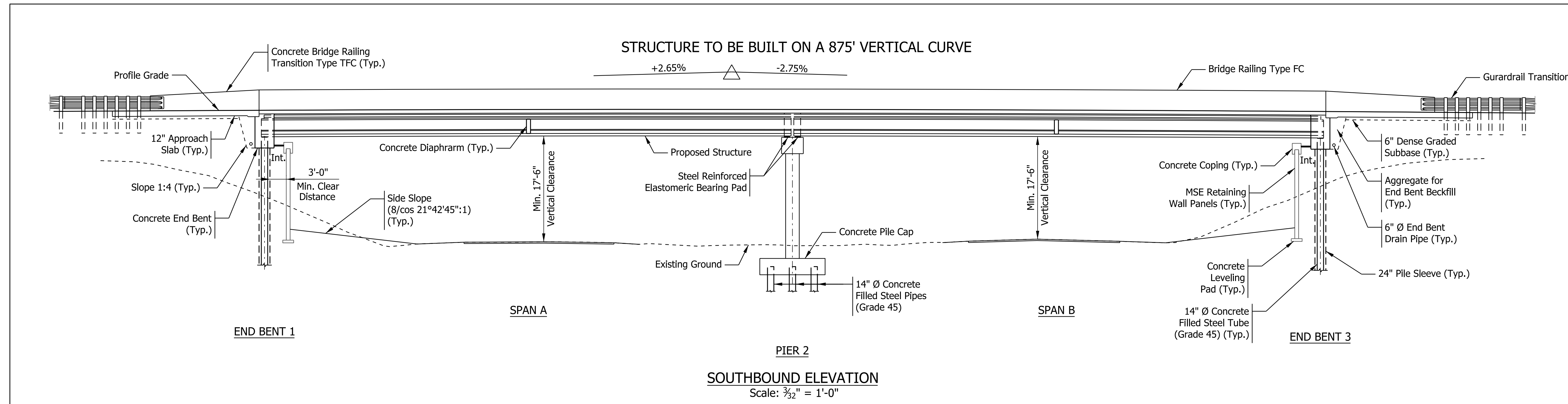
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: SDK	DRAWN: KHN	
CHECKED: BMG	CHECKED: SDK	

INDIANA DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
SR 39 NB BRIDGE OVER I-70

SCALE	BRIDGE FILE
AS SHOWN	039-32-10120-A & 039-32-10415-A
	DESIGNATION
	1500145 & 1801428
DRAWING NUMBER	SHEETS
of	9 of 18
CONTRACT	PROJECT
R-41265	1500143



GENERAL NOTES

Reinforcing steel cover to be 21#2" inches in top and 1" minimum in bottom of floor slab, 3" in footings, except bottom steel which shall be 4", and 2" in all other parts, unless noted.

All exposed faces of the end bent caps and the barrier shall receive Surface Seal. Surface Seal will be paid for as a lump sum. Surface Seal all exposed surfaces of approach slabs, face of deck coping and outer 6" of the underside of deck.

DESIGN DATA

Designed for HL-93 loading, in accordance with AASHTO LRFD Bridge Design Specifications, Sixth Edition, 2012nd Interims through 2013.

DEAD LOAD
Actual weight plus 35 lb/sq ft for future wearing surface and 15 lb/sq ft for permanent metal deck forms.

FLOOR SLAB
Designed with a 71#2" structural depth plus 1#2" sacrificial wearing surface.

DESIGN STRESSES

CONCRETE

Class "A" Concrete	f _c = 3,500 p.s.i.
Class "B" Concrete	f _c = 3,000 p.s.i.
Class "C" Concrete	f _c = 4,000 p.s.i.
Prestressed Concrete	f _c = 8,000 p.s.i.

REINFORCING STEEL
Reinforcing Steel (Grade 60) f_y = 60,000 p.s.i.

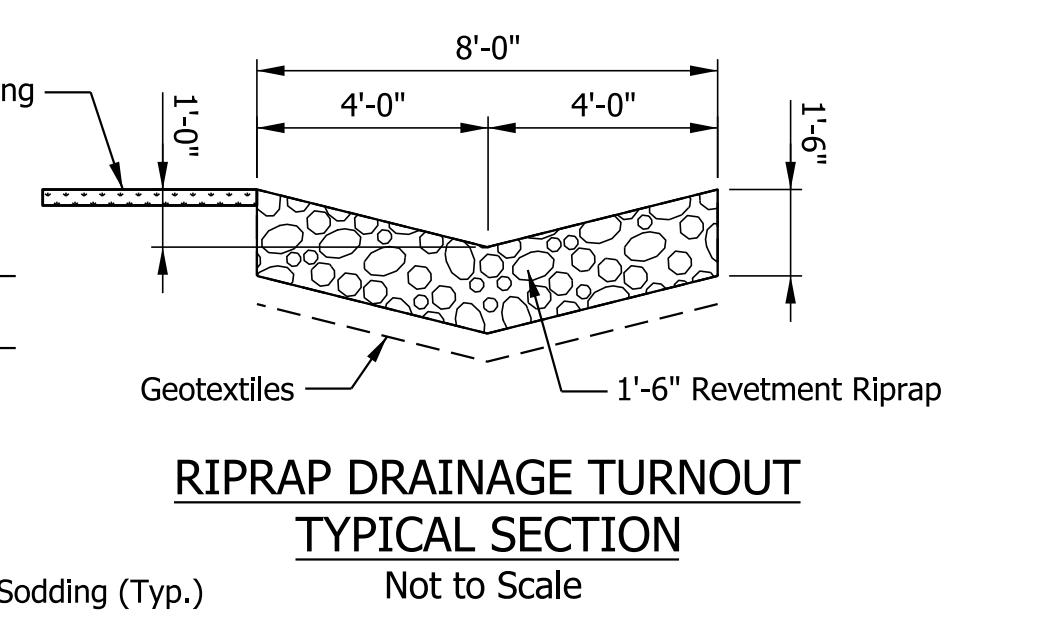
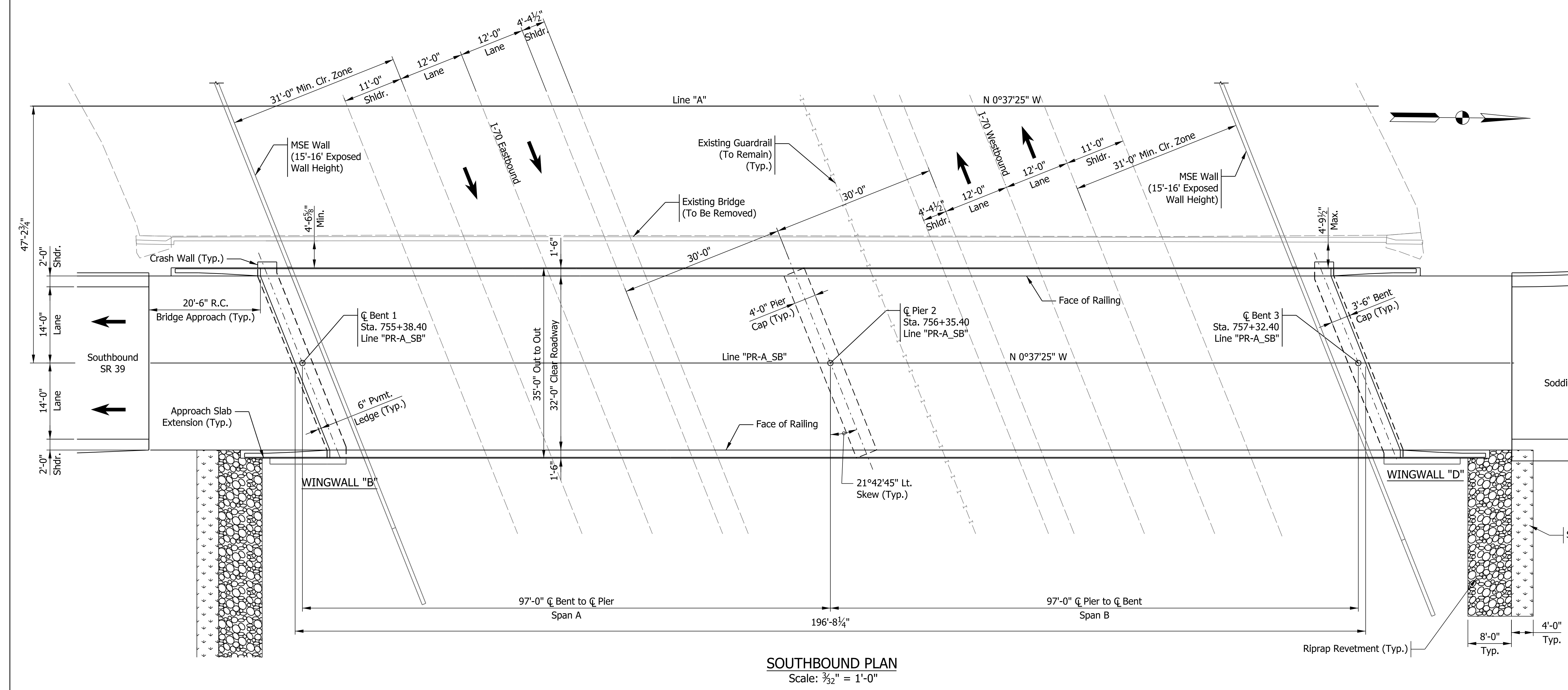
CONSTRUCTION LOADING
The exterior girder has been checked for strength, deflection, and overturning using the construction loads shown below. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior girder. Finishing machine was assumed to be supported 6 in. outside 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/sq ft for permanent metal stay-in-place deck forms, removable deck forms and 2 ft exterior walkway.

CONSTRUCTION LIVE LOAD
Designed for 20 lb/sq 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 in accordance with LRFD 3.8.1.

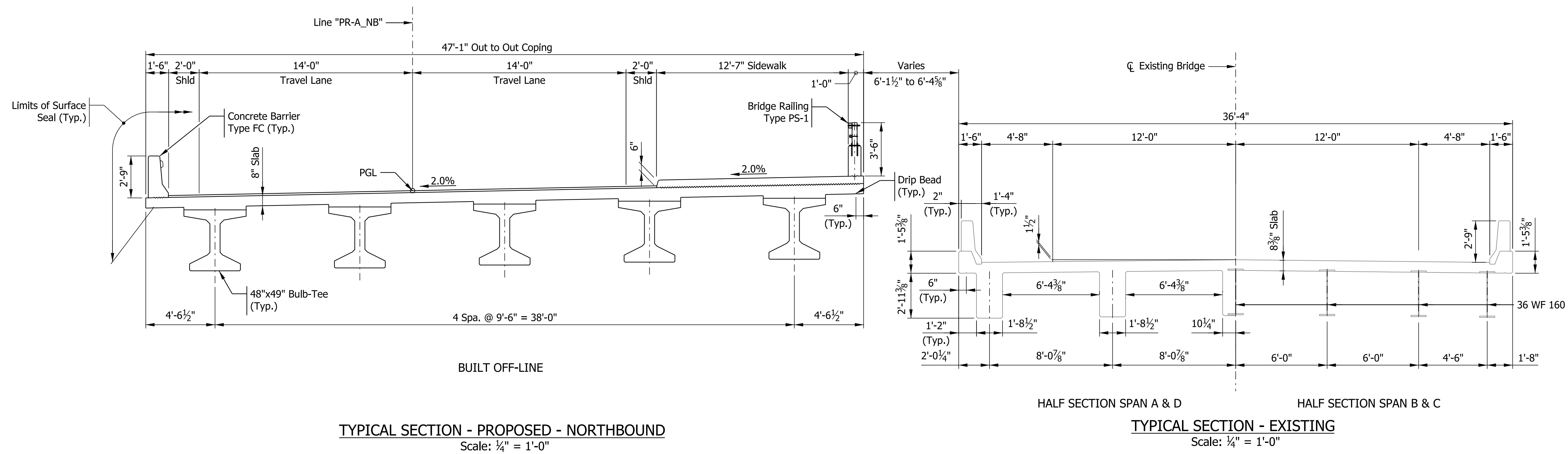


PRESTRESSED CONCRETE BULB-TEE BEAM BRIDGE
2 SPANS @ 97'-0"
32'-0" CLEAR ROADWAY
21°42'45" SKEW LT.
SR 39 OVER I-70
HENDRICKS COUNTY

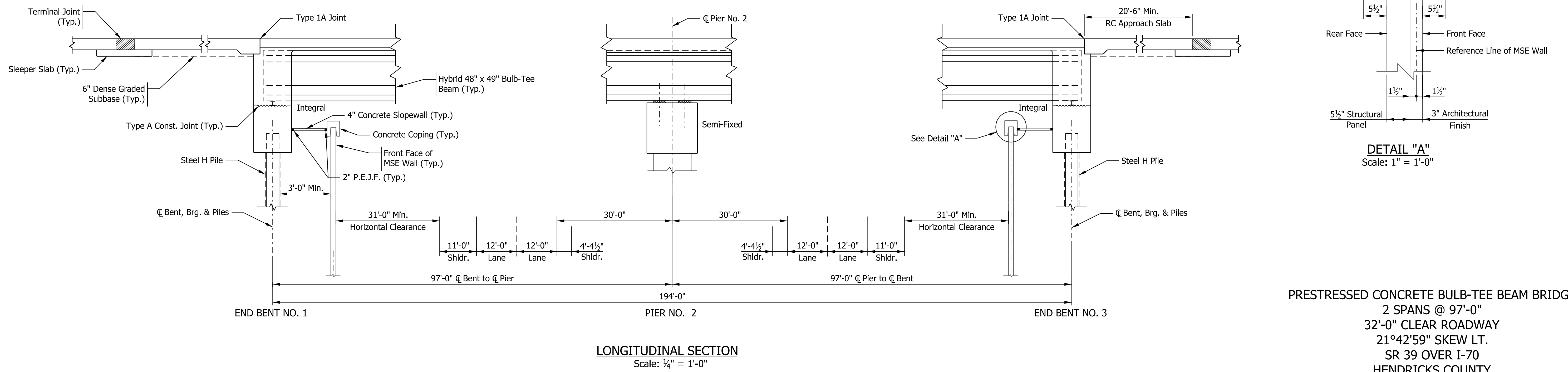
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RECOMMENDED FOR APPROVAL		INDIANA DEPARTMENT OF TRANSPORTATION		SCALE AS SHOWN		BRIDGE FILE 039-32-10120-A & 039-32-10415-A	
DESIGNED: SDK		DRAWN: KHN		DRAWING NUMBER		SHEETS	
CHECKED: BMG		CHECKED: SDK		of 10		of 18	
				CONTRACT R-41265		PROJECT 1500143	



SPLIT BRIDGES FOR DIVERGING DIAMOND INTERCHANGE



PRESTRESSED CONCRETE BULB-TEE BEAM BRIDGE
2 SPANS @ 97'-0"
32'-0" CLEAR ROADWAY
21°42'59" SKEW LT.
SR 39 OVER I-70
HENDRICKS COUNTY

Plot: 6/1/2018 3:39 PM

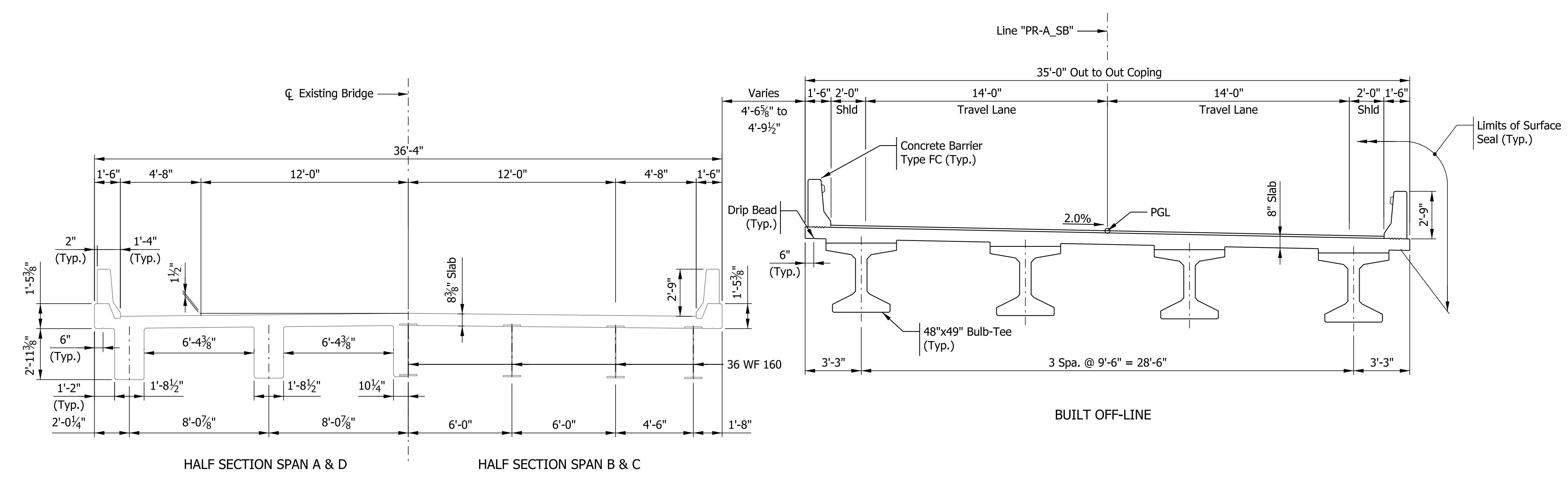
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: SDK	DRAWN: KHN	
CHECKED: BMG	CHECKED: SDK	

INDIANA
DEPARTMENT OF TRANSPORTATION

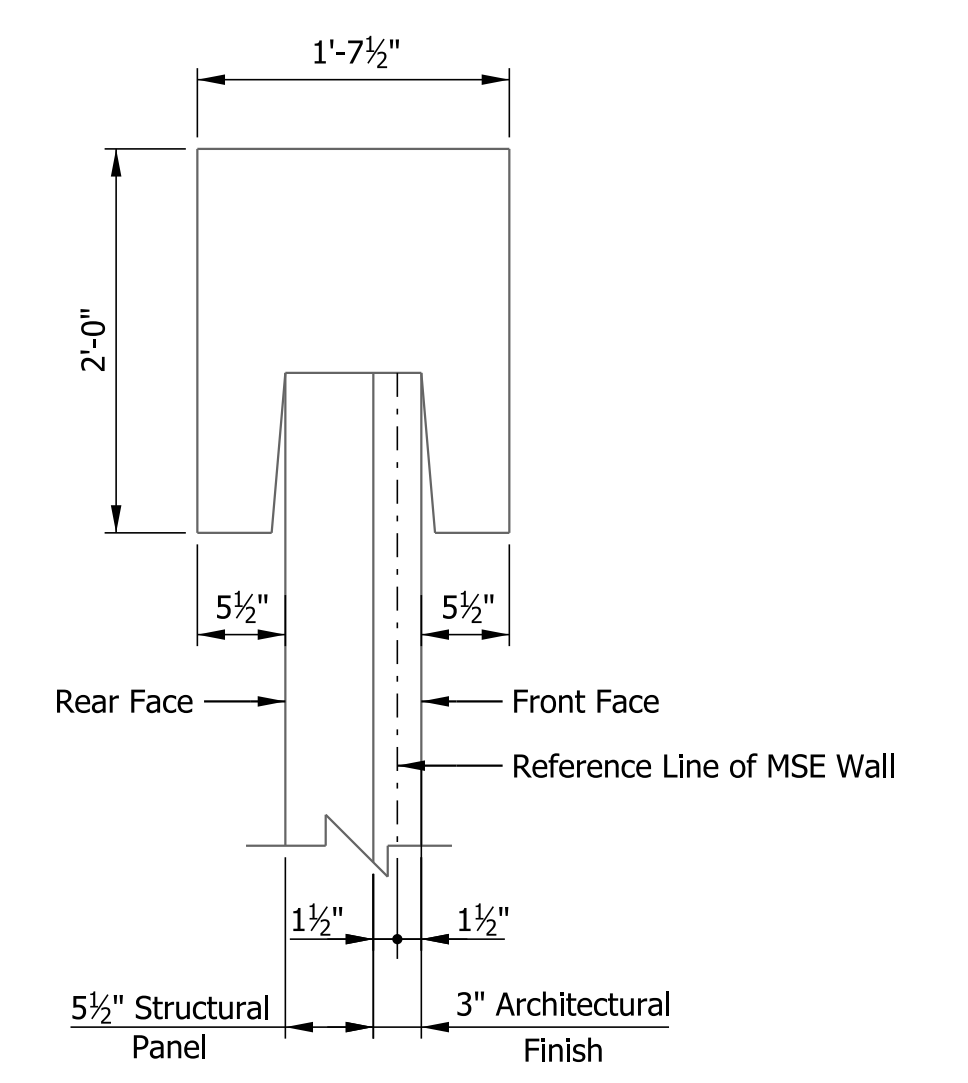
TYPICAL SECTION - NB
SR 39 BRIDGE OVER I-70

SCALE AS SHOWN	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
	DESIGNATION 1500145 & 1801428
DRAWING NUMBER of	SHEETS 11 of 18
CONTRACT R-41265	PROJECT 1500143



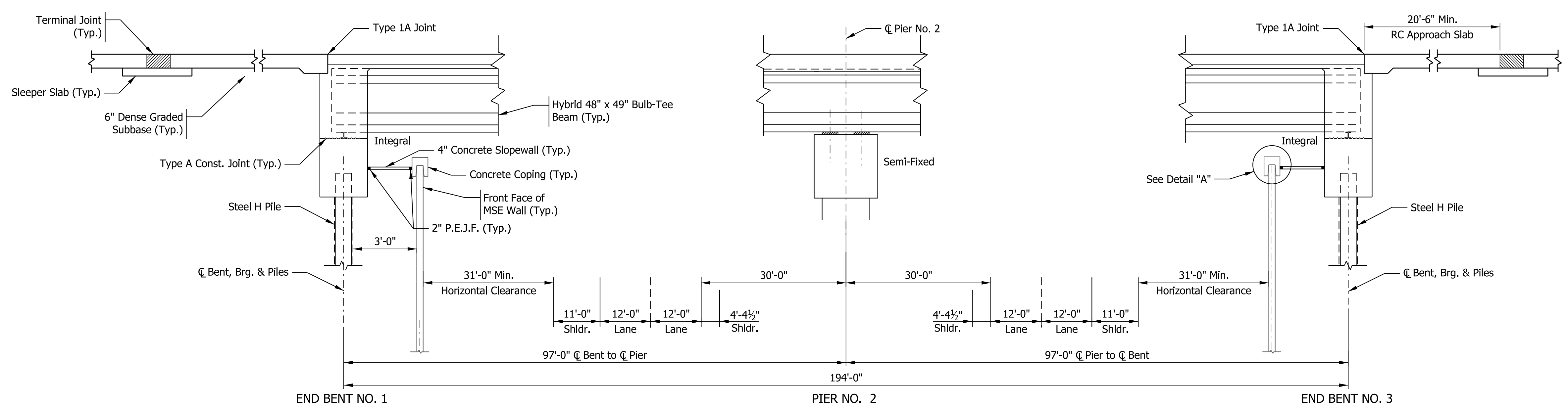
TYPICAL SECTION - EXISTING
Scale: 1/4" = 1'-0"

TYPICAL SECTION - PROPOSED - SOUTHBOUND
Scale: 1/4" = 1'-0"



DETAIL "A"
Scale: 1" = 1'-0"

SPLIT BRIDGES FOR DIVERGING DIAMOND INTERCHANGE



LONGITUDINAL SECTION
Scale: 1/4" = 1'-0"

PRESTRESSED CONCRETE BULB-TEE BEAM BRIDGE
2 SPANS @ 97'-0"
32'-0" CLEAR ROADWAY
21°42'59" SKEW LT.
SR 39 OVER I-70
HENDRICKS COUNTY

Plot: 6/1/2018 3:39 PM

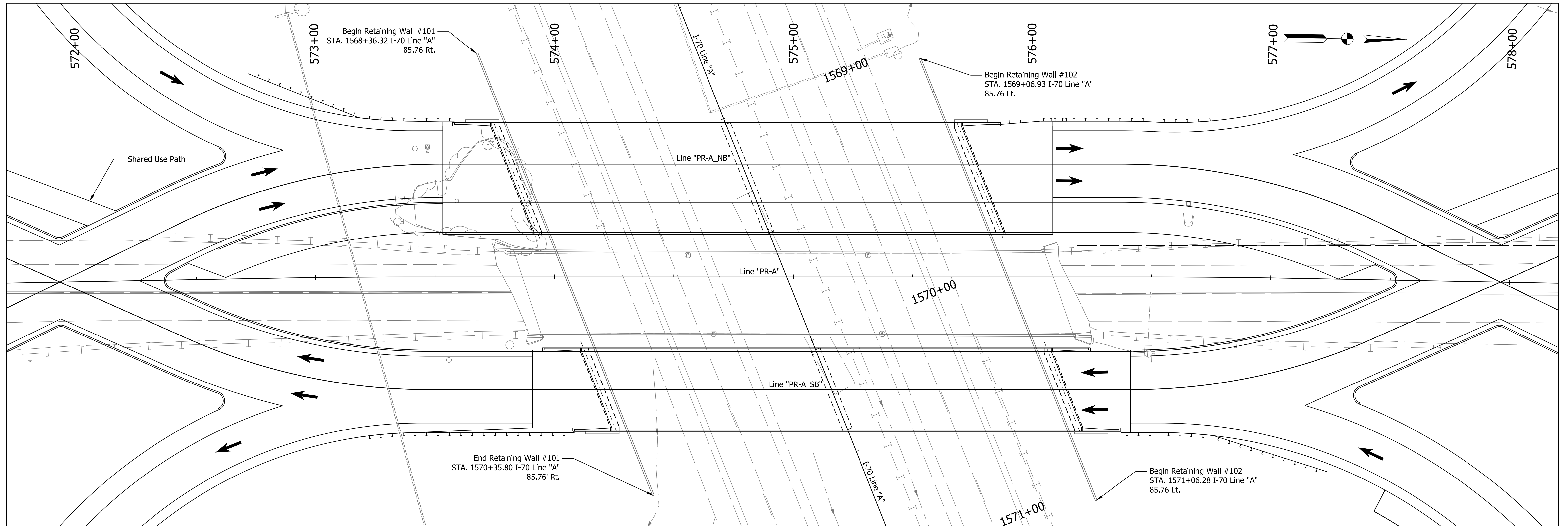
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: SDK	DRAWN: KHN	
CHECKED: BMG	CHECKED: SDK	

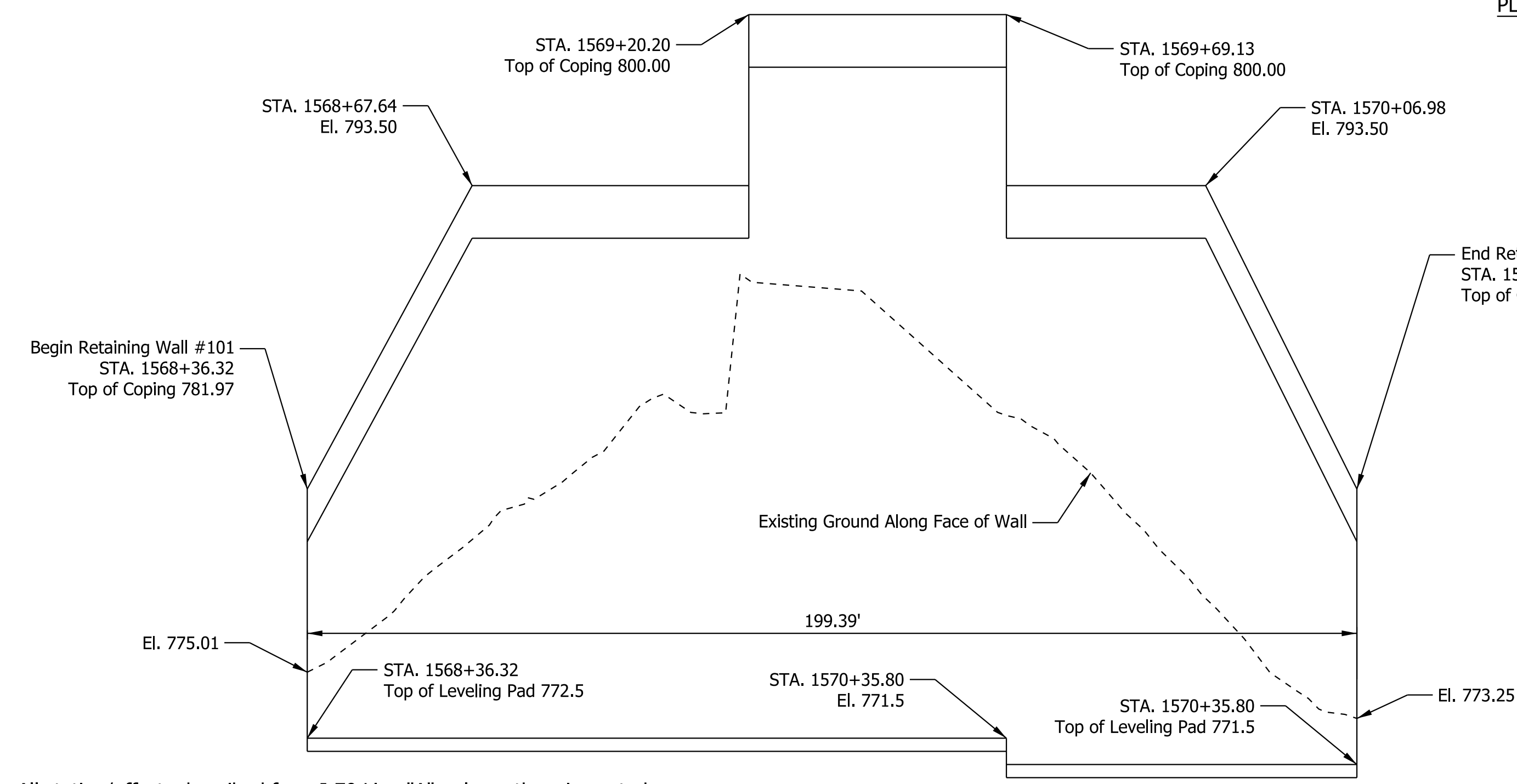
INDIANA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION - SB
SR 39 BRIDGE OVER I-70

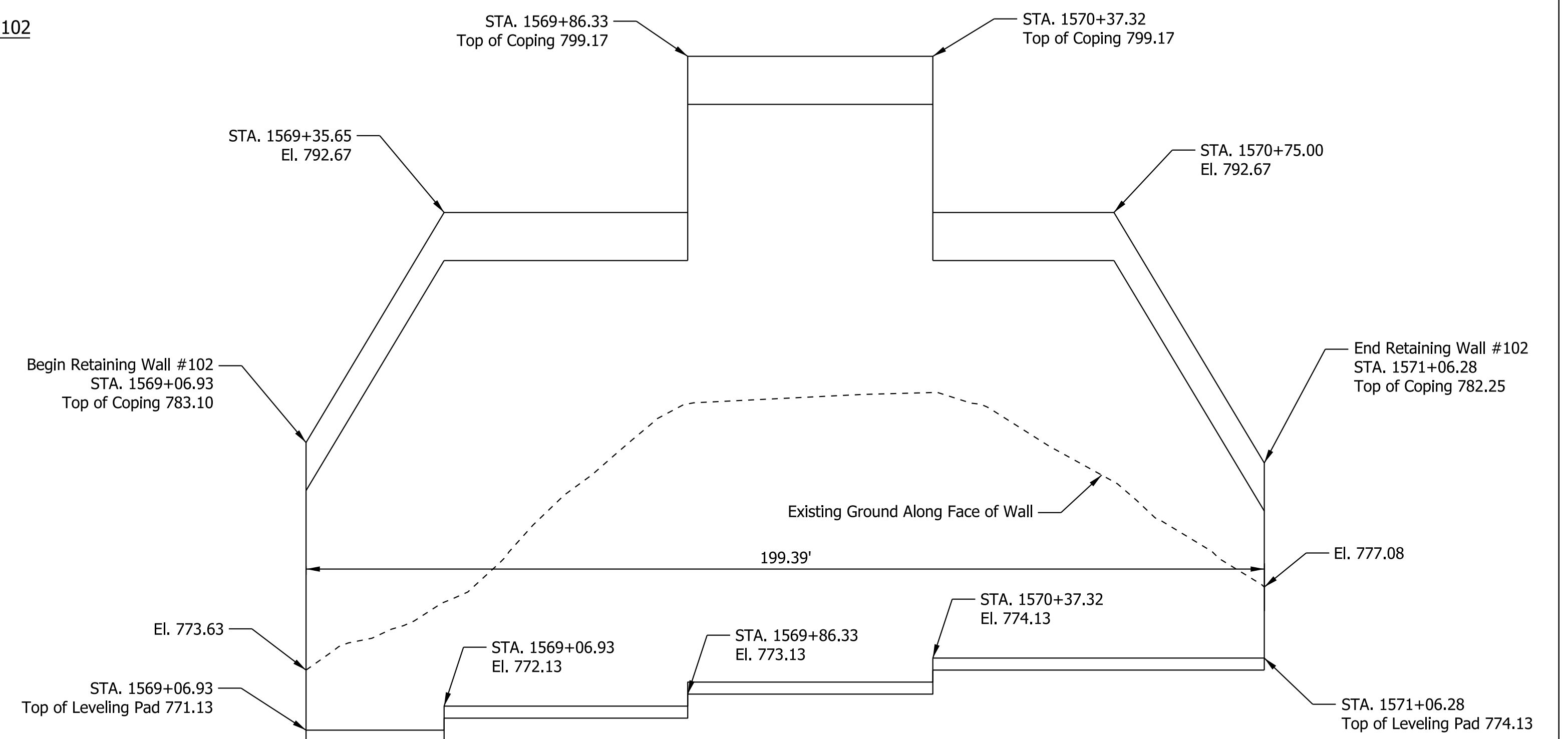
SCALE AS SHOWN	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
	DESIGNATION 1500145 & 1801428
DRAWING NUMBER of	SHEETS 12 of 18
CONTRACT R-41265	PROJECT 1500143



PLAN - WALL #101 & 102



ELEVATION - WALL #101



ELEVATION - WALL #102

All station/offsets described from I-70 Line "A" unless otherwise noted.

FOR INFORMATION ONLY

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: KSD	DRAWN: KSD	
CHECKED: RPH	CHECKED: RPH	

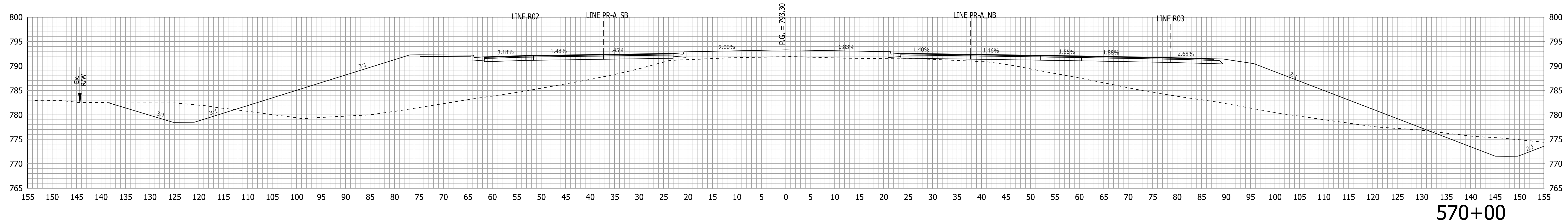
INDIANA
DEPARTMENT OF TRANSPORTATION

**RETAINING WALL DETAILS
NORTH/SOUTH ABUTMENT**

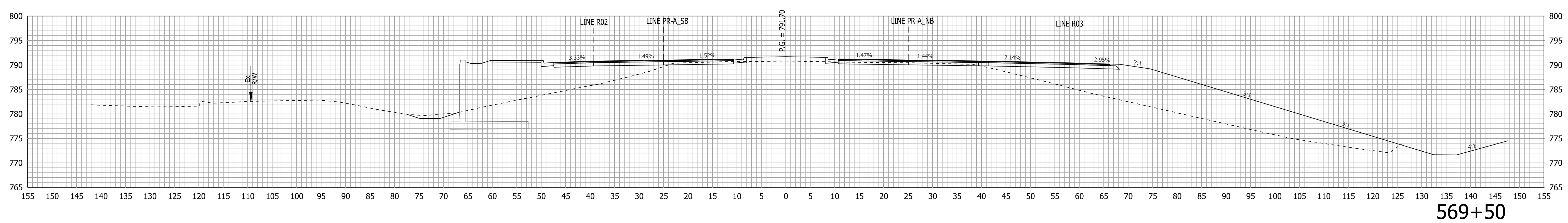
HORIZONTAL SCALE	BRIDGE FILE
1" = 20'	039-32-10120-A & 039-32-10415-A
VERTICAL SCALE	DESIGNATION
1" = 5'	1500145 & 1801428
SURVEY BOOK	SHEETS
	13 of 18
CONTRACT	PROJECT
R-41265	1500143

Plot: 6/1/2018 3:40 PM

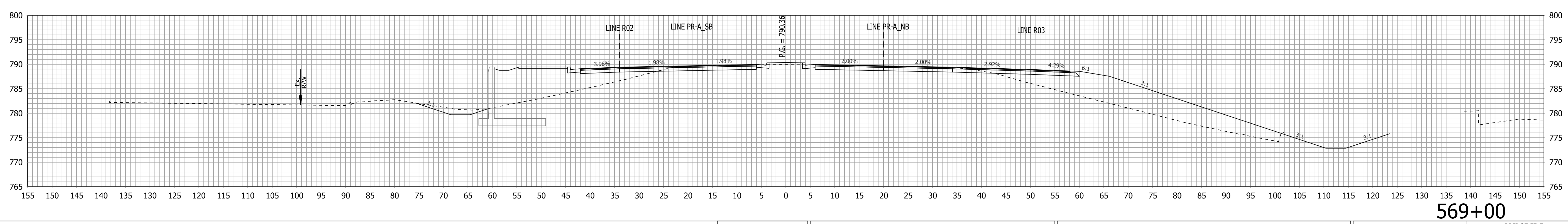
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570+00



569+50



569+00

Plot: 6/9/2018 8:02 PM

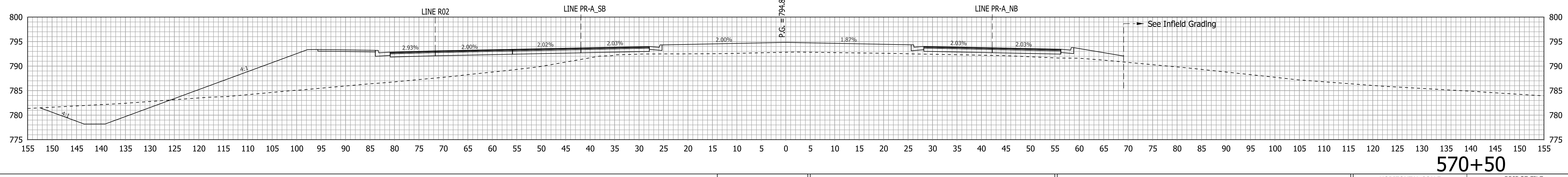
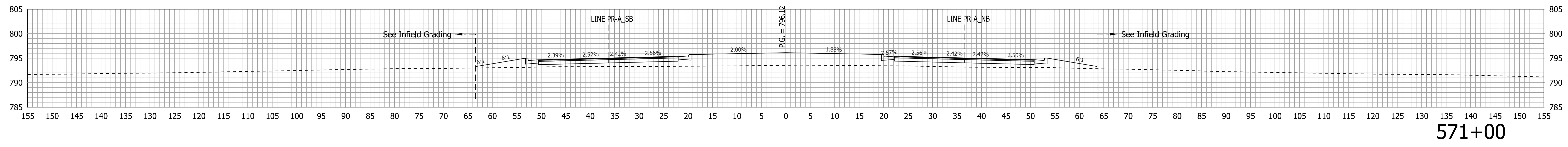
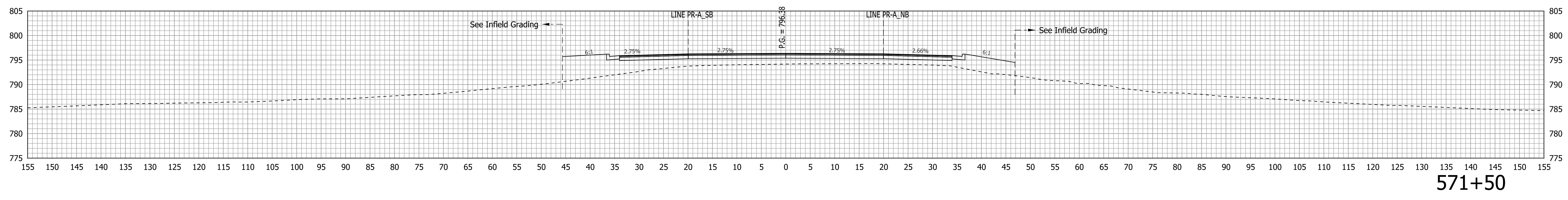
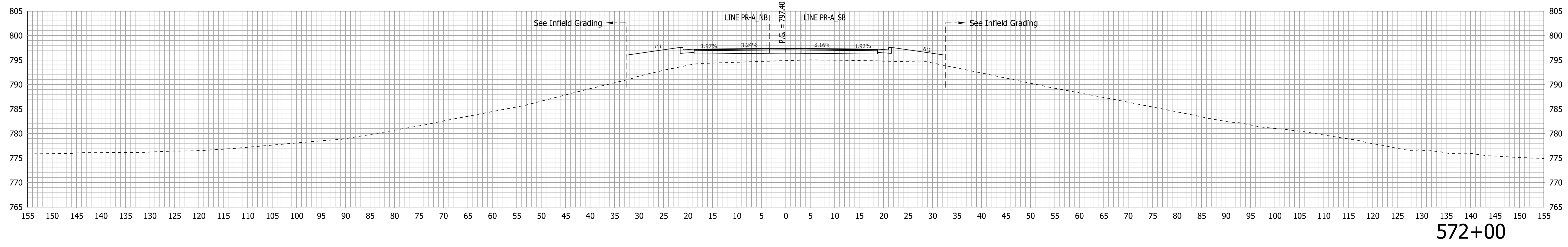
STA. 569+00 TO STA. 570+00

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: KSD _____	DRAWN: KSD _____	
CHECKED: RPH _____	CHECKED: RPH _____	

INDIANA
DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
SR 39 LINE "PR-A"**

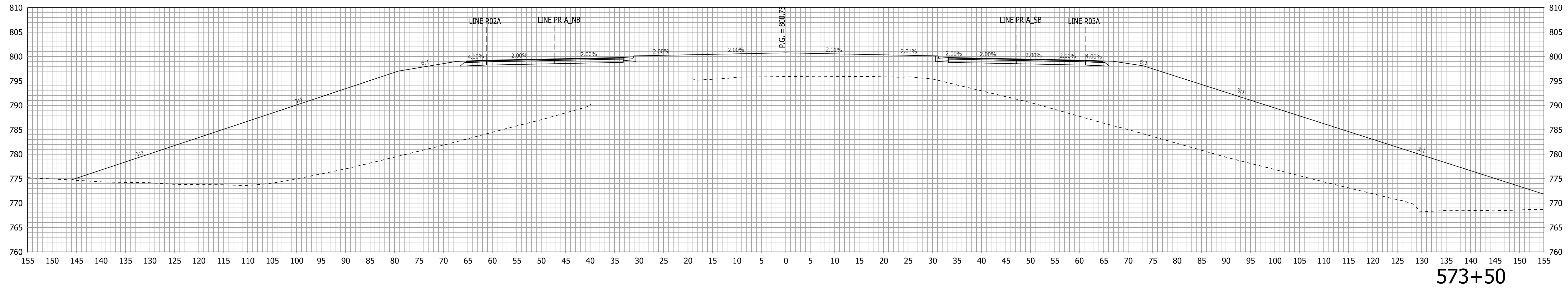
HORIZONTAL SCALE 1" = 10'	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
VERTICAL SCALE 1" = 10'	DESIGNATION 1500145 & 1801428
SURVEY BOOK	SHEETS 14 of 18
CONTRACT R-41265	PROJECT 1500143



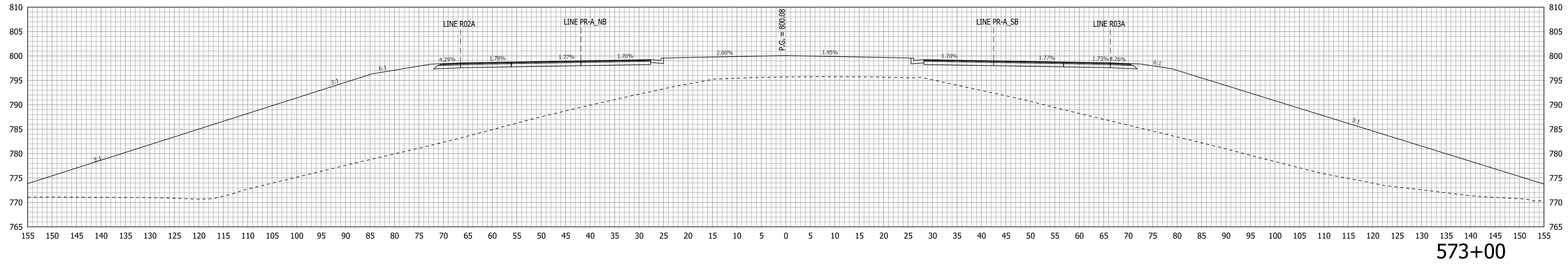
Plot: 6/9/2018 8:02 PM

STA. 570+50 TO STA. 572+00

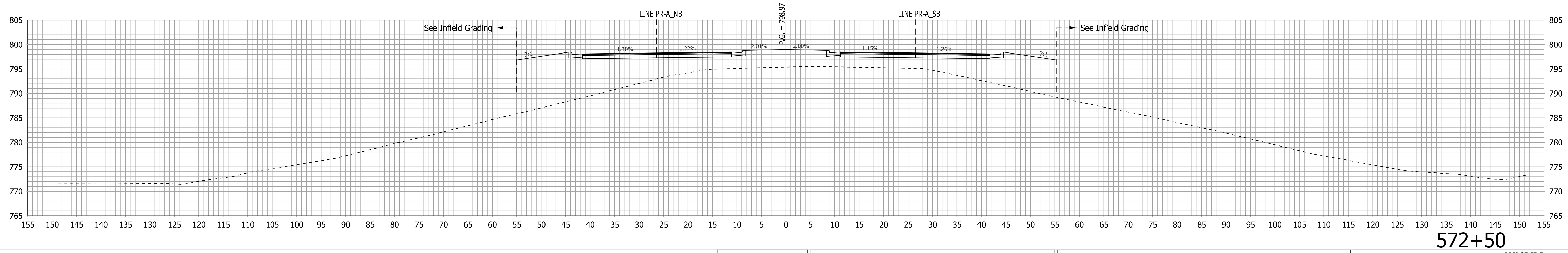
RECOMMENDED FOR APPROVAL _____ DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE 1" = 10'	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
			VERTICAL SCALE 1" = 10'	DESIGNATION 1500145 & 1801428
DESIGNED: KSD	DRAWN: KSD	CROSS SECTIONS SR 39 LINE "PR-A"		
CHECKED: RPH	CHECKED: RPH			
		SURVEY BOOK	SHEETS 15 of 18	
		CONTRACT R-41265	PROJECT 1500143	



573+50



573+00

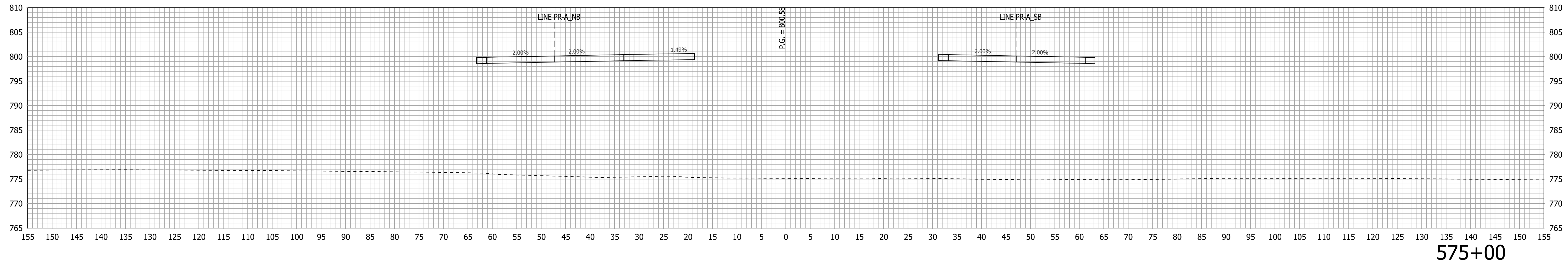


572+50

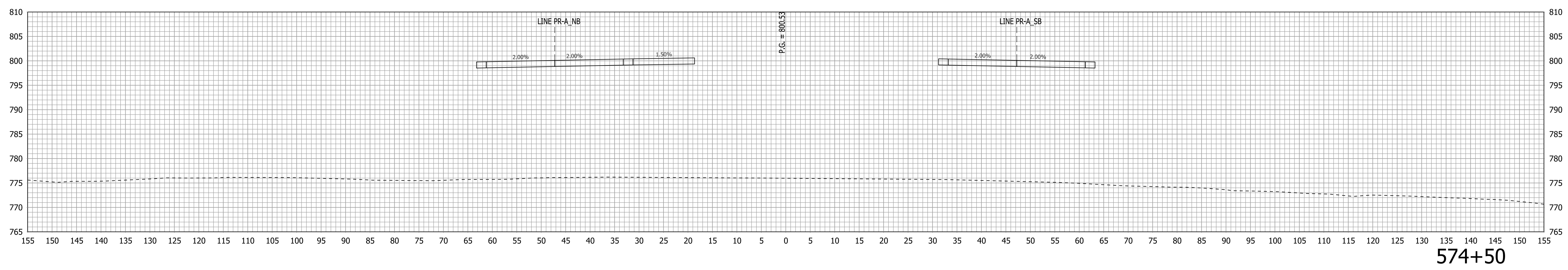
Plot: 6/9/2018 8:03 PM

STA. 572+50 TO STA. 573+50

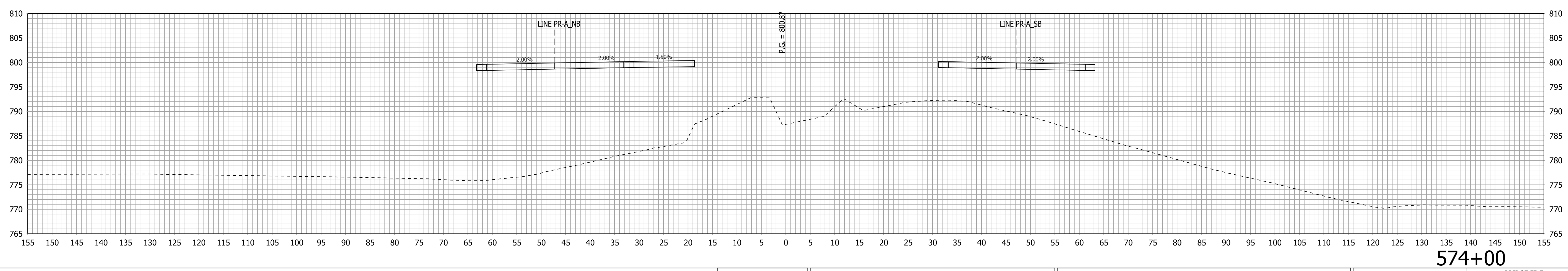
RECOMMENDED FOR APPROVAL _____ DESIGNED: KSD CHECKED: RPH	DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE 1" = 10'	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
	DRAWN: KSD CHECKED: RPH		VERTICAL SCALE 1" = 10'	DESIGNATION 1500145 & 1801428
CROSS SECTIONS SR 39 LINE "PR-A"			SURVEY BOOK	SHEETS 16 of 18
			CONTRACT R-41265	PROJECT 1500143



575+00



574+50



574+00

Plot: 6/9/2018 8:03 PM

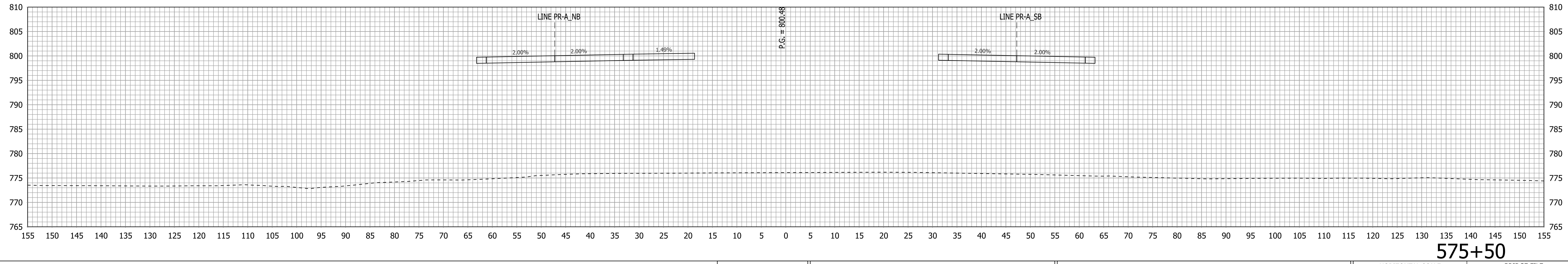
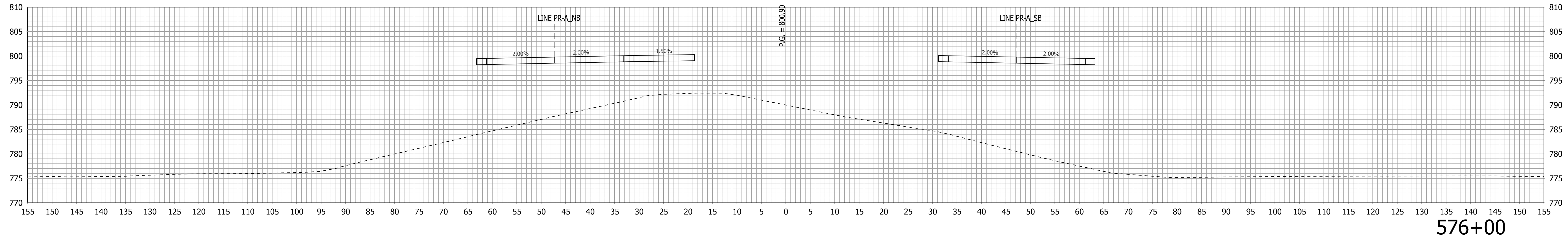
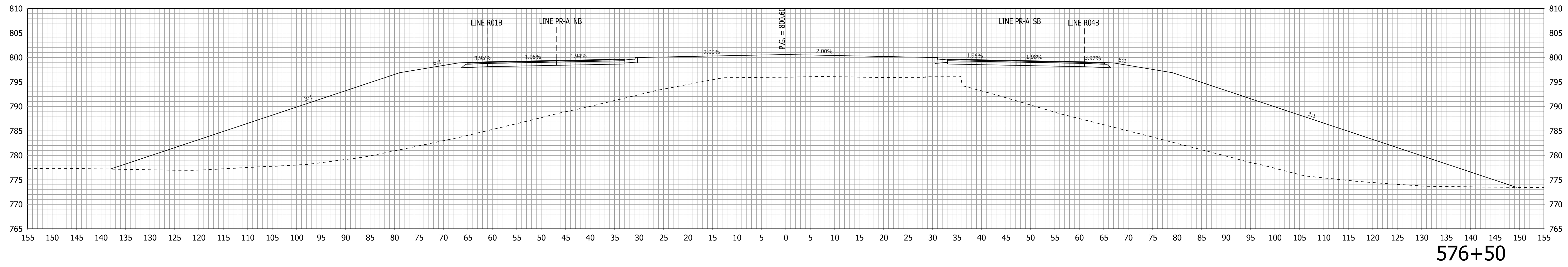
STA. 574+00 TO STA. 575+00

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: KSD _____	DRAWN: KSD _____	
CHECKED: RPH _____	CHECKED: RPH _____	

INDIANA
DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
SR 39 LINE "PR-A"**

HORIZONTAL SCALE 1" = 10'	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
VERTICAL SCALE 1" = 10'	DESIGNATION 1500145 & 1801428
SURVEY BOOK	SHEETS 17 of 18
CONTRACT R-41265	PROJECT 1500143



Plot: 6/9/2018 8:03 PM

STA. 575+50 TO STA. 576+50

RECOMMENDED FOR APPROVAL _____	DESIGN ENGINEER _____	DATE _____
DESIGNED: KSD _____	DRAWN: KSD _____	
CHECKED: RPH _____	CHECKED: RPH _____	

INDIANA
DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS
SR 39 LINE "PR-A"**

HORIZONTAL SCALE 1" = 10'	BRIDGE FILE 039-32-10120-A & 039-32-10415-A
VERTICAL SCALE 1" = 10'	DESIGNATION 1500145 & 1801428
SURVEY BOOK	SHEETS 18 of 18
CONTRACT R-41265	PROJECT 1500143

APPENDIX B

Re-Coordination

Early Coordination List
 I-70/SR 39 Interchange Modification
 Hendricks County, Des. No. 1500143

The following table lists the date coordination was sent and all agencies that were contacted as part of agency re-coordination for this AI. Also included below is the date of their response, or an indication that no response was received.

<i>Agency/Party</i>	<i>Sent Date</i>	<i>Response Date</i>
U.S. Fish and Wildlife Service	11/29/18	11/29/18
Indiana Department of Natural Resources, Division of Fish and Wildlife	11/12/18	12/12/18

Following this list are copies of the Early Coordination Letters, as submitted, and the agency responses. Also included are copies of the completed bat inspection sheets for the bridge and structure and a summary email from the structure inspection and guano collection by Lochmueller Group.



323 Main Street
Suite E
Evansville, Indiana 47708
812.314.7041 *phone*

November 29, 2018

Field Supervisor
U.S. Fish and Wildlife Service
Bloomington Indiana Field Office
620 South Walker Street
Bloomington, Indiana 47403-2121

Re: DES No: 1500143
SR 39 / I-70 Interchange Modification
Hendricks County, Indiana
KEG No: 17-1110.01

Dear Interested Party:

The Indiana Department of Transportation (INDOT) intends to proceed with a project involving the aforementioned roadway in Hendricks County, Indiana. 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.

The above referenced project was originally part of the I-70 Added Travel Lanes (DES No. 1592433) project, which received an approved CE-4 in November 2017. Since the approval, additional traffic data was obtained that indicated much higher traffic volumes than anticipated for the SR 39 bridge and mainline I-70 at the I-70/SR 39 interchange, which led to the investigation of additional interchange alternatives. Additionally, the area near the interchange has recently experienced significant development, which is anticipated to continue into the future, and add to the increasing traffic volumes. As a result, various traffic analyses determined a Diverging Diamond Interchange (DDI) was necessary to efficiently address the large traffic volumes at the I-70/SR 39 interchange. As part of the DDI modifications, the existing four-span bridge (SN 039-32-05293-A) carrying SR 39 over I-70 (one lane each northbound [NB] and southbound [SB] directions of SR 39) will be replaced with two separate 48" Bulb-Tee Pre-stressed Concrete two-span bridges (SNs 039-32-10120-A [SB] and 039-32-10415-A [NB]). The SR 39 NB bridge will provide two lanes and a multi-use path (DES No. 1801428). The SR 39 SB bridge will provide two lanes (DES No. 1500145). The NB and SB bridges flank the existing SR 39 bridge.

The scope of the project limits for the I-70/SR 39 interchange modification project extends from 0.43 miles west to 0.47 miles east of SR 39 on I-70 and 0.31 miles north to 0.41 south of I-70 on SR 39 (see Project Location Map). The only exception to these limits is on SR 39 south of the intersection with County Road 1000S, which further extend approximately 600 feet south. Additionally, approximately 2.44 acres of permanent ROW and 0.48 acre of temporary ROW will

USFWS
Hendricks County

-2-

November 29, 2018
KEG No. 17-1110.01

be required and one structure will be removed (2272 E CR 1000 S, Clayton, Indiana 46118). The preferred MOT for the DDI indicates the SR 39 bridge will remain open to traffic during construction of the new SR 39 bridges.

Land use in the vicinity of the project is primarily agricultural and commercial. INDOT Ecology & Permits Office approved the Waters Investigation Report on Oct. 29, 2018 and has determined that a 401 IP/404 RGP will be required. INDOT Cultural Resources has stated concurrence with INDOT's Section 106 finding of No Historic Properties Affected, via letter on May 4, 2017.

This project does not qualify for the application of the USFWS range-wide programmatic informal consultation for the Indiana bat and northern long-eared bat. During an October 24, 2018 site visit, 10 to 15 bats were observed (see attached Photo Log) on the exterior of the structure to be removed as part of the project. Subsequently, Lochmueller Group conducted an on-site inspection of the structure on November 8, 2018 in an attempt to identify the species of the bats (see attached email). From this effort, no bats were present under the eaves, gable, or elsewhere on the structure; however, a sample from a large amount of bat guano found within the cracks of the decking boards was collected and sent to Northern Arizona University for genetic testing, to determine the species of bat roosting at the structure. Results of the testing are pending, and once available, will be forwarded to the project team and supporting agencies.

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 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 me at 618-233-5877 or MBarletta@kaskaskiaeng.com. Thank you in advance for your input.

Respectfully,

KASKASKIA ENGINEERING GROUP, LLC



Molly Barletta
Senior Environmental Scientist

Enclosures

- Location Map
- Construction Limits Map
- Photo Log
- Lochmueller Group Inspection Email

cc: Dandi Prasad, P.E., WSP (email)

Virginia Flynn

From: McWilliams, Robin <robin_mcwilliams@fws.gov>
Sent: Thursday, November 29, 2018 12:09 PM
To: Molly Barletta
Subject: Re: [EXTERNAL] Early Coordination: DES 1500143, SR 39/I-70 Interchange Modification, Hendricks County, Indiana
Attachments: image002.png

Thank you Molly. At this time, we plan to wait for the results of the DNA sampling before providing any comments.

Sincerely,
Robin

Robin McWilliams Munson

U.S. Fish and Wildlife Service
620 South Walker Street
Bloomington, Indiana 46403
812-334-4261 x. 207 Fax: 812-334-4273

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

On Thu, Nov 29, 2018 at 3:10 PM Molly Barletta <MBarletta@kaskaskiaeng.com> wrote:

Dear Ms. McWilliams-Munson,

Please find attached an early coordination letter and supporting exhibits for the above referenced project.

Thank you,



Molly Barletta

Senior Environmental Scientist

Certified: WBE/DBE/WOSB/EDWOSB



323 Main Street
Suite E
Evansville, Indiana 47708
812.314.7041 *phone*

November 12, 2018

Christie Stanifer
Indiana Department of Natural Resources
Division of Fish and Wildlife
402 West Washington Street, Room W273
Indianapolis, Indiana 46204

Re: INDOT DES No: 1500143
SR 39 / I-70 Interchange Modification
Hendricks County, IN
KEG No: 17-1110.01

Dear Ms. Stanifer:

The Indiana Department of Transportation (INDOT) intends to proceed with a project involving the aforementioned roadway in Hendricks County, Indiana. 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.

The scope of the project limits for the I-70/SR 39 interchange modification will be reduced to the limits of the I-70/SR 39 interchange (see Project Location Map). Specifically, the project extends from 0.43 miles west to 0.47 miles east of SR 39 on I-70 and 0.31 miles north to 0.41 south of I-70 on SR 39. The only exception to these limits is on SR 39 south of the intersection with County Road 1000S, which further extend approximately 600 feet south.

Since the original CE-4 was approved in November 2017, additional traffic data was obtained that indicated much higher traffic volumes than anticipated for the SR 39 bridge and mainline I-70 at the I-70/SR 39 interchange, which led to the investigation of additional interchange alternatives. Additionally, the area near the interchange has recently experienced significant development, which is anticipated to continue into the future, and add to the increasing traffic volumes. As a result of various traffic analyses, a Diverging Diamond Interchange (DDI) was determined to efficiently address the large traffic volumes at the I-70/SR 39 interchange. As part of the DDI modifications, the existing four-span bridge (SN 039-32-05293-A) carrying SR 39 over I-70 (one lane each northbound [NB] and southbound [SB] directions of SR 39) will be replaced with two separate 48" Bulb-Tee Pre-stressed Concrete two-span bridges (SNs 039-32-10120-A [SB] and 039-32-10415-A [NB]). The SR 39 NB bridge will provide two lanes and a multi-use path (Des. No. 1801428). The SR 39 SB bridge will provide two lanes (Des. No. 1500145). The NB and SB bridges flank the existing SR 39 bridge. As a result of the DDI, approximately 2.44 acres of

Christie Stanifer
IDNR

-2-

November 12, 2018
KEG No. 17-1110.01

permanent ROW and 0.48 acre of temporary ROW will be required. The preferred MOT for the DDI suggests the SR 39 bridge will remain open to traffic during construction of the new SR 39 bridges.

Land use in the vicinity of the project is primarily agricultural and commercial. INDOT Ecology & Permits Office approved the Waters Investigation Report on Oct. 29, 2018 and has determined that a 401 IP/404 RGP will be required. This project qualifies for the application of the USFWS range-wide programmatic informal consultation for the Indiana bat and northern long-eared bat. INDOT Cultural Resources has stated concurrence with INDOT's Section 106 finding of No Historic Properties Affected, via letter on May 4, 2017.

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 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 me at 618-233-5877 or VFlynn@kaskaskiaeng.com. Thank you in advance for your input.

Respectfully,

KASKASKIA ENGINEERING GROUP, LLC



Virginia Flynn
Senior Environmental Scientist

Attachments:

- Location Map
- Photographs

cc: Dandi Prasad, HNTB (email)

THIS IS NOT A PERMIT

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

DNR #: ER-21033

Request Received: November 12, 2018

Requestor: Kaskaskia Engineering Group, LLC
 Virginia Flynn
 323 Main Street, Suite E
 Evansville, IN 47708

Project: SR 39 & I-70 interchange modification to diverging diamond, and SR 39 bridge replacements over I-70 (NB=Des #1801428, SB=Des #1500145); KEG #17-1110.01, Des #1500143

County/Site info: Hendricks

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: Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:

1) Fish & Wildlife Passage:

The proposed project generally appears to avoid impacts to significant fish, wildlife, and botanical resource habitat. However, the photos submitted appeared to indicate a number of roadside ditches and drainage culverts in the area. These features may be of low habitat quality but may still be important for fish and wildlife passage through a rapidly developing area. Ensuring that any replacement culverts are installed in a manner that will facilitate rather than impede fish and wildlife movement should be a consideration on all road construction and expansion projects. The Division of Fish and Wildlife recommends the following resource for planning, design, and evaluation of wildlife crossing structures associated with transportation projects:
https://roadecology.ucdavis.edu/files/content/projects/DOT-FHWA_Wildlife_Crossing_Structures_Handbook.pdf.

2) Vegetation Management:

The Division of Fish and Wildlife recommends establishing native grasses and other herbaceous plants along Indiana highway rights-of-way whenever possible through our CORRIDORS (Conservation On Rivers and Roadways Intended to Develop Opportunities for Resources and Species) Program. Please contact Erin Basiger, South Region Landscape Biologist (765-276-3047, ebasiger@dnr.IN.gov), for more information or visit the following link: <https://www.in.gov/dnr/fishwild/9405.htm>.

THIS IS NOT A PERMIT

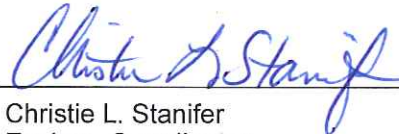
State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

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 within the project area using a mixture of grasses, sedges, and wildflowers native to Central Indiana as soon as possible upon completion.
2. 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.
3. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

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.



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

Date: December 12, 2018

APPENDIX D: Bridge/Structure Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside; from activities above that bore down to the underside; from activities that could impact expansion joints; from deck removal on bridges; or from structure demolition for bridges/structures within 1000 feet of suitable bat habitat.

DOT Project # 1500143	Water Body N/A	Date/Time of Inspection 12/9/18, 2pm	Within 1,000ft of suitable bat habitat (circle one) <input checked="" type="radio"/> Yes <input type="radio"/> No
--------------------------	-------------------	---	---

Route 82-39	County Hendricks	Federal Structure ID 84L089-32-05893A
----------------	---------------------	--

If the bridge/structure is 1,000 feet or more from suitable bat habitat (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check box and STOP HERE. No assessment required. Please submit to the U.S. Fish and Wildlife Service.

Areas Inspected (Check all that apply)

Bridges		Culverts/Other Structures		Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & 24" deep	<input checked="" type="checkbox"/>	Crevices, rough surfaces or imperfections in concrete		Human disturbance or traffic under bridge/in culvert or at the structure	<input checked="" type="radio"/> High	<input type="radio"/> Low	<input type="radio"/> None
All crevices >12" deep & not sealed	<input checked="" type="checkbox"/>	Spaces between walls, ceiling joists		Possible corridors for netting	<input type="radio"/> None/poor	<input checked="" type="radio"/> Marginal	<input type="radio"/> Excellent
All guardrails	<input checked="" type="checkbox"/>						
All expansion joints	<input checked="" type="checkbox"/>						
Spaces between concrete end walls and the bridge deck	<input checked="" type="checkbox"/>						

Last Revised May 31, 2017

Vertical surfaces on concrete I-beams	<input checked="" type="checkbox"/>						
---------------------------------------	-------------------------------------	--	--	--	--	--	--

Evidence of Bats (Circle all that apply) Presence of one or more indicators is sufficient evidence that bats may be using the structure.

None

Visual (e.g. survey, thermal, emergent etc.) Guano Staining definitively from bats

• Live ___ number seen Odor Y/N

• Dead ___ number seen Photo documentation Y/N

Photo documentation Y/N

Audible

Assessment Conducted By: <u>Virginia Elynn</u> Signature(s): <u>Virginia Elynn</u>
District Environmental Use Only: Date Received by District Environmental Manager: _____

DOT Bat Assessment Form Instructions

1. Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges, regardless of whether assessments have been conducted in the past.
2. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has coordinated with the USFWS. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
3. Any questions should be directed to the District Environmental Manager.

APPENDIX D: Bridge/Structure Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside; from activities above that bore down to the underside; from activities that could impact expansion joints; from deck removal on bridges; or from structure demolition for bridges/structures within 1000 feet of suitable bat habitat.

DOT Project # 1500143	Water Body N/A	Date/Time of Inspection 10/24/18, 9:00AM	Within 1,000ft of suitable bat habitat (circle one) Yes <input checked="" type="radio"/> No <input type="radio"/>
--------------------------	-------------------	---	--

Route SK 39	County Hendricks	Federal Structure ID N/A
----------------	---------------------	-----------------------------

If the bridge/structure is 1,000 feet or more from suitable bat habitat (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check box and STOP HERE. No assessment required.

Please submit to the U.S. Fish and Wildlife Service.

Areas Inspected (Check all that apply)

Bridges	Culverts/Other Structures	Summary Info (circle all that apply)				
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	Crevices, rough surfaces or imperfections in concrete	<input checked="" type="checkbox"/>	Human disturbance or traffic under bridge/in culvert or at the structure	High	Low	None
All crevices >12" deep & not sealed	Spaces between walls, ceiling joists	<input checked="" type="checkbox"/>	Possible corridors for netting	None/poor	Marginal	Excellent
All guardrails						
All expansion joints						
Spaces between concrete end walls and the bridge deck						

Last Revised May 31, 2017

Vertical surfaces on concrete I-beams							
---------------------------------------	--	--	--	--	--	--	--

Evidence of Bats (Circle all that apply) Presence of one or more indicators is sufficient evidence that bats may be using the structure.

None

Visual (e.g. survey, thermal, emergent etc.)

- Live 2 number seen
- Dead number seen

Photo documentation Y N

Guano

Odor Y N

Photo documentation Y N

Staining definitively from bats

Photo documentation Y N

Audible

Assessment Conducted By: KENT ARRENDHOFF

Signature(s):



District Environmental Use Only: Date Received by District Environmental Manager: _____

DOT Bat Assessment Form Instructions

1. Assessments must be completed no more than 2 years prior to conducting any work below the deck surface on all bridges, regardless of whether assessments have been conducted in the past.
2. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has coordinated with the USFWS. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
3. Any questions should be directed to the District Environmental Manager.

From: [Kent L. Ahrenholtz](#)
To: [Gilyeat, Richard](#); [Prasad, Dandi](#)
Cc: [Virginia Flynn](#); [Molly Barletta](#)
Subject: RE: I-70/SR39 intersection improvement: bat presence inspection at old schoolhouse
Date: Monday, November 26, 2018 2:22:16 PM
Attachments: [image001.png](#)

Thanks, Richard!

Had meant to forward this onto Dandi last week when I received it from the Lochmueller Group...

We are going to proceed with the coordination with the USFWS and let them know that we'll forward the results of the guano testing once it's available from LG.

Let me know if you have any questions.

Thanks,
Kent

Kent L. Ahrenholtz, P.E.
Principal



Certified: WBE/DBE/WOSB/EDWOSB

812.455.1116 cell | 812.314.7041 office

KAhrenholtz@kaskaskiaeng.com

From: Gilyeat, Richard [mailto:RGilyeat@indot.IN.gov]
Sent: Monday, November 26, 2018 1:38 PM
To: Prasad, Dandi <Dandi.Prasad@wsp.com>
Cc: Kent L. Ahrenholtz <KAhrenholtz@kaskaskiaeng.com>
Subject: FW: I-70/SR39 intersection improvement: bat presence inspection at old schoolhouse

FYI

From: Yeager, Rusty [mailto:RYeager@lochgroup.com]
Sent: Tuesday, November 13, 2018 9:32 AM
To: Gilyeat, Richard <RGilyeat@indot.IN.gov>
Cc: Bowman, Sandra A <SBowman@indot.IN.gov>; Hilden, Laura <lhilden@indot.IN.gov>; Heistand, Kathy <KHEISTAND@indot.IN.gov>; Loy, Mary <MaLoy@indot.IN.gov>; Patrick Moore (PMoore@envsi.com) <PMoore@envsi.com>; DuPont, Jason <JDUPont@lochgroup.com>; Reust,

Brenten <BReust@lochgroup.com>; Langley, Sean <SLangley@lochgroup.com>

Subject: I-70/SR39 intersection improvement: bat presence inspection at old schoolhouse

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INDOT staff,

On Thursday, November 8, 2018, the Lochmueller Group conducted an on-site inspection of the old schoolhouse at 2227 E CR 1000 S, Clayton, Indiana for the I-70/SR39 (DES 1500143) in an attempt to identify the species of bat previously observed roosting under the eaves and gable of the structure circa October 24, 2018. From this effort, no bats were noted under the eaves, gable, or elsewhere on the structure. Photos of the staining under the eaves and gables, as well as general structure photos were taken. The two bat boxes attached to the tree behind the old schoolhouse were inspected, but no bats or signs of bat usage were noted.

On the small back porch (west side of building) a large amount of bat guano was found within the cracks of the decking board. No guano was observed within the grass under the eaves along the sides of the building. The age of the fecal material is unknown, but is presumed to have been there for possibly several weeks based on the weathered appearance. Although the material was degraded, a composite sample was collected in a vial containing RNAlater and shipped to the Northern Arizona University (NAU) School of Forestry and Center for Microbial Genetics and Genomics. This facility specializes in bat identifications using DNA material extracted and amplified from bat fecal material. If there is viable genetic material in the sample that is not too degraded, the NAU analysis will hopefully be able to provide the species of bat that has been roosting at the structure. It can sometimes take between 6 and 8 weeks to receive results from NAU depending on their work load; however, our NAU contact indicated it might be sooner since they do not have many requests at this time.

During our field investigation at the site, Tammy DeWitt (daughter of the property owners John and Linda Saunders) meet us at the schoolhouse to learn more about our interest in the bats at the structure. As a result of this discussion Ms. DeWitt informed us that bats were previously roosting in the attic of the building and that the owners contracted Critter Control to have them appropriately removed from the structure, as was authorized by IDNR. Entrance portals into the building were subsequently sealed to prevent reentry into the structure. She indicated that it was after this action that they noticed bats roosting under the eaves and gable of the building, likely because access to the interior was now denied. A subsequent inspection of the attic (presumably by Critter Control) in August indicated that bats were no longer present in the attic. We inquired as to if she recalled whether Critter Control noted what species of bat was present, but she indicated they only referred to them as brown bats, which was possibly just a generic response. We have subsequently made a request of her to provide us with a copy of the IDNR permit authorizing the removal and the Critter Control documentation for the removal and follow-up inspection. Ms. DeWitt indicated she has photos of the bats under the eaves, which we have also made a request for copies.

We will provide updates as additional information becomes available. Once we have all the information available on this matter, we will prepare a brief memo for distribution.

If this update and any subsequent information needs to be forwarded to Kaskaskia Engineering Group, LLC (Kent Ahrenholtz, Molly Barletta) and/or WSP (Dandi Prasad), let me know and I will add them to the coordination list.

Rusty Yeager

Senior Field Biologist - Associate

Lochmueller Group

6200 Vogel Road, Evansville, IN 47715

812.759.4163 | 812.499.1433 (mobile)

RYeager@lochgroup.com

<http://lochgroup.com>

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APPENDIX C

Water Resources

From: Todd, Kristi (INDOT) <KTodd1@indot.IN.gov>
Sent: Monday, October 29, 2018 10:07 AM
To: Virginia Flynn
Cc: Gilyeat, Richard; Mcgill, Justus; Prasad, Dandi; Molly Barletta
Subject: RE: Des. 1500143 - Revised Waters Report

Virginia,

Everything looks good in the waters report for DES 1500143/1592433; I approved. The final waters report will be placed in ProjectWise.

The information in the Waters Report should be used by the Designer to determine if Waters of the U.S. or wetlands will be impacted by the project. Avoidance and minimization must occur before mitigation will be considered. If mitigation is required, the Project manager or Designer must include the mitigation work in their project design, request Environmental Services to work on the mitigation, or include the mitigation work in the design contract (if the design of the project is let).

Kristi Todd

Team Lead, Ecology and Waterway Permitting

INDOT Environmental Services

100 N Senate Ave, Room 642

Indianapolis, IN 46204

Phone: (317) 234-8220

From: Virginia Flynn [mailto:VFlynn@kaskaskiaeng.com]
Sent: Monday, October 29, 2018 10:25 AM
To: Todd, Kristi (INDOT) <KTodd1@indot.IN.gov>
Subject: RE: Des. 1500143 - Revised Waters Report

****** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ******

Kristi,

Attached is the corrected Waters Report.

Thanks!

Virginia Flynn

Senior Environmental Scientist, PWS

Certified: WBE/DBE/WOSB/EDWOSB

618.233.5877 office

VFlynn@kaskaskiaeng.com

From: Todd, Kristi (INDOT) [mailto:KTodd1@indot.IN.gov]
Sent: Monday, October 29, 2018 7:28 AM

**Addendum to
WATERS DETERMINATION REPORT**

**SR 39/I-70 Interchange Modification Project
Hendricks County, Indiana
INDOT Des. No. 1500143**

**Original Waters Report: I-70 Added Travel
Lanes INDOT Des. 1592433**

Authored By:

**Kaskaskia Engineering Group, LLC
208 East Main Street, Suite 100
Belleville, IL 62220**

Prepared for:

**WSP USA
115 West Washington Street
Indianapolis, Indiana 46204**

October 29, 2018



TABLE OF CONTENTS

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2.0 OFFICE EVALUATION..... 1
3.0 FIELD RECONNAISSANCE..... 2
4.0 SUMMARY AND CONCLUSIONS..... 3
5.0 ACKNOWLEDGMENT 5
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LIST OF TABLES

- Table 1 - Soil Summary Table
- Table 2 - Stream Summary Table

EXHIBITS

- Exhibit A - Figures
 - Figure 1 – Project Location Map **Omitted. See Appendix A.**
 - Figure 2 – Investigated Area Boundaries
 - Figure 3 – National Wetland Inventory Map
 - Figure 4a and 4b - USGS Topographic Maps
 - Figure 5 – NRCS Soil Map
 - Figure 6 – Floodplain Map
 - Figure 7 – Water Resource Map
- Exhibit B - Photo Logs and Photo Orientation Maps
- Exhibit C - Pre-Jurisdictional Determination Form

WATERS OF THE U.S. DETERMINATION REPORT

SR 39 Interchange Improvement Project - Des. No. 1500143
Original Waters Report - I-70 Added Travel Lanes - Des. No. 1592433 (dated June 8, 2017)
Hendricks County
October 17, 2018

1.0 PROJECT INFORMATION

DATES OF WATERS FIELD INVESTIGATION:

Fieldwork was conducted on the following date: October 9, 2018.

CONTRIBUTORS:

Virginia Flynn, Senior Environmental Scientist, Kaskaskia Engineering Group, LLC (KEG)

PROJECT LOCATION:

Mooreville West Quadrangle
Section 36 of Township 14N, Range 1W
Hendricks County, Indiana

PROJECT DESCRIPTION:

The scope of work found in the original I-70 Added Travel Lanes (ATL) project (INDOT Des. 1592433) for the SR 39 over I-70 Bridge has changed, and requires an addendum to the Waters Report. The original improvement was to replace the bridge, widening to five lanes, and reconfiguring the ramps, while maintaining a standard diamond layout. Updated traffic data indicated higher traffic volumes and the investigation of additional interchange alternatives.

The proposed work for the new project (INDOT Des. 1500143) includes constructing a diverging diamond Interchange and replacing the existing bridge with two separate 2-span bridges. Additional widening will take place to the north of the ramps to match the existing road.

A project location map is provided in Exhibit A, Figure 1.

2.0 OFFICE EVALUATION

METHODOLOGY:

The new investigated area encompassed those areas outside the original Waters Report investigated area (see Exhibit A, Figure 2). A desktop review was conducted to identify areas likely to contain potential waters or Waters of the U.S. (streams, wetlands, ponds, etc.). This included a review of historic and recent aerial photography, National Wetland Inventory (NWI) mapping, historic and recent United States Geological Service (USGS) topographic mapping, and United States Department of Agriculture Natural Resource Conservation Service (USDA-NRCS) mapped soil units.

NWI MAPPING:

The NWI map was reviewed for the presence of potential jurisdictional wetlands in the vicinity of the new investigated area (Exhibit A, Figure 3). No NWI wetlands were present within the new investigated area. The closest wetland is 380 feet to the west and is classified as a Palustrine Forested wetland (PFO1A).

USGS MAPPING:

After a review of USGS topographic maps, no blue-line streams were identified within the new investigated area. Two dashed blue-line streams were identified adjacent to the new investigated area. These flow southeast into McCracken Creek (Exhibit A, Figures 4a and 4b).

MAPPED SOIL UNITS:

According to the USGS web soil survey Geographic Database (SSURGO) for Hendricks County, Indiana, the new investigated area contains one map unit with predominately hydric soils. In addition, several of the non-hydric soils that are present contain hydric inclusions. The Soil Summary Table (Table 1) details all soil units noted within the new investigated area. Maps showing the location of soil types are provided in Exhibit A, Figure 5.

Table 1. Soil Summary Table

Abbreviation	Name	Hydric Rating
Bs	Brookston silty clay loam	95
CrA	Crosby silt loam	2
CsB2	Crosby-Miami silt loam	3
MmB2	Miami silt loam, 2-6 percent slopes	5
MmC2	Miami silt loam, 6-12 percent slopes	3
Sh	Shoals silt loam	4

Source: USDA Web Soil Survey 2016

HYDROLOGY:

The project is located in the 8-digit watershed Hydrologic Unit Code [HUC] 05120201, which are all tributaries of White Lick Creek – a tributary of the White River. According to the Federal Emergency Management Agency (FEMA) no floodplains are located within the new investigated area. The closest floodplain is associated with McCracken Creek, approximately 2,000 feet to the southwest (see Exhibit A, Figure 6).

3.0 FIELD RECONNAISSANCE**METHODOLOGY:**

Fieldwork within the new investigated area was conducted on October 9, 2018. The investigated area was evaluated for the presence of streams, wetlands and other water resources. This footprint encompassed estimated areas of construction disturbance outside of the original investigated area. Resource maps showing all identified features within the investigated areas (original and new) are located in Exhibit A, Figure 7. Photographs and a photo direction map are included in Exhibit B.

STREAMS:

Streams were assessed for jurisdictional disposition Ordinary High Water Mark (OHWM) and relative quality. The OHWM measurements were taken at the widest non-scour hole location, outside of the influence of the structure.

One stream was found within the original investigated area that had not been surveyed during the original Waters Investigation. Unnamed Tributary 1 (UNT 1) flows east through a culvert under SR 39 on the north side of I-70. An OHWM, characterized by an absence of vegetation and shelving, was observed approximately 5 feet wide and 8 inches deep on the west side of SR 39.

The channel had no cover from trees. The dominant vegetation on the banks consisted of foxtail (*Setaria sp.*) and soybean crops. The stream has no riparian corridor. There was no visible water within the stream at the data collection point. The substrate at this location was predominantly sand and silt. UNT 1 flows into UNT to McCracken Creek 8 which flows into McCracken Creek. UNT 1 exhibited an OHWM and a defined bed and bank. Its primary source of hydrology appears to be drainage from the agricultural fields to the west. This stream is likely a jurisdictional Waters of the U.S.

WETLANDS:

The new investigated area was examined for the presence of vegetation, soil, and hydrological indicators that would signify the presence of wetlands. No wetlands were identified within the new investigated area.

ROADSIDE DITCHES:

Roadside ditches within the new investigated area were evaluated for consideration as jurisdictional or non-jurisdictional aquatic resources. All roadside ditches were determined to be excavated wholly in and draining only uplands and did not carry a relatively permanent flow of water. Additionally, none of them contained a dominance of wetland vegetation that extended outside the ditch-line. These are likely non-jurisdictional.

4.0 SUMMARY AND CONCLUSIONS

No NWI wetlands were found within new investigated area. Field observations of the new investigated area revealed the presence of one waterway that is likely a jurisdictional Waters of the U.S. No wetlands were found.

Four wetlands were found within the original field investigated area, as referenced in the previously approved report for Des. 1592433 (June 8, 2017). The USACE approved Jurisdictional Determination (October 11, 2018) verified that Wetland 6, 8, and 9 are jurisdictional “waters of the U.S.”. The USACE also verified Wetland 7 as isolated and not a “waters of the U.S.”. Wetlands 6, 7, 8, and 9 are all classified as temporarily flooded, palustrine emergent wetlands.

Every effort should be taken to avoid and minimize impacts to Waters of the U.S. and jurisdictional wetlands. If impacts are necessary, then mitigation may be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters ultimately made by the USACE and IDEM. This report is our best judgment based on the guidelines set forth by the USACE.

Table 2 - Stream Summary Table
SR 39 Interchange Modification Project, INDOT Des. No. 1500143, 1500145, and 1801428

ID	Coordinates		USGS Blue-Line (Y/N)	Riffles/ Pools (Y/N)	Substrate	OHWM Width (ft.)	OHWM Depth (in.)	Stream Quality	Estimated Amount of Aquatic Resources in Review Area (acres / linear feet)	Photo No.s	Likely Water of the U.S.?
	Latitude	Longitude									
UNT 1	39.617335	-86.480027	No	No	Silt, Sand	5	8	Low	0.04 ac. / 315 lf	13-20	Yes

5.0 ACKNOWLEDGMENT

This waters determination report has been prepared based on the best available information, interpreted in the light of the investigator's training, experience, and professional judgement in conformance with the 1987 *Corps of Engineers Wetlands Delineation Manual*, the appropriate regional supplement, the USACE *Jurisdictional Determination Form Instructional Guidebook*, and other appropriate agency guidelines.

Virginia Flynn

A handwritten signature in cursive script that reads "Virginia Flynn".

Senior Environmental Scientist, PWS
Kaskaskia Engineering Group, LLC.

6.0 REFERENCES

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service. FWS/OBS-79/31. Washington, DC.

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U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

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U.S. Fish and Wildlife Service. 2016. Wetlands Mapper, online at <http://www.fws.gov/wetlands/Data/Mapper.html>. [Accessed September 2016].

U.S. Geological Society. 1953-1956. USGS Historical Topographic Map Explorer, online at <http://historicalmaps.arcgis.com/usgs/>. [Accessed May-August 2016].

EXHIBIT A
FIGURES

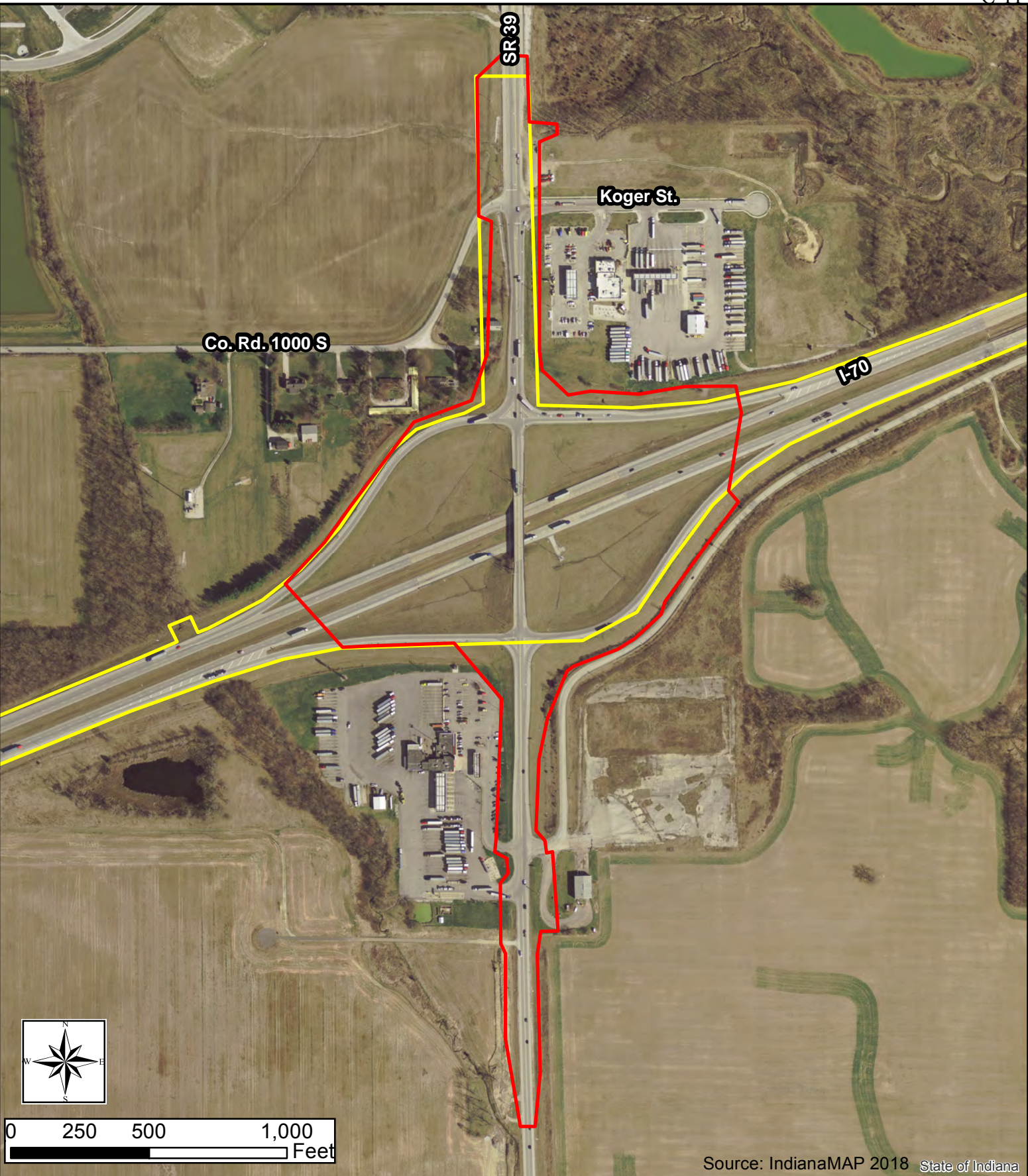
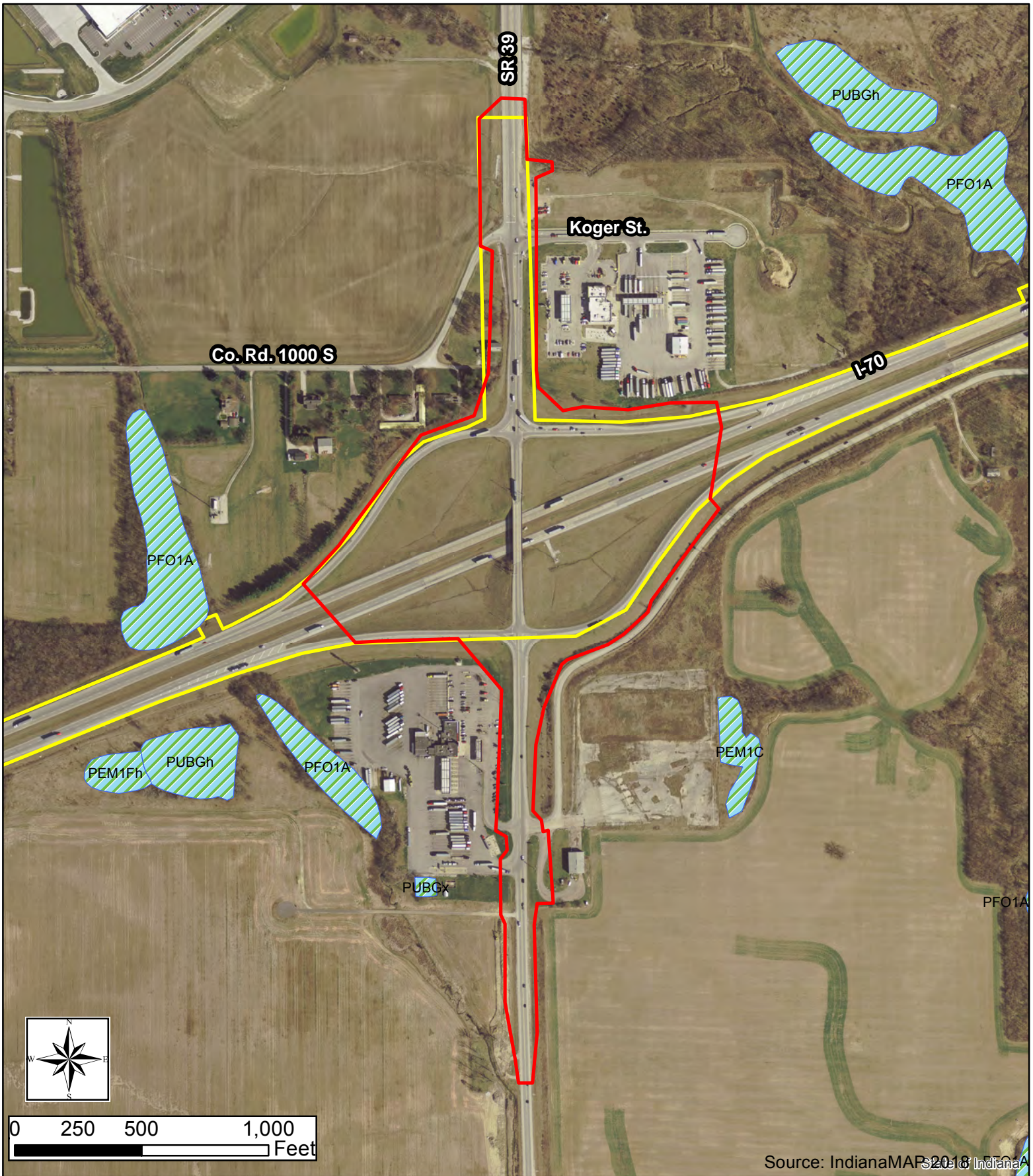


Figure 2
Investigated Area Map
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

- New Investigated Area
- Original Investigated Area








Source: IndianaMAP 2018 Indiana

Figure 3
NWI Map
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

Legend

-  NWI Wetlands
-  Original Investigated Area
-  New Investigated Area



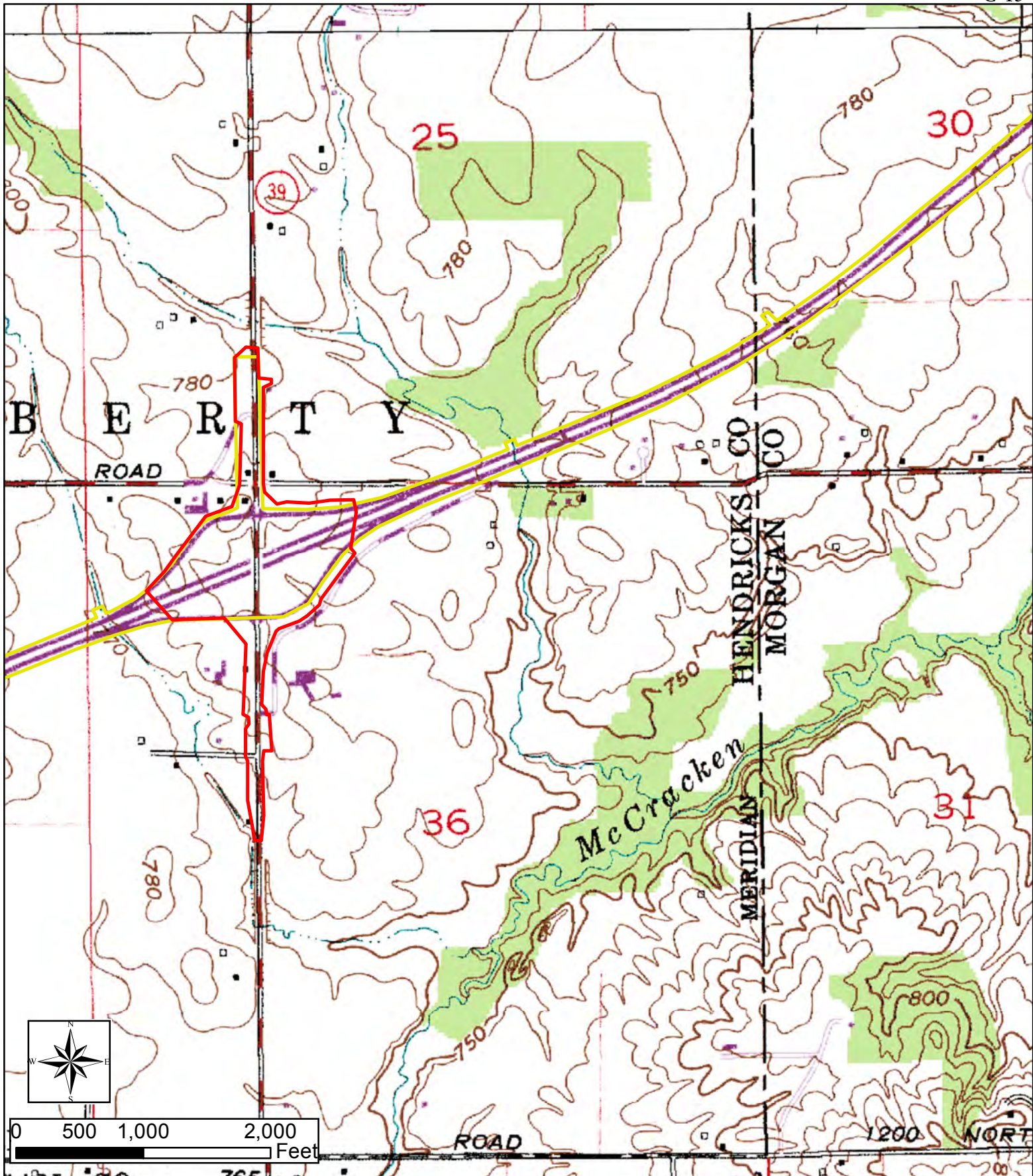


Figure 4a
USGS Topo Map
Mooresville West Quad
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

Legend

- Original Investigated Area
- New Investigated Area



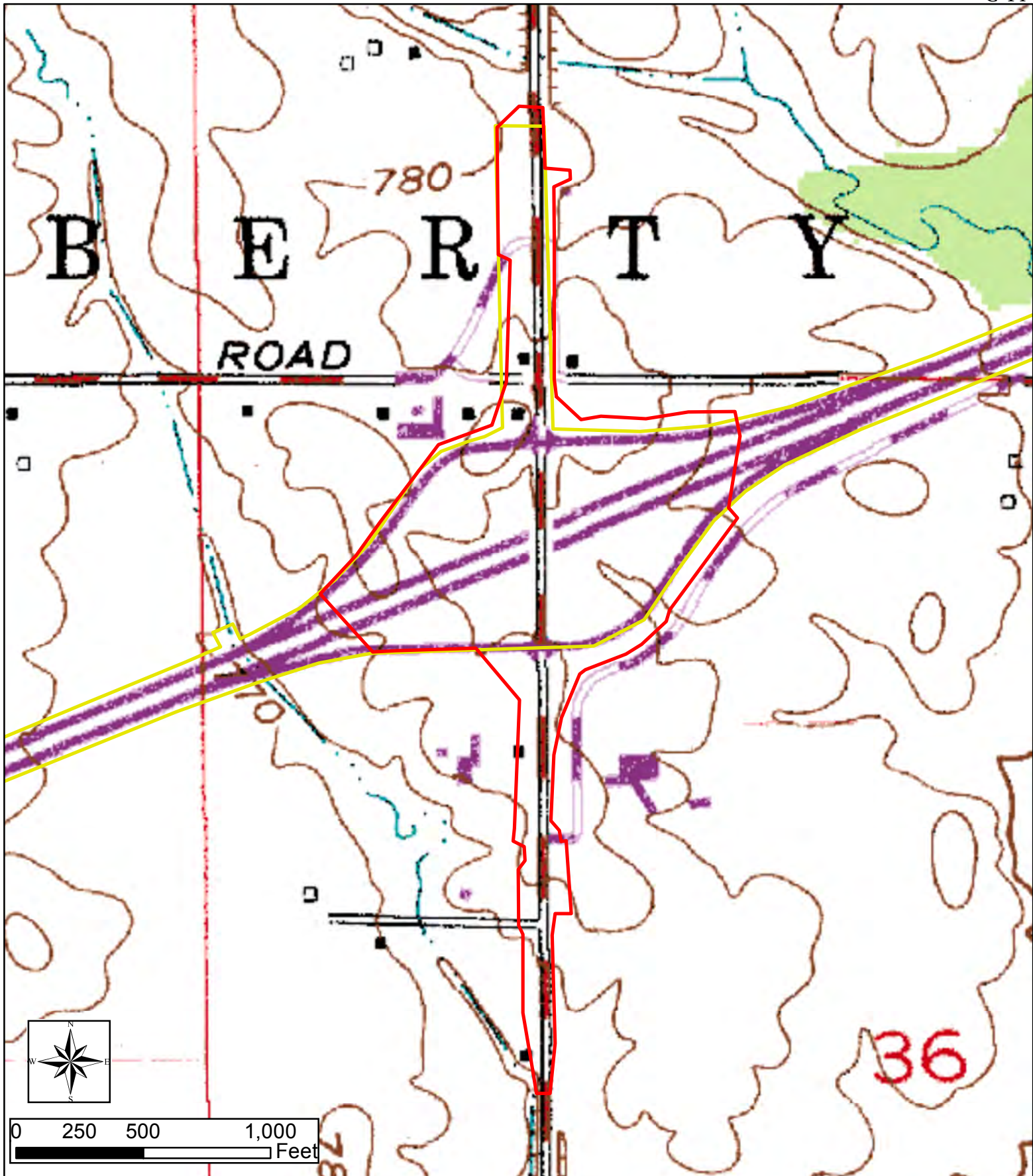


Figure 4b
USGS Topo Map
Mooreville West Quad
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

Legend

- Original Investigated Area
- New Investigated Area



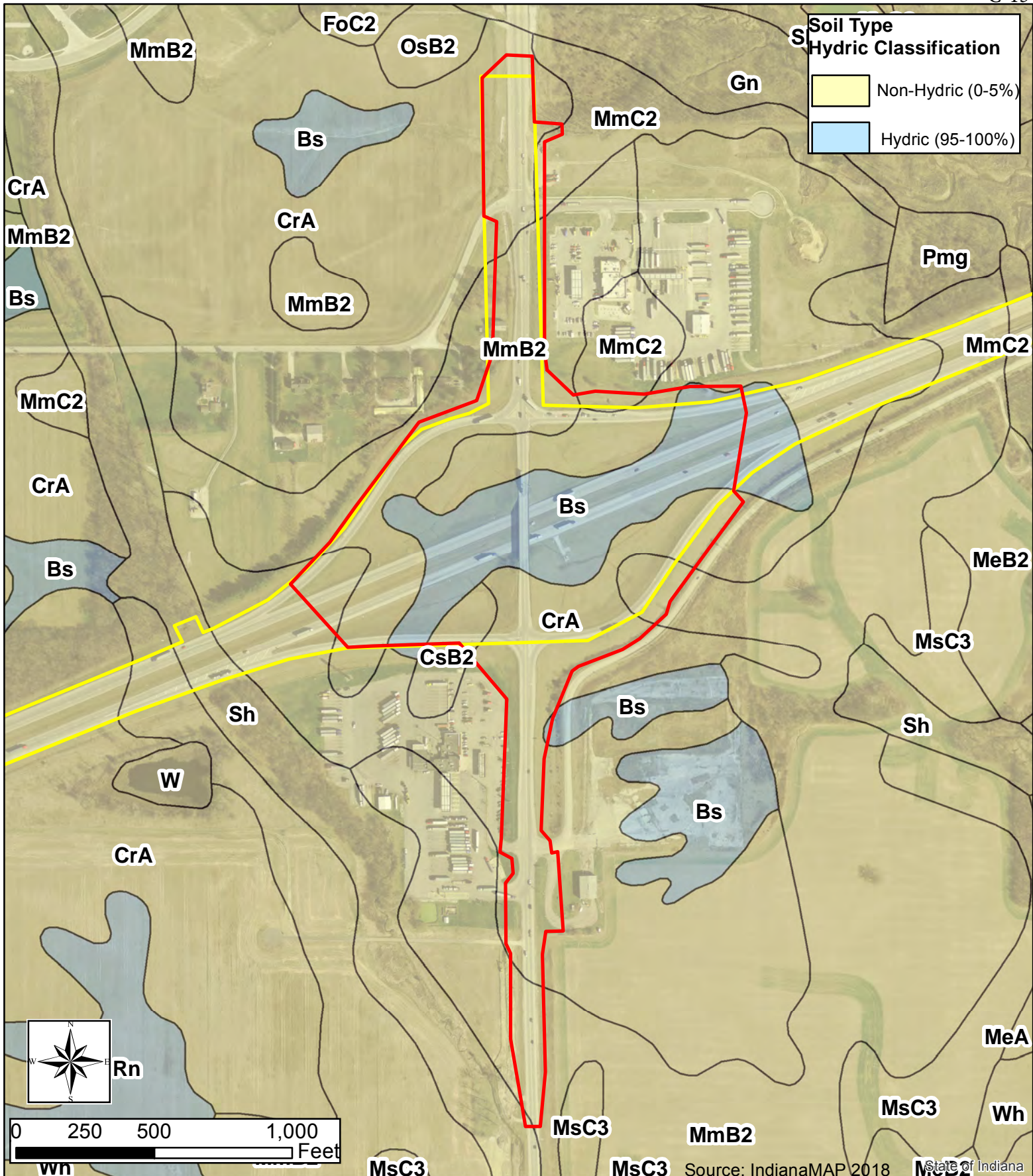


Figure 5
Soil Map
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

Legend

- Original Investigated Area
- New Investigated Area








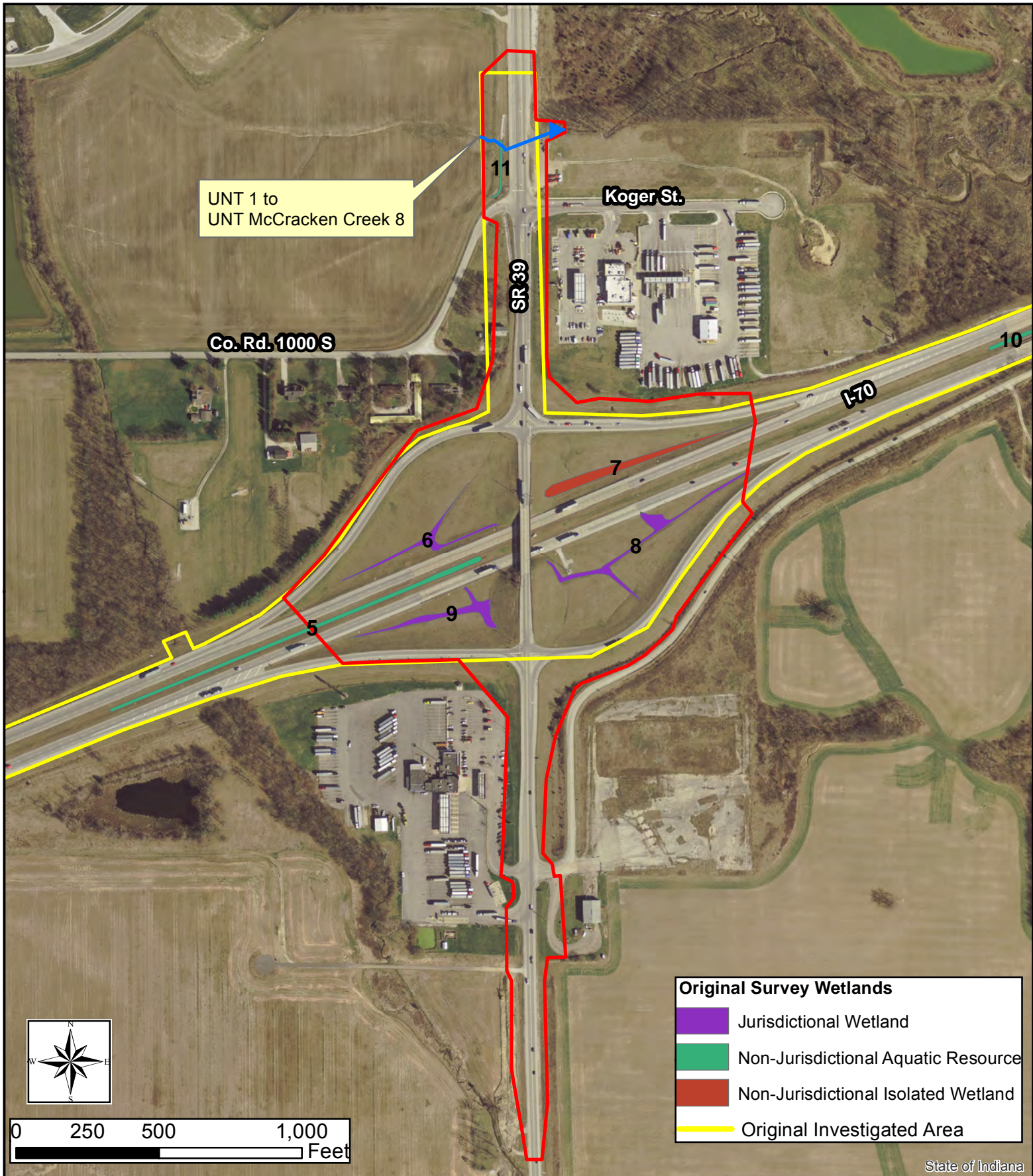
Source: IndianaMAP 2018 State of Indiana

Figure 6
100-Year Floodplain Map
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

Legend

-  Floodplains (FIRM IDNR IN May2015)
-  Original Investigated Area
-  New Investigated Area





UNT 1 to
UNT McCracken Creek 8

Co. Rd. 1000 S

Koger St.

SR 39

I-70



0 250 500 1,000
Feet

Original Survey Wetlands

- Jurisdictional Wetland
- Non-Jurisdictional Aquatic Resource
- Non-Jurisdictional Isolated Wetland
- Original Investigated Area

State of Indiana

Figure 7
Water Resource Map
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

Likely Jurisdictional Stream

New Investigated Area



EXHIBIT B
PHOTO LOGS AND PHOTO DIRECTIONAL MAPS

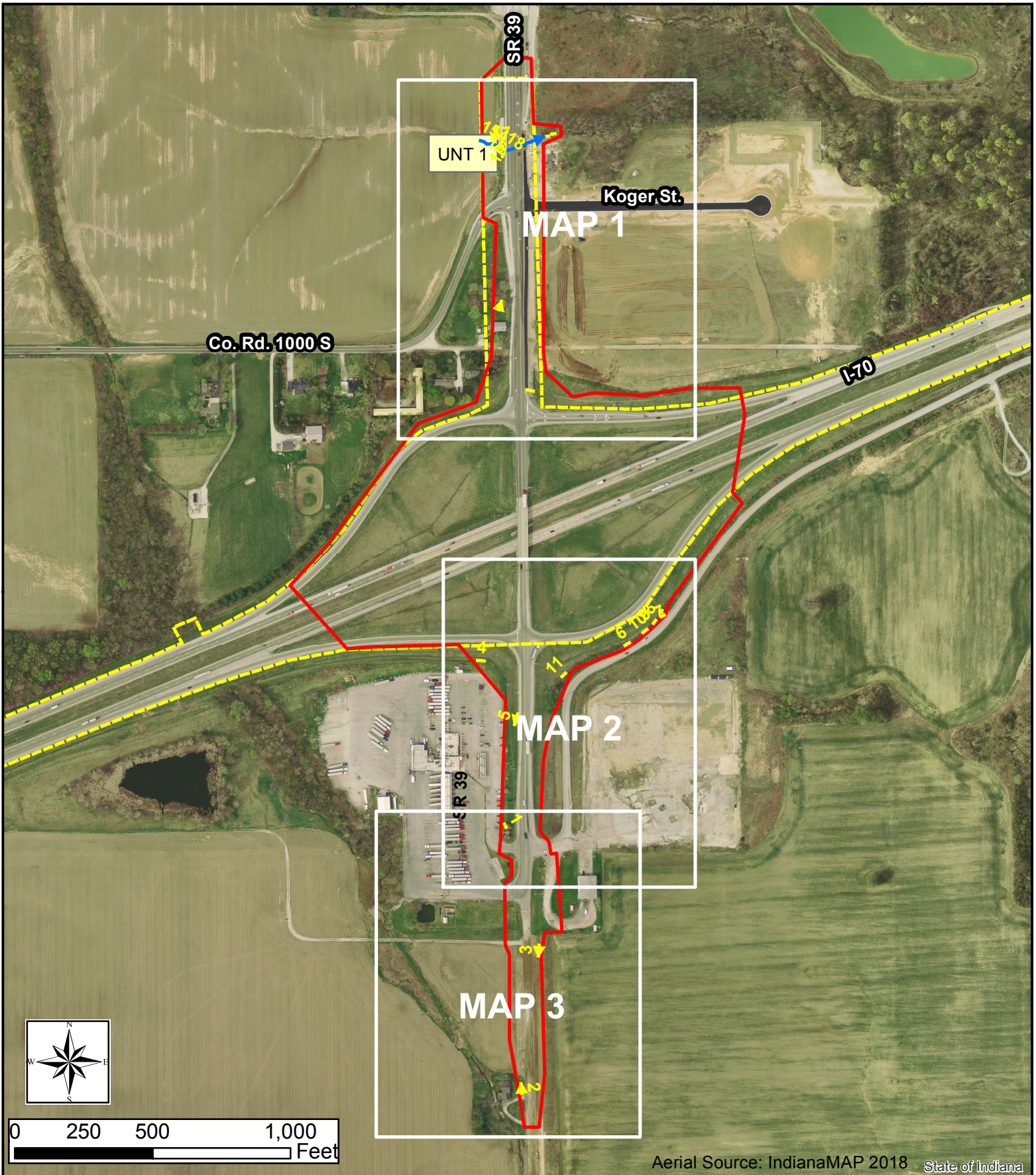






Photo Direction Map Overview
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

-  Photo Direction
-  Likely Jurisdictional Stream
-  New Investigated Area
-  Original Investigated Area



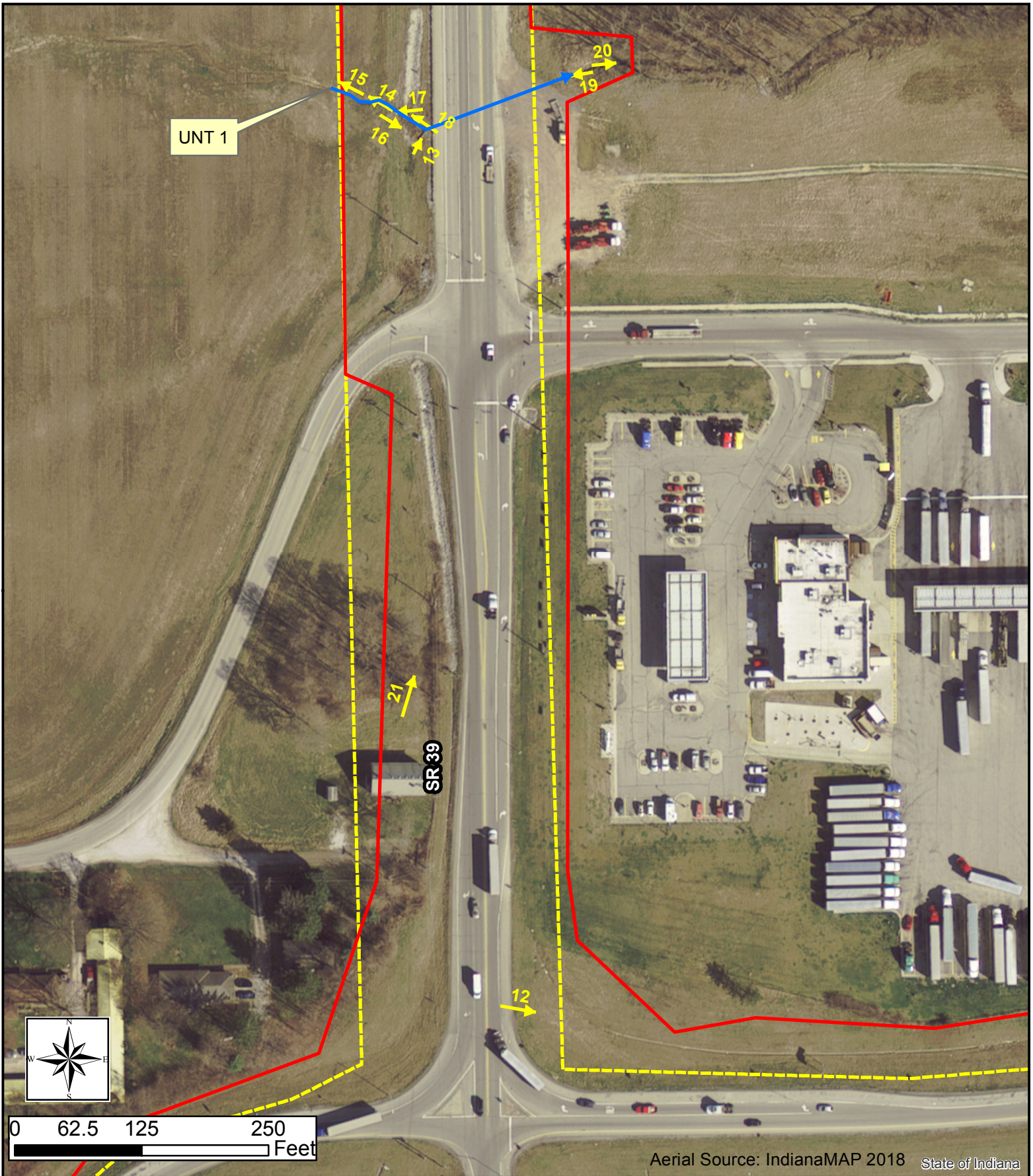




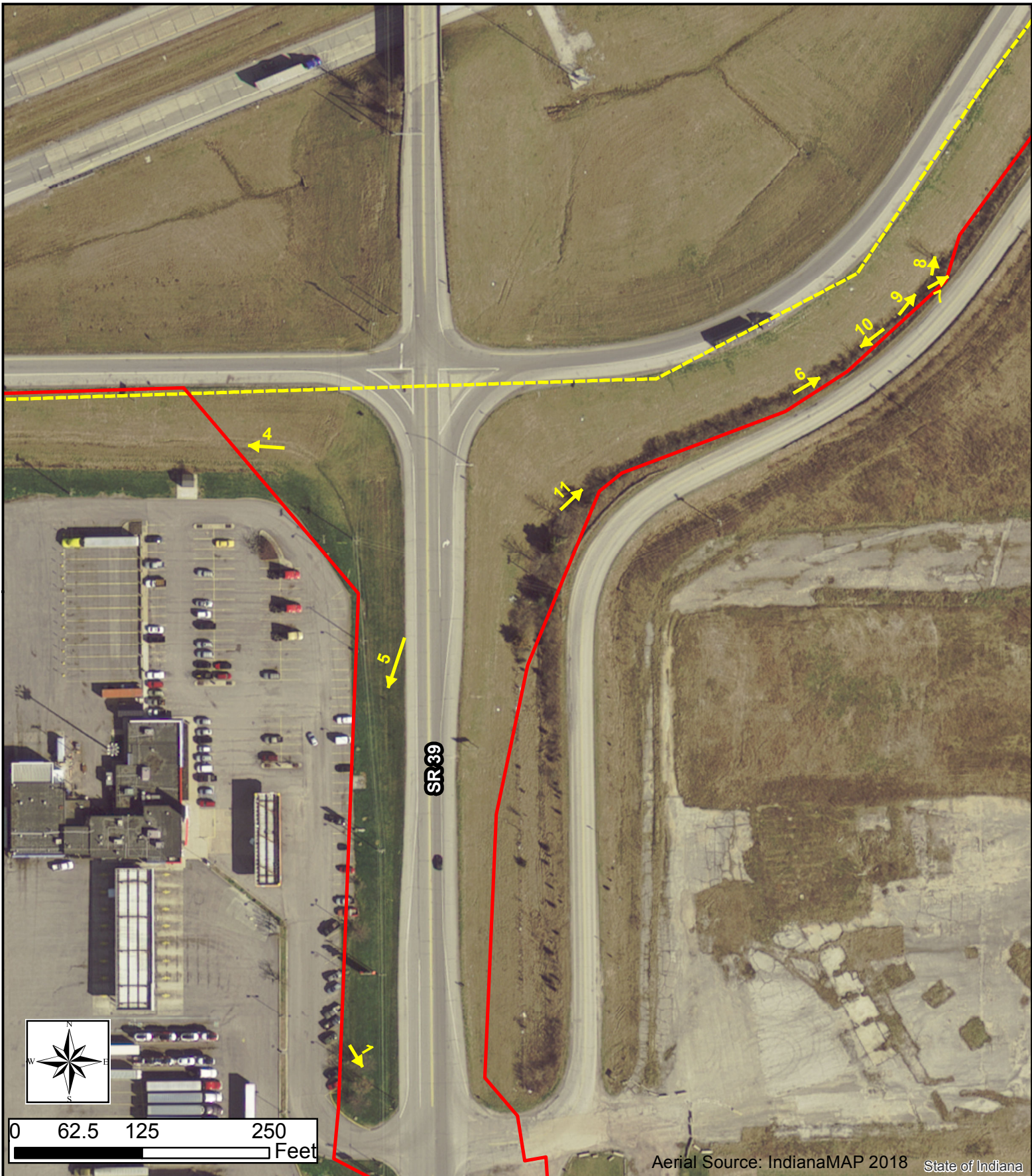


Photo Direction Map 1
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana





-  Photo Direction
-  Likely Jurisdictional Stream
-  New Investigated Area
-  Original Investigated Area





Aerial Source: IndianaMAP 2018 State of Indiana

Photo Direction Map 2
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana

-  Photo Direction
-  Likely Jurisdictional Stream
-  New Investigated Area
-  Original Investigated Area



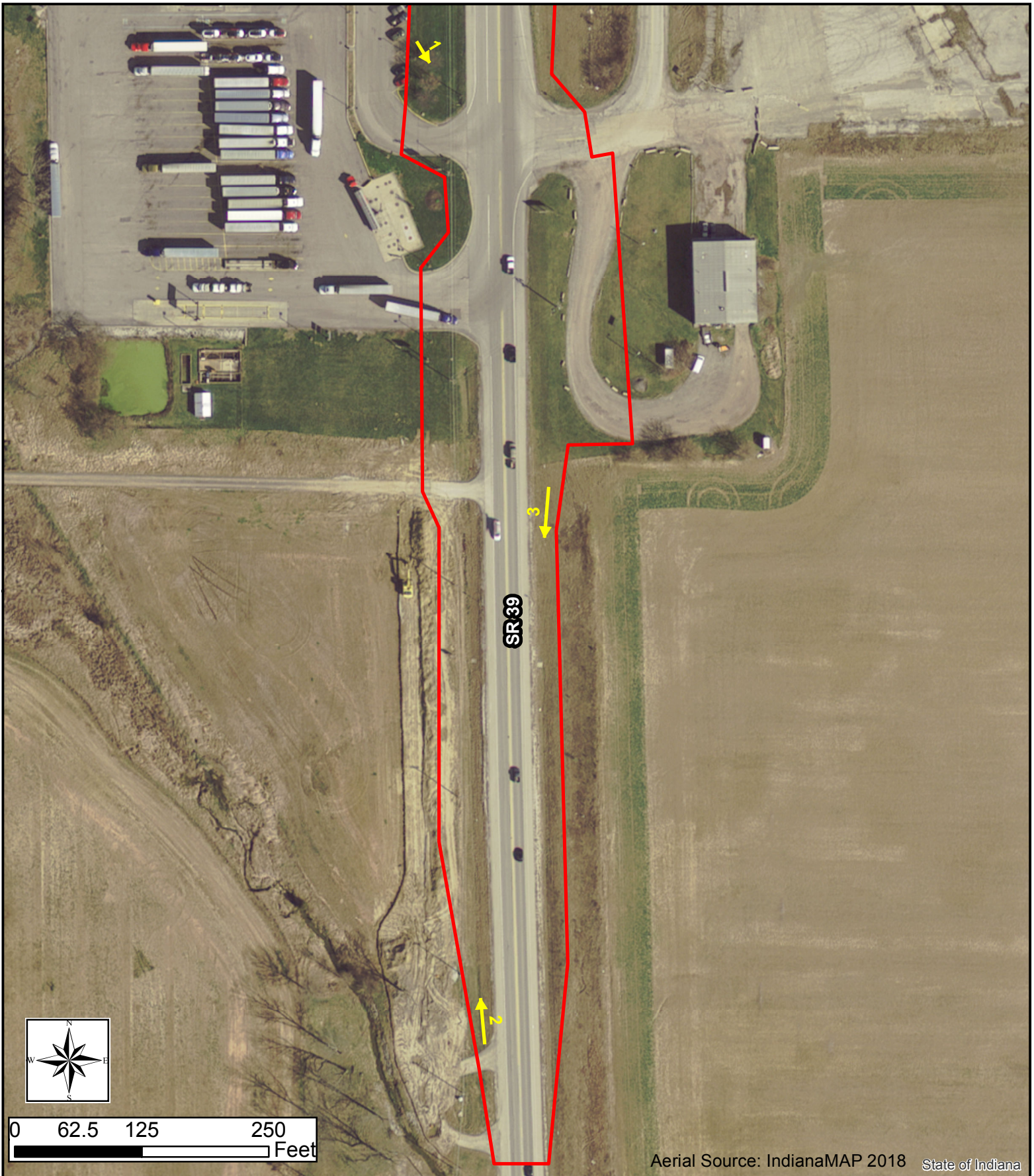


Photo Direction Map 3
SR 39 Interchange Modification
Des. No. 1500143
Hendricks County, Indiana





-  Photo Direction
-  Likely Jurisdictional Stream
-  New Investigated Area
-  Original Investigated Area



Photo Log

SR 39 Interchange Modification Project, INDOT Des. No. 1500143
Photos Taken: 10/09/18



1. Looking southeast at swale near SR 39 from south side of I-70.



2. Looking north at roadside ditch from south end of investigated area near SR 39.



3. Looking south at east road side along SR 39.



4. Looking west at roadside ditch along I-70 east bound exit ramp.



5. Looking southwest at roadside swale from SR 39 on south side of SR 39/I-70 interchange.



6. Looking northeast at roadside ditch south of east bound entrance ramp from SR 39 to I-70.

Photo Log

SR 39 Interchange Modification Project, INDOT Des. No. 1500143
Photos Taken: 10/09/18



7. Looking at culvert inlet draining under frontage road south of I-70.



8. Looking at culvert outlet draining from wetland 8 within southeast interchange area.



9. Looking northeast at roadside ditch south of east bound entrance ramp from SR 39 to I-70.



10. Looking southwest at roadside ditch south of east bound entrance ramp from SR 39 to I-70.



11. Looking northeast at roadside ditch south of east bound entrance ramp from SR 39 to I-70.



12. Looking east at roadside ditch lined with concrete. From north side of SR 39/I-70 Interchange.

Photo Log

SR 39 Interchange Modification Project, INDOT Des. No. 1500143
 Photos Taken: 10/09/18



13. Looking northeast at culvert inlet under SR 39 on north side of I-70.



14. Looking northwest at UNT 1 from west side of SR 39. Agricultural field with soybean crops on both sides.



15. Looking northwest at UNT 1 from west side of SR 39. Note absent vegetation.



16. Looking southeast at UNT 1 from west side of SR 39.



17. Looking northwest at bed/bank of UNT 1 from west side of SR 39.



18. Facing northwest in UNT 1 from west side of SR 39. Bank shelving on left.

Photo Log

SR 39 Interchange Modification Project, INDOT Des. No. 1500143
Photos Taken: 10/09/18



19. Looking southwest at UNT 1 and culvert outlet from east side of SR 39.



20. Looking east toward UNT 1 from east side of SR 39.



21. Looking northeast within wooded area on northwest side of SR 39/I-70 Interchange. Dominant tree species included *Morus sp.* (mulberry), *Celtis occidentalis* (hackberry), and *Ulmus americana* (American elm).

EXHIBIT C
PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD:

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: County/parish/borough: City:

Center coordinates of site (lat/long in degree decimal format):

Lat.: Long.:

Universal Transverse Mercator:

Name of nearest waterbody:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 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 AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) 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) 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) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (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 PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives 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 AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, 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. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "*may be*" waters of the U.S. and/or that there "*may be*" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: Figures 1-7
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report. Rationale: _____
- 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: 7.5' Mooresville West Quad
- Natural Resources Conservation Service Soil Survey. Citation: NRCS Web Soil Survey 2018
- National wetlands inventory map(s). Cite name: USFWS Wetland Mapper Online 2018
- State/local wetland inventory map(s): _____
- FEMA/FIRM maps: Firm Panel ID: 18063C0375D
- 100-year Floodplain Elevation is: _____ (National Geodetic Vertical Datum of 1929)
- Photographs:
 - Aerial (Name & Date): IndianaMAP Best Available
 - or Other (Name & Date): Site Photos (October 9, 2018)
- 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 staff member
completing PJD

Virginia Flynn 10-29-18
Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)¹

¹ Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

APPENDIX D

Air Quality

Indiana Department of Transportation (INDOT)
 State Preservation and Local Initiated Projects FY 2016 - 2019

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2016	2017	2018	2019
Comments: IMPO, added CN \$ to finish project.																	
38761 / 1500139	A 14	US 136		Small Structure Replacement	1.55 mi E of SR 267	Crawfordsville	0	NHPP	\$1,047,900.00	Bridge Consulting	PE	\$164,720.00	\$41,180.00	\$8,900.00	\$150,000.00	\$47,000.00	
Comments: IMPO, 16-IMPO-001 1st Qtr 2016 Amendment to IRTIP, PE FY 16 \$8,900, PE FY 17 \$150,000, PE FY 18 \$47,000																	
38767 / 1500106	A 04	SR 75		Small Structure Pipe Lining	1.35 mi S of US 136	Crawfordsville	0	STP		Bridge ROW	RW	\$20,000.00	\$5,000.00			\$25,000.00	
Comments: No MPO. Please add 25,000 NHS/State funds to RW FY 18																	
38767 / 1500106	A 11	SR 75		Small Structure Pipe Lining	1.35 mi S of US 136	Crawfordsville	0	STP	\$300,200.00	Bridge Consulting	PE	\$136,160.00	\$34,040.00	\$10,000.00	\$160,200.00		
Comments: No MPO, Add PE FY 16 \$10,000, PE FY 17 \$160,200																	
38767 / 1500106	A 12	SR 75		Small Structure Pipe Lining	1.35 mi S of US 136	Crawfordsville	0	STP	\$130,000.00	Bridge Consulting	PE	\$7,120.00	\$1,780.00	\$8,900.00			
Comments: No MPO, Add'l PE FY 16 \$8,900. Total PE FY 16 \$18,900																	
38768 / 1500122	A 04	US 40		Small Structure Replacement	3.00 mi E of SR 75	Crawfordsville	0	STP		Bridge ROW	RW	\$28,000.00	\$7,000.00			\$35,000.00	
Comments: No MPO. Please add 35,000 NHS/ State funds to RW for FY 18																	
38768 / 1500122	A 09	US 40		Small Structure Replacement	3.00 mi E of SR 75	Crawfordsville	0	STP		Bridge Consulting	PE	\$197,200.00	\$49,300.00	\$15,000.00	\$231,500.00		
Comments: No MPO, \$15,000 PE needed for FY 16.																	
38768 / 1500122	M 27	US 40		Small Structure Replacement	3.00 mi E of SR 75	Crawfordsville	0	STP		Bridge Consulting	PE	-\$12,000.00	-\$3,000.00	(\$15,000.00)			
Comments: No MPO, decreasing \$15,000 PE in FY16																	
38773 / 1500115	A 04	I 70		Small Structure Pipe Lining	0.02 mi W of SR 39	Crawfordsville	0	Interstate		Bridge ROW	RW	\$22,500.00	\$2,500.00			\$25,000.00	
Comments: No MPO. Please add interstate funds to RW for FY 18																	
38773 / 1500115	A 20	I 70		Small Structure Pipe Lining	0.02 mi W of SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$387,000.00	\$43,000.00			\$430,000.00	
										Bridge Consulting	PE	\$82,350.00	\$9,150.00		\$91,500.00		
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$82,350 federal & \$9,150 state PE in FY17; \$22,500 federal & \$2,500 state RW in FY18; \$387,000 federal & \$43,000 state CN in FY18																	
38773 / 1500115	A 24	I 70		Small Structure Pipe Lining	0.35 mi W of SR 39	Crawfordsville	0	NHPP		Bridge Consulting	PE	-\$82,350.00	-\$9,150.00		(\$91,500.00)		
Comments: Per IMPO Administrative Amendment 16-07.1 moving FY17 PE funds (\$91,500) to lead Des 1592433																	
38773 / 1500143	A 04	I 70		Interchange Modification	From 0.43 mi W of SR 39 to 0.47 mi E of SR 39	Crawfordsville	.904	Interstate		Mobility ROW	RW	\$135,000.00	\$15,000.00			\$150,000.00	
										Mobility Consulting	PE	\$220,500.00	\$24,500.00		\$245,000.00		

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Indiana Department of Transportation (INDOT)
 State Preservation and Local Initiated Projects FY 2016 - 2019

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2016	2017	2018	2019
Comments: Revise the NHS/State funds to Interstate																	
	38773 / 1500143	A 20	I 70	Interchange Modification	From 0.43 mi W of SR 39 to 0.47 mi E of SR 39	Crawfordsville	.904	NHPP		Road Consulting	PE	\$238,500.00	\$26,500.00		\$265,000.00		
Road Construction																\$2,875,000.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$459,000 federal & \$51,000 state PE in FY17; \$135,000 federal & \$15,000 state RW in FY18; \$2,587,500 federal & \$287,500 state CN in FY18																	
	38773 / 1500143	A 24	I 70	Interchange Modification	From 0.43 mi W of SR 39 to 0.47 mi E of SR 39	Crawfordsville	.904	NHPP		Mobility Consulting	PE	-\$459,000.00	-\$51,000.00		(\$510,000.00)		
Comments: Per IMPO Administrative Amendment 16-07.1 moving FY17 PE funds (\$510,000) to lead Des 1592433																	
	38773 / 1500145	A 20	SR 39	Br Repl, Comp.Cont.Steel Beam	SR 39 Bridge over I-70 EB/WB	Crawfordsville	0	NHPP		Bridge Consulting	PE	\$636,300.00	\$70,700.00		\$707,000.00		
Bridge Construction																\$5,825,000.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$636,300 federal & \$70,700 state PE in FY17; \$5,242,500 federal & \$582,500 state CN in FY18																	
	38773 / 1500145	A 24	SR 39	Br Repl, Comp.Cont.Steel Beam	SR 39 Bridge over I-70 EB/WB	Crawfordsville	0	NHPP		Bridge Consulting	PE	-\$636,300.00	-\$70,700.00		(\$707,000.00)		
Comments: Per IMPO Administrative Amendment 16-07.1 moving FY17 PE funds (\$707,000) to lead Des 1592433																	
	38773 / 1500646	A 24	SR 267	Bridge Deck Overlay	Bridge over I-70	Crawfordsville	0	NHPP		Bridge Consulting	PE	-\$36,000.00	-\$4,000.00		(\$40,000.00)		
Comments: Per IMPO Administrative Amendment 16-07.1 moving FY17 PE funds (\$40,000) to lead Des 1592433																	
	38773 / 1600384	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over Branch McCracken Creek EB 0.43m E SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$1,225,915.20	\$136,212.80			\$1,362,128.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$1,225,915 federal & \$136,213 state CN in FY18																	
	38773 / 1600385	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over Branch McCracken Creek WB 0.43 m E SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$1,225,915.20	\$136,212.80			\$1,362,128.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$1,225,915 federal & \$136,213 state CN in FY18																	
	38773 / 1600386	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over N Branch McCracken Creek EB 2.25m E SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$1,320,173.10	\$146,685.90			\$1,466,859.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$1,320,173 federal & \$146,686 state CN in FY18																	
	38773 / 1600388	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over N Branch McCracken Creek WB 2.25m E SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$1,320,173.10	\$146,685.90			\$1,466,859.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$1,320,173 federal & \$146,686 state CN in FY18																	
	38773 / 1600389	A 20	I 70	Small Structure Pipe Lining	I 70, 2.64 m E SR 39 EB	Crawfordsville	0	NHPP		Bridge Construction	CN	\$259,844.40	\$28,871.60			\$288,716.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$259,844 federal & \$28,872 state CN in FY18																	
	38773 / 1600394	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over W Fork White Lick Creek EB 4.33m E SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$1,697,365.80	\$188,596.20			\$1,885,962.00	

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Indiana Department of Transportation (INDOT)
State Preservation and Local Initiated Projects FY 2016 - 2019

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2016	2017	2018	2019
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$1,697,366 federal & \$188,596 state CN in FY18																	
	38773 / 1600395	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over W Fork White Lick Creek WB 4.33 m E SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$1,697,365.80	\$188,596.20			\$1,885,962.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$1,697,366 federal & \$188,596 state CN in FY18																	
	38773 / 1600396	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over White Lick Creek EB 1.08m W SR 267	Crawfordsville	0	NHPP		Bridge Construction	CN	\$2,168,856.00	\$240,984.00			\$2,409,840.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$2,168,856 federal & \$240,984 state CN in FY18																	
	38773 / 1600397	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over White Lick Creek WB 1.08m W SR 267	Crawfordsville	0	NHPP		Bridge Construction	CN	\$2,168,856.00	\$240,984.00			\$2,409,840.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$2,168,856 federal & \$240,984 state CN in FY18																	
	38773 / 1600398	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over Clark's Creek EB 0.50 m W SR 267	Crawfordsville	0	NHPP		Bridge Construction	CN	\$1,493,053.25	\$78,581.75			\$1,571,635.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$1,493,053 federal & \$78,582 state CN in FY18																	
	38773 / 1600399	A 20	I 70	Bridge Deck Replacement & Widening	I 70 over Clark's Creek WB 0.50m W SR 267	Crawfordsville	0	NHPP		Bridge Construction	CN	\$1,493,053.25	\$78,581.75			\$1,571,635.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$1,493,053 federal & \$78,582 state CN in FY18																	
	38773 / 1600404	A 20	SR 267	HMA Overlay Minor Structural	SR 267 & I-70 Interchange ramps	Crawfordsville	0	NHPP		Road Construction	CN	\$2,836,051.20	\$315,116.80			\$3,151,168.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$2,836,051 federal & \$315,117 state CN in FY18																	
	39318 / 1592818	A 14	SR 75	Bridge Thin Deck Overlay	MIDDLE FORK OF BIG WALNUT CREEK, 00.61 S SR 236	Crawfordsville	0	STP	\$110,350.00	Bridge Consulting	PE	\$7,480.00	\$1,870.00	\$9,350.00			
										Bridge Construction	CN	\$80,800.00	\$20,200.00				\$101,000.00
Comments: No MPO, Total PE FY 16 \$9,350, Total CN FY 19 \$101,000																	
	39318 / 1592820	A 14	SR 75	Bridge Deck Overlay	BRANCH OF BIG WALNUT CREEK, 1.55S SR 236	Crawfordsville	0	STP	\$560,000.00	Bridge Consulting	PE	\$0.00	\$46,400.00	\$46,400.00			
Comments: No MPO, Total PE FY 16 \$46,400, 100% state funds for PE																	
	39318 / 1592820	A 17	SR 75	Bridge Deck Overlay	Branch of Big Walnut Creek, 1.55S SR 236	Crawfordsville	0	STP	\$556,567.00	Bridge Construction	CN	\$408,133.60	\$102,033.40				\$510,167.00
Comments: No MPO, Add \$510,167 CN FY 19																	
	39327 / 1592844	A 20	US 40	HMA Overlay, Preventive Maintenance	From 0.66 mi W of SR 267 N jnctn to Marion County Line	Crawfordsville	4.943	NHPP		Road Construction	CN	\$2,174,112.00	\$543,528.00				\$2,717,640.00
										Road Consulting	PE	\$40,000.00	\$10,000.00		\$50,000.00		
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; Add NHPP \$40,000 federal & \$10,000 state PE in FY17; \$2,174,112 federal & \$543,528 state CN in FY19																	
	39364 / 1592772	A 20	I 74	Bridge Painting	CSX RR 3.62mi W I-465, EBL	Crawfordsville	0	NHPP		Bridge Consulting	PE	\$14,400.00	\$1,600.00		\$16,000.00		

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Indiana Department of Transportation (INDOT)
State Preservation and Local Initiated Projects FY 2016 - 2019

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2016	2017	2018	2019
Comments: NIRCC FY 16-19 TIP in cooperated into STIP 2016-2019 by reference July 1, 2016 for Transit Project																	
38749 / 1383246	A 04	US 20	HMA Overlay Minor Structural	From 1.99 mi. W of US 421 (Porter/LaPorte County Line) to US 421	LaPorte	2.015	NHPP	\$2,574,000.00	Road Consulting	PE	\$40,000.00	\$10,000.00			\$50,000.00		
										Road Construction	CN	\$160,000.00	\$40,000.00				\$200,000.00
Comments: CN phase FY2020.																	
38749 / 1383246	A 17	US 20	HMA Overlay Minor Structural	From 1.99 mi. W of US 421 (Porter/LaPorte County Line) to US 421	LaPorte	2.015	NHPP		Road Construction	CN	\$2,059,200.00	\$514,800.00				\$2,574,000.00	
										Road Consulting	PE	\$200,000.00	\$50,000.00			\$250,000.00	
Comments: Please amend FY18 CE/PE phase of \$250,000 and FY18 CN phase of \$2,574,000 into the current STIP. NIRPC Resolution 16-11 approved on 4/21/16.																	
38754 / 1500869	A 04	US 231	HMA Overlay, Preventive Maintenance	From 0.77 mile S of S Jct SR-157 to 8.27 miles S of W Jct of SR-46 See Log	Vincennes	9.453	NHPP		Road Consulting	PE	\$153,600.00	\$38,400.00	\$192,000.00				
										Road Construction	CN	\$1,681,600.00	\$420,400.00			\$2,102,000.00	
Comments: Amend FY 2016-2019 STIP to reflect FY 2016 PE phase for \$192,000 and FY 2018 CN phase for \$2,102,000. No MPO.																	
38757 / 1383597	A 17	US 35	HMA Overlay Minor Structural	From SR 16 to SR 14	LaPorte	14.51	NHPP	\$8,072,000.00	Road Consulting	PE	\$560,000.00	\$140,000.00				\$700,000.00	
Comments: Please amend FY18 PE phase of \$700,000 into the current STIP. No MPO.																	
38757 / 1500065	A 17	US 421	HMA Overlay Minor Structural	SR 26 to SR 18	LaPorte	9.874	NHPP	\$5,785,000.00	Road Consulting	PE	\$400,000.00	\$100,000.00				\$500,000.00	
Comments: Please amend FY18 PE phase of \$500,000 into the current STIP. No MPO.																	
38772 / 1593036	A 17	SR 28	HMA Overlay, Preventive Maintenance	US 52 E jct to 6.32 mi E of I 65	Crawfordsville	8.819	STP	\$3,600,000.00	Road Consulting	PE	\$40,000.00	\$10,000.00	\$50,000.00				
Comments: TCAPC MPO, Resolution T-16-03 Add \$50,000 PE FY 16																	
38773 / 1592433	A 20	I 70	Added Travel Lanes	From 0.76 mi W of SR 39 to 1.22 mi E of SR 267	Crawfordsville	7.612	NHPP		Major New - Consulting	PE	\$0.00	\$2,482,000.00	\$2,482,000.00				
										Road Construction	CN	\$54,054,897.30	\$6,006,099.70			\$60,060,997.00	
Comments: IMPO TIP Resolution # 16-IMPO-005; 2nd Quarter, 2016 INDOT 16-04; \$0 federal & \$2,482,200 state PE in FY16; Add NHPP \$54,054,897 federal & \$6,006,100 state CN in FY18																	
38773 / 1592433	A 24	I 70	Added Travel Lanes	From 2.73 mi W of SR 39 Hazelwood) to 2.40 mi E of SR 267 (Ronald Reagan)	Crawfordsville	10.128	NHPP		Mobility Consulting	PE	\$1,213,830.00	\$134,870.00	(\$1,374,830.00)	\$2,723,530.00			
										Mobility Construction	CN	\$2.70	\$0.30			\$3.00	
Comments: Per IMPO Administrative Amendment 16-07.1 changing \$1,375,000 PE in FY16 to FY17; moving all FY17 PE funds from subprojects in corridor to lead Des 1592433; 1500115 (\$91,500), 1500143 (\$510,000), 1500145 (\$707,000), 1500646 (\$40,000); Increasing by \$3 FY18 CN funding																	
38773 / 1600393	A 20	I 70	Small Structure Pipe Lining	I 70, 2.64 m E SR 39 WB	Crawfordsville	.03	NHPP		Bridge Construction	CN	\$259,844.40	\$28,871.60				\$288,716.00	

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2018	2019	2020	2021	
	38263 / 1500241	Init.	VA VARI	Bridge Inspections	Countywide Bridge Inspection and Inventory Program for Cycle Years 2018-2021	Crawfordsville	0	Multiple		Local Bridge Program	PE	\$272,928.00	\$0.00	\$144,384.00	\$7,968.00	\$111,072.00	\$9,504.00	
	38310 / 1500337	Init.	ST 1037	Intersect. Improv. W/ New Signals	Intersection of E 56th St and Wild Ridge Blvd	Crawfordsville	0	STP		Indianapolis MPO	CN	\$298,260.00	\$0.00			\$298,260.00		
										100% Local Funds	CN	\$0.00	\$35,594.30			\$35,594.30		
	38370 / 1500404	Init.	ST 1001	Other Intersection Improvement	Multiple locations in Brownsburg	Crawfordsville	0	Safety		Indianapolis MPO - PYB	CN	\$142,560.00	\$0.00	\$142,560.00				
										100% Local Funds	CN	\$0.00	\$18,220.00	\$18,220.00				
	38398 / 1500649	Init.	SR 75	Bridge Deck Overlay	2.91 mi S of US 36, bridge over CSX RR	Crawfordsville	0	NHPP		Bridge Construction	CN	\$579,200.00	\$144,800.00	\$724,000.00				
	38655 / 1296062	Init.	I 74	Bridge Deck Overlay	WB over Ross Ditch, 0.30 mi E of SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$385,200.00	\$42,800.00	\$428,000.00				
	38655 / 1500665	Init.	I 74	Bridge Deck Overlay	EB Bridge over Ross Ditch, 0.30 mi E of SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$363,600.00	\$40,400.00	\$404,000.00				
	38655 / 1592937	Init.	I 74	Bridge Deck Overlay	Hendricks CR 200 W over I-74, 1.71W SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$700,200.00	\$77,800.00	\$778,000.00				
	38768 / 1500122	Init.	US 40	Small Structure Replacement	3.00 mi E of SR 75	Crawfordsville	0	NHPP		Bridge ROW	RW	\$28,000.00	\$7,000.00	\$35,000.00				
										Bridge Construction	CN	\$887,200.00	\$221,800.00			\$1,109,000.00		
	38773 / 1500115	Init.	I 70	Small Structure Pipe Lining	0.35 mi W of SR 39	Crawfordsville	0	NHPP		Bridge Construction	CN	\$430,000.00	\$0.00	\$430,000.00				
										Bridge ROW	RW	\$22,500.00	\$2,500.00	\$25,000.00				
	38773 / 1500143	Init.	I 70	Interchange Modification	From 0.43 mi W of SR 39 to 0.47 mi E of SR 39	Crawfordsville	.904	NHPP		Mobility ROW	RW	\$135,000.00	\$15,000.00	\$150,000.00				
										Mobility Construction	CN	\$2,587,500.00	\$287,500.00	\$2,875,000.00				
	38773 / 1500145	A 02	SR 39	Br Repl, Comp.Cont.Steel Beam	SR 39 Bridge over I-70 EB/WB	Crawfordsville	0	STP	\$5,825,000.00	Bridge Construction	CN	\$4,660,000.00	\$1,165,000.00	\$5,825,000.00				
														Comments: IMPO 16-10 - INDOT - Q2 2017; Add \$5,825,000.00 FY18 CN funds				
	38773 / 1500646	A 02	SR 267	Bridge Deck Overlay	Bridge over I-70	Crawfordsville	0	STP	\$1,038,000.00	Bridge Construction	CN	\$831,200.00	\$207,800.00	\$1,039,000.00				
														Comments: IPMO Amendment 16-07.1 - FY18; Add \$1,039,000 FY18 CN funds				

Indiana Department of Transportation (INDOT)
State Preservation and Local Initiated Projects FY 2018 - 2021

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2018	2019	2020	2021
	38773 / 1600384	A 02	I 70	Bridge Deck Replacement & Widening	I 70 over Branch McCracken Creek EB 0.43m E SR 39	Crawfordsville	0	STP	\$1,377,000.00	Bridge Construction	CN	\$1,239,300.00	\$137,700.00	\$1,377,000.00			
Comments: TIP IMPO Amendment 16-04; Add \$1,377,000.00 CN FY18 funds																	
	38773 / 1600385	A 02	I 70	Bridge Deck Replacement & Widening	I 70 over Branch McCracken Creek WB 0.43 m E SR 39	Crawfordsville	0	NHPP	\$1,377,000.00	Bridge Construction	CN	\$1,239,300.00	\$137,700.00	\$1,377,000.00			
Comments: IMPO - 16-10 - INDOT - Q2 2017 - Add \$1,377,000.00 CN FY18 Funds																	
	38773 / 1600386	A 02	I 70	Bridge Deck Replacement & Widening	I 70 over N Branch McCracken Creek EB 2.25m E SR 39	Crawfordsville	0	NHPP	\$1,483,000.00	Bridge Construction	CN	\$1,334,700.00	\$148,300.00	\$1,483,000.00			
Comments: IMPO 16-10 - INDOT - Q2 2017 - Add \$1,483,000.00 CN FY18 Funds																	
	38773 / 1600388	A 02	I 70	Bridge Deck Replacement & Widening	I 70 over N Branch McCracken Creek WB 2.25m E SR 39	Crawfordsville	0	NHPP	\$1,483,000.00	Bridge Construction	CN	\$1,334,700.00	\$148,300.00	\$1,483,000.00			
Comments: IMPO 16-10 - INDOT - Q2 2017 - Add \$1,483,000.00 CN FY18 funds																	
	38773 / 1600389	A 02	I 70	Small Structure Pipe Lining	I 70, 2.35 m E SR 39 EB	Crawfordsville	0	NHPP	\$291,000.00	Bridge Construction	CN	\$261,900.00	\$29,100.00	\$291,000.00			
Comments: IMPO Amendment 16-04; Add \$291,000 CN FY18 funds																	
	38773 / 1600393	A 02	I 70	Small Structure Pipe Lining	I 70, 2.35 m E SR 39 WB	Crawfordsville	0	NHPP	\$288,716.00	Bridge Construction	CN	\$261,900.00	\$29,100.00	\$291,000.00			
Comments: IMPO Amendment 16-04; Add \$291,000 FY18 CN funds																	
	39318 / 1592818	Init.	SR 75	Bridge Thin Deck Overlay	Middle Fork of Big Walnut Creek, 00.61 S SR 236	Crawfordsville	0	NHPP		Bridge Construction	CN	\$80,800.00	\$20,200.00		\$101,000.00		
	39364 / 1592772	Init.	I 74	Bridge Painting	CSX RR 3.62 mi W I-465, EBL	Crawfordsville	0	NHPP		Bridge Construction	CN	\$162,000.00	\$18,000.00			\$180,000.00	
	39364 / 1592773	Init.	I 74	Bridge Painting	CSX RR 3.62 mi W I-465, WBL	Crawfordsville	0	NHPP		Bridge Construction	CN	\$162,000.00	\$18,000.00			\$180,000.00	
	39584 / 1601045	Init.	ST 1038	Safety Revisions	S Odell St from Tilden to Sycamore, Bulldog Dr. from US 136 Airport Rd	Crawfordsville	0	STP		100% Local Funds	CN	\$0.00	\$61,080.00			\$61,080.00	
										Indianapolis MPO	CN	\$549,720.00	\$0.00			\$549,720.00	
	39585 / 1601048	Init.	ST 1038	Intersection Improvement, Roundabout	Tilden and Odell Roundabout	Crawfordsville	0	STP		100% Local Funds	CN	\$0.00	\$561,200.00				\$561,200.00
										100% Local Funds	RW	\$0.00	\$570,000.00		\$570,000.00		
										Indianapolis MPO	CN	\$2,244,800.00	\$0.00				\$2,244,800.00
	39587 / 1601056	Init.	ST 1034	Intersection Improvement, Roundabout	Intersection of Hornaday Rd and Airport Road	Crawfordsville	0	STP		Indianapolis MPO	CN	\$2,300,000.00	\$0.00				\$2,300,000.00

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Indiana Department of Transportation (INDOT)
State Preservation and Local Initiated Projects FY 2018 - 2021

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2018	2019	2020	2021
Indiana Department of Transportation	38768 / 1500122	Init.	US 40	Small Structure Replacement	3.00 mi E of SR 75	Crawfordsville	0	NHPP		Bridge Construction	CN	\$887,200.00	\$221,800.00			\$1,109,000.00	
										Bridge ROW	RW	\$28,000.00	\$7,000.00	\$35,000.00			
Indiana Department of Transportation	38768 / 1500122	A 11	US 40	Small Structure Replacement with Bridge	3.00 mi E of SR 75	Crawfordsville	0	STP	\$1,232,190.00	Bridge Construction	CN	\$16,000.00	\$4,000.00	\$20,000.00			
Comments:No MPO; Add FY18 CN \$20,000																	
Indiana Department of Transportation	38773 / 1500115	Init.	I 70	Small Structure Pipe Lining	0.35 mi W of SR 39	Crawfordsville	0	NHPP		Bridge ROW	RW	\$22,500.00	\$2,500.00	\$25,000.00			
										Bridge Construction	CN	\$430,000.00	\$0.00	\$430,000.00			
Indiana Department of Transportation	38773 / 1500115	A 14	I 70	Small Structure Pipe Lining	0.35 mi W of SR 39	Crawfordsville	0	NHPP	\$420,000.00	Bridge Construction	CN	-\$32,379.30	-\$3,597.70	(\$60,977.00)	\$25,000.00		
Comments:No MPO; Add FY19 CN \$25,000																	
Indiana Department of Transportation	38773 / 1500143	Init.	I 70	Interchange Modification	From 0.43 mi W of SR 39 to 0.47 mi E of SR 39	Crawfordsville	.904	NHPP		Mobility Construction	CN	\$2,587,500.00	\$287,500.00	\$2,875,000.00			
										Mobility ROW	RW	\$135,000.00	\$15,000.00	\$150,000.00			
Indiana Department of Transportation	38773 / 1500145	A 02	SR 39	Br Repl. Comp.Cont.Steel Beam	SR 39 Bridge over I-70 EB/WB	Crawfordsville	0	STP	\$5,825,000.00	Bridge Construction	CN	\$4,660,000.00	\$1,165,000.00	\$5,825,000.00			
Comments:IMPO 16-10 - INDOT - Q2 2017; Add \$5,825,000.00 FY18 CN funds																	
Indiana Department of Transportation	38773 / 1500646	A 02	SR 267	Bridge Deck Overlay	Bridge over I-70	Crawfordsville	0	STP	\$1,038,000.00	Bridge Construction	CN	\$831,200.00	\$207,800.00	\$1,039,000.00			
Comments:IPMO Amendment 16-07.1 - FY18; Add \$1,039,000 FY18 CN funds																	
Indiana Department of Transportation	38773 / 1600384	A 02	I 70	Bridge Deck Replacement & Widening	I 70 over Branch McCracken Creek EB 0.43m E SR 39	Crawfordsville	0	STP	\$1,377,000.00	Bridge Construction	CN	\$1,239,300.00	\$137,700.00	\$1,377,000.00			
Comments:TIP IMPO Amendment 16-04; Add \$1,377,000.00 CN FY18 funds																	
Indiana Department of Transportation	38773 / 1600385	A 02	I 70	Bridge Deck Replacement & Widening	I 70 over Branch McCracken Creek WB 0.43 m E SR 39	Crawfordsville	0	NHPP	\$1,377,000.00	Bridge Construction	CN	\$1,239,300.00	\$137,700.00	\$1,377,000.00			
Comments:IMPO - 16-10 - INDOT - Q2 2017 - Add \$1,377,000.00 CN FY18 Funds																	
Indiana Department of Transportation	38773 / 1600386	A 02	I 70	Bridge Deck Replacement & Widening	I 70 over N Branch McCracken Creek EB 2.25m E SR 39	Crawfordsville	0	NHPP	\$1,483,000.00	Bridge Construction	CN	\$1,334,700.00	\$148,300.00	\$1,483,000.00			
Comments:IMPO 16-10 - INDOT - Q2 2017 - Add \$1,483,000.00 CN FY18 Funds																	
Indiana Department of Transportation	38773 / 1600388	A 02	I 70	Bridge Deck Replacement & Widening	I 70 over N Branch McCracken Creek WB 2.25m E SR 39	Crawfordsville	0	NHPP	\$1,483,000.00	Bridge Construction	CN	\$1,334,700.00	\$148,300.00	\$1,483,000.00			
Comments:IMPO 16-10 - INDOT - Q2 2017 - Add \$1,483,000.00 CN FY18 funds																	
Indiana Department of Transportation	38773 / 1600389	A 02	I 70	Small Structure Pipe Lining	I 70, 2.35 m E SR 39 EB	Crawfordsville	0	NHPP	\$291,000.00	Bridge Construction	CN	\$261,900.00	\$29,100.00	\$291,000.00			
Comments:IMPO Amendment 16-04; Add \$291,000 CN FY18 funds																	

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

APPENDIX E

Original CE Document

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

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

Road No./County: I-70/Hendricks, Morgan, Marion
Designation Number: 1592433
Project Description/Termini: The addition of travel lanes on I-70, west of Indianapolis, Indiana. The project limits include I-70 in Morgan County from the Hazelwood Road overpass to approximately 0.5 miles east of the Ronald Reagan Parkway overpass over I-70 in Marion County, for a length of approximately 10.8 miles.

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):

Table with 2 columns: Selection (X) and Description. Row 1: Categorical Exclusion, Level 2 - The proposed action meets the criteria for Categorical Exclusion Manual Level 2 - table 1, CE Level Thresholds. Row 2: Categorical Exclusion, Level 3 - The proposed action meets the criteria for Categorical Exclusion Manual Level 3 - table 1, CE Level Thresholds. Row 3: Categorical Exclusion, Level 4 - The proposed action meets the criteria for Categorical Exclusion Manual Level 4 - table 1, CE Level Thresholds. Row 4: Environmental Assessment (EA) - EAs require a separate FONSI.

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.

Approval section with signatures and dates for ESM and ES. Includes signature of Robert E. Dirks and date 2017.11.17 08:36:09 -05'00'.

Release for Public Involvement

Release for Public Involvement section with initials and dates for ESM and ES.

Certification of Public Involvement section with signature of Mary Wright and date 10/16/17.

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

INDOT ES/District Env. Reviewer Signature: [Signature] Date: 11-14-17
Name and Organization of CE/EA Preparer: Molly Barletta/Kaskaskia Engineering Group, LLC

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

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*?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If No, then:		
Opportunity for a Public Hearing Required?	<input checked="" 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 letters for field reconnaissance work were mailed to potentially affected property owners on April 19, 2016 and to additional property owners on October 19, 2016. The notice of survey list of recipients and sample letter are presented in Appendix G, pages 1-8, respectively.

A legal public notice describing the project and announcing the Section 106 Finding of "No Historic Properties Affected" was published in the Indianapolis Star newspaper and website on April 10, 2017. The public notice solicited comments regarding the project for a 30-day period, which expired May 15, 2017. Refer to Appendix D, page 57, for a copy of the Public Notice Affidavit. No public comments were received.

The proposed project met the minimum requirements described in the current Indiana Department of Transportation (INDOT) Public Involvement Manual 2012, which required the project sponsor to offer the public an opportunity to submit comments and/or request a public hearing. A legal public notice describing the project and the location where to review the draft CE was published in the Indianapolis Star newspaper on September 27, 2017 and October 4, 2017. The public notice solicited comments regarding the project for a 15-day period, which expired October 12, 2017. No requests for a public hearing occurred as a result of the notice; however, two comments were received via email, requesting the opportunity to discuss potential project coordination issues. A comment from the landowner at the northwest corner of the I-70 and SR 39 interchange resulted in a follow-up phone conversation with INDOT on October 4, 2017; whereby, INDOT further explained the status of the project and gained the support of the landowner on future project efforts. The other comment was from the Town of Plainfield requesting a meeting to discuss the project further. On October 4, 2017, INDOT and the Director of Transportation for the Town of Plainfield met at the Plainfield Municipal Building to discuss the project's updated phasing and re-scoping, as well as ideas the municipality would like to see incorporated into the project's phased work. No new commitments were determined as a result of the public notice and subsequent comments. Refer to Appendix G, pages 9-26, for a copy of the Public Notice Affidavit, comments, and INDOT responses to the comments.

Public Controversy on Environmental Grounds

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

Remarks:

To date, this project has not generated substantial public controversy concerning community or natural resource impacts.

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

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

Sponsor of the Project: Indiana Department of Transportation (INDOT) INDOT District: Crawfordsville
 Local Name of the Facility: I-70

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 this project is to improve traffic mobility and vehicular safety due to increasing traffic volumes to at least a level of service (LOS) of B.

The need is due to current and future capacity deficiencies and pavement deterioration. As documented in the *Indiana's 2013-2035 Future Transportation Needs Report* (INDOT, April 16, 2013), the project corridor is predicted to experience impending congestion and transportation demands that will considerably reduce the level of service (LOS) by 2035. Also, per the traffic analysis in the *Project Intent Report* (INDOT, November 5, 2013) for the project, traffic data was analyzed in 2011 using Highway Capacity Manual (HCM) methodology in Highway Capacity Software (HCS). Results of this analysis suggested an existing (2011) LOS of B, with a design year (2033) LOS of B and C without improvements. Furthermore, per current traffic data from INDOT:

- From SR 39 to SR 267, the current 2016 and design year 2036 average annual daily traffic (AADT) are 39,590 vehicles per day (vpd) and 45,550 vpd, respectively, with the design hour volume (dhv) being 3,200 vehicles per hour. This dhv translates into a LOS C. This area of I-70 is considered to be rural, and the minimally acceptable LOS is C. The conditions of LOS C, although not failing, are minimally acceptable and often perceived by the driver to be congested and stressful. This condition is worsened given the high volume of truck traffic on I-70 (34 percent AADT and 25 percent DHV). These conditions produce a higher percent time spent following, more passes due to the platooning effect of trucks, and a higher likelihood of not being able to travel at the desired speed. The construction of an added travel lane will increase safety, improve LOS to A, and enhance mobility to the travelling public along I-70. Further, the I-70 ramps at SR 39 are already inadequate with a LOS of E, and if no changes are made, will result in a LOS F in 2036. The interchange modification at SR 39 addresses this critical need.
- From SR 267 to Ronald Reagan Parkway, the current 2017 and design year 2037 AADT are 58,220 vpd and 67,890 vpd, respectively, with the dhv being 5,400 vehicles per hour. This dhv translates into a LOS B in 2017, but the LOS deteriorates to a LOS C in the design year 2037. This area of I-70 is considered urban and the minimally acceptable LOS is B. The truck traffic is significantly high (27 percent AADT and 17 percent DHV). These conditions produce a higher percent time spent following, more passes due to the platooning effect of trucks and a higher likelihood of not being able to travel at the desired speed. The construction of an added travel lane will increase safety, improve LOS to B in the design year 2037, and enhance mobility to the travelling public along I-70.

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Hendricks, Morgan, and Marion Municipality: N/A

Limits of Proposed Work: The project starts from approximately the Hazelwood Road overpass and extends east approximately 10.3 miles along I-70 to approximately 0.5-mile east of the Ronald Reagan Parkway overpass. The project limits extend approximately 2,000 feet to the north and south along State Route (SR) 39 at the I-70/SR 39 interchange.

Total Work Length: 10.8 Mile(s) Total Work Area: N/A Acre(s)

This is page 3 of 38 Project name: I-70 Added Travel Lanes Date: November 14, 2017

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

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

Yes¹	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
Date: _____	

¹If 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.

Project Location: The project starts on I-70 from approximately 0.8 mile west of SR 39 (Section 4, Township 13 North, Range 1 West) to 0.5 east of the Ronald Reagan Parkway overpass (Section 5, Township 14 North, Range 2 East). The project spans approximately 10.8 miles through three counties, Morgan, Hendricks, and Marion. Refer to Appendix B (B-1) for a Project Location Map. Land use in the vicinity of the project is typical of a rural interstate. Land uses include a dispersed mix of agricultural, residential, and commercial, with the exception of the area surrounding the Ronald Reagan Parkway/I-70 interchange. Land use in the vicinity of the Ronald Reagan Parkway/I-70 interchange includes dense commercial and industrial land uses, typical of a suburban interstate.

Existing Conditions: I-70 is classified as an Interstate and is part of the United States National Highway System. The posted speed limit is 70 mph through a majority of the project corridor; however, the speed limit decreases to 65 mph near the SR 267/I-70 interchange for the remainder of the corridor to the eastern project termini near the Ronald Reagan Parkway overpass. The existing cross section of I-70 from Hazelwood Road to SR 267 is four 12-foot travel lanes (two eastbound and two westbound), with 10-foot outside shoulders, 4-foot inside shoulders, and a 60-foot median. From SR 267 east to Ronald Reagan Parkway, the cross section is six 12-foot lanes (three eastbound and three westbound), with 10-foot outside shoulders, 4-foot inside shoulders, and a 36-foot median.

SR 39 is classified as a Major Collector. The posted speed limit is 45 mph. The existing cross section of SR 39 is two 12-foot travel lanes (one northbound, one southbound) with 10-foot outside shoulders and no median.

The pavement from the SR 39 interchange to the SR 267 interchange is in good condition, because of a pavement patching and functional overlay project completed in 2012-2013. The pavement from the SR 267 interchange to the Ronald Reagan interchange is in poor condition. The underdrains were replaced on the outside as part of this previous work, with the exception of the median underdrain system.

Refer to the *Roadway Character* section of this CE for a detailed description of the existing roadway conditions.

Proposed Project:

Engineering and Design: The proposed work includes adding two lanes in the median on I-70 from Hazelwood Road to SR 267 to create six 12-foot travel lanes (three eastbound and three westbound) with 10-foot shoulders and a 36-foot median; and adding two 12-foot lanes on the outside from SR 267 east to Ronald Reagan Parkway to make eight travel lanes (four eastbound and four westbound) with 10-foot shoulders and a 24-foot median (DES 1592433). The additional travel lanes are implicit to provide adequate shoulder widths and improved connectivity with auxiliary lanes. With the proposed added travel lanes project, various bridges and culverts in and along the project corridor will need work. These include:

- SR 39 over I-70 (039-32-05393A), bridge replacement [DES 1500145]
- I-70 bridges over Branch McCracken Creek (I70-60-05180), deck replacement and widening [DES 1600384-EB/1600385-WB]
- I-70 bridges over North Branch of McCracken Creek (I70-62-05181), deck replacement and widening [DES 1600386-EB/1600388-WB]
- I-70 bridges over West Fork White Lick Creek (I70-64-05182), deck replacement and widening [DES 1600394-EB/1600395-WB]
- I-70 bridges over White Lick Creek (I70-65-05183), deck maintenance project [DES 1600396-EB/1600397-WB]. Bridges identified as 'scour critical', and require Class 2 riprap along fill slopes and piers (approximately 200-foot). Debris removal also required.
- I-70 bridges over Clarks Creek (I70-66-05184), deck replacement and widening [DES 1600398-EB/1600399-WB]

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

- Culvert at unnamed tributary (UNT) McCracken 3 (CV I70-032-59.19), culvert liner [DES 1500115] Culvert at UNT McCracken 6B (CV I70-032-61.89B), culvert extension and liner, potential headwall [DES 1600393]
- Culvert at McCracken 6A (CV I70-032-61.89A), culvert extension, inlet headwall, and energy dissipater at outlet [DES 1600389]
- Culvert at McCracken 7 (CV I70-032-62.90), replace corrugated metal pipe arch (CMPA) with a reinforced concrete box culvert (RCBC)
- Culvert structure at mile marker (MM) 67.5, replace CMPA with circular CMP
- Culvert structure at MM 67.7, pipe extension

The SR 39/I-70 interchange will require reconfiguration of the ramp terminals (DES 1500143) and replacement of the SR 39 bridge over I-70 (DES 1500145). The interchange type will be determined in design with the goal of increasing capacity, safety, and limiting right-of-way (ROW) acquisition, and/or maintaining a LOS C or better at the ramp junctions. Interchange entrance and exit ramp locations will remain relatively close to their existing location, and no new entrance or exit points will be introduced as part of the design. SR 39 will be widened to four 12-foot lanes (two northbound and two southbound) with two 12-foot left turn lanes, and a 10-foot multi-use path on west side of the bridge and a 6-foot sidewalk on the east side of the bridge. SR 39 will be designed to tie in with existing sections of SR 39 on either side of the interchange. The proposed section of SR 39 will include 10-foot outside shoulders. This interchange is the only location where additional new permanent ROW is anticipated.

The SR 267 interchange will not require reconfiguration on the ramps or cross roads; however, the ramps are anticipated to require a dual lift pavement overlay and an additional ramp lane is proposed for construction for westbound I-70 to northbound SR 267 (DES 1600404). Also, identified as a maintenance project, the bridge deck joints will be replaced and the pier caps will require a FRP [Fiber Reinforced Polymers] wrap (DES 1500646).

Other supporting improvements include the following:

- The median underdrain system is deficient and will be replaced with the addition of the third travel lane between SR 39 and SR 267.
- The existing pavement on I-70 will be reconstructed from approximately 1-mile west of SR 267 to 0.5-mile east of Ronald Reagan Parkway (DES 1592433).
- Pavement rehabilitation at 15 different locations along I-70, between SR 39 and SR 267, within the existing lane configuration (DES 1592433).

Construction: Construction for this project is envisioned as a four-phased approach, rather than a single letting, under Contract R-38773. The four phases are as follows:

Phase ¹	DES	Description	Anticipated Letting ²
1	1500646	Maintenance of SR 267 over I-70	May 10, 2018
	1600396/1600397	Maintenance of I-70 Bridges over White Lick Creek	
2	1500143	SR 39 Interchange Modification	December 2018 thru March 2019 ²
	1500145	SR 39 Bridge Replacement	
	1500115	I-70 Small Structure Pipe Lining	
	1600389	I-70 Small Structure Pipe Lining	
	1600393	I-70 Small Structure Pipe Lining	
3	1592433	I-70 Pavement Reconstruction (1-mile west of SR 267 to 0.5 mile east of Ronald Reagan Parkway)	October 2018 thru February 2019
	1600404	Additional Ramp Lane Construction, WB I-70 to NB SR 267	
	1592433	Pavement Rehabilitation at 15 Locations along I-70	
4	1592433	I-70 Added Travel Lanes (ATL) (0.8-mile west of SR 39 to SR 267, including five bridge widenings)	TBD ³
	1600384/1600385	Maintenance of I-70 Bridges over Branch McCracken Creek	
	1600386/1600388	Maintenance of I-70 Bridges over North Branch of McCracken Creek	
	1600394/1600395	Maintenance of I-70 Bridges over West Fork White Lick Creek	
	1600398/1600399	Maintenance of I-70 Bridges over Clarks Creek	

¹ Phase 2 and Phase 3 are interchangeable.

² Assume ROW purchasing complete, utility constraints addressed, and permitting completed.

³ Dependent on funding.

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

Purpose and Need: The Preferred Alternative will meet the purpose and need of the project with the addition of a travel lane in each direction by addressing capacity and mobility issues within the project area. Traffic analyses suggest the addition of a third lane from SR 39 to SR 267 will improve LOS from C to an A. The addition of a fourth lane from SR 267 to Ronald Reagan Parkway would ensure the maintenance of a LOS B, which is the minimally acceptable LOS for that area. Ramps at I-70 and SR 39 are inadequate with a LOS of E, and could reach a LOS of F in 2036 if no changes are made. Overall, these improvements will ensure an acceptable LOS throughout the corridor.

Right-of-Way (ROW): Approximately 1.0 acre of permanent ROW will be acquired for the project, distributed over five parcels at the SR 39/I-70 interchange.

Maintenance of Traffic (MOT): In general, MOT within the I-70 project corridor will occur in two stages in each segment of this project. Between Hazelwood Road and SR 267, traffic will be shifted to the exterior lanes and shoulder to allow for construction of the interior third lane. Upon completion of the interior third lane, traffic would then be shifted to the inside to allow for work on the exterior lanes of I-70. Between SR 267 and Ronald Reagan Parkway, the two stages will be reversed, and traffic will be shifted to the interior lanes and shoulder and then the exterior lanes. The shoulders will need to be reinforced before any shift in traffic, and temporary crossovers will be required to maintain entrance and exit ramps within the project corridor.

The only bridge within the I-70 project corridor proposed for major reconfiguration is SR 39. The preliminary MOT plan for SR 39 will also occur in two stages. Traffic will use the existing two lanes on the bridge, while the three lane widening section is being constructed. Once the construction of the three lane widening section is complete, traffic will then use the newly completed three lane section and the existing two lanes on the bridge will be reconstructed.

It is anticipated two lanes of traffic will be maintained in each direction of I-70, and one lane in each direction along SR 39, during daytime construction hours. Options will be available for reduced lanes within the I-70 project corridor during nighttime construction hours, allowing the contractor the use of rolling closures, crossovers, and single lane traffic reductions.

Estimated Cost: Phases 1, 2, and 3 of the project (in 2018 dollars) are estimated to be \$50 million for construction, \$200,000 for ROW, and \$4 million for engineering; totaling approximately \$54.2 million. Cost for Phase 4 is estimated to be \$68 million for construction, and \$8 million for engineering (no ROW will be purchased); totaling approximately \$76 million.

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

OTHER ALTERNATIVES CONSIDERED:

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

ALTERNATIVE A: DO NOTHING (NO BUILD)

The "Do Nothing" alternative would have no project cost and no environmental impacts; however, this alternative would not address the capacity issues along this segment of I-70, which have unacceptable LOS for both existing and future traffic. Thus, the "Do Nothing" alternative was rejected because it does not meet the purpose and need of the project.

ALTERNATIVE B: OUTSIDE WIDENING

This alternative consists of adding a lane to the outside of the existing lane configuration the length of the project. This would meet the project's purpose and need, but was determined not to be a prudent alternative due to the project cost and impact to resources along the corridor. Therefore, this alternative was not considered further.

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 (Describe)

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

ROADWAY CHARACTER:

Functional Classification: I-70 (Rural): Freeway (SR 39 to SR 267)
 Current ADT: 41,926 VPD (2015) Design Year ADT: 52,922 VPD (2035)
 Design Hour Volume (DHV): 3,120 Truck Percentage (%) 35
 Designed Speed (mph): 70 Legal Speed (mph): 70

	Existing		Proposed	
Number of Lanes:	4 (2-EB; 2-WB)		6 (3-EB; 3-WB)	
Type of Lanes:	Travel		Travel	
Pavement Width:	12	ft.	12	ft.
Shoulder Width:	10' outer 4' inner	ft.	10' outer 10' inner	ft.
Median Width:	60	ft.	36	ft.
Sidewalk Width:	N/A	ft.	N/A	ft.

Setting: Urban Suburban Rural
 Topography: Level Rolling Hilly

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

Functional Classification: I-70 (Urban): Freeway (SR 267 to Ronald Reagan Parkway)
 Current ADT: 59,803 VPD (2015) Design Year ADT: 74,156 VPD (2035)
 Design Hour Volume (DHV): 4,920 Truck Percentage (%) 22
 Designed Speed (mph): 70 Legal Speed (mph): 70

Existing			Proposed		
Number of Lanes:	6 (3-EB; 3-WB)		8 (4-EB; 4-WB)		
Type of Lanes:	Travel		Travel		
Pavement Width:	12	ft.	12	ft.	
Shoulder Width:	10' outer 4' inner	ft.	10' outer 10' inner	ft.	
Median Width:	36	ft.	24	ft.	
Sidewalk Width:	N/A	ft.	N/A	ft.	

Setting: Urban Suburban Rural
 Topography: Level Rolling Hilly

Functional Classification: SR 39: Major Collector
 Current ADT: 14,764 VPD (2015) Design Year ADT: 18,307 VPD (2035)
 Design Hour Volume (DHV): 924 Truck Percentage (%) 25
 Designed Speed (mph): 60 Legal Speed (mph): 45

Existing			Proposed		
Number of Lanes:	2 (1-NB; 1-SB)		5 (2-NB; 2-SB; 1-two-way left turn lane)		
Type of Lanes:	Travel		Travel		
Pavement Width:	12	ft.	12	ft.	
Shoulder Width:	10	ft.	10	ft.	
Median Width:	N/A	ft.	N/A	ft.	
Sidewalk Width:	N/A	ft.	N/A	ft.	

Setting: Urban Suburban Rural
 Topography: Level Rolling Hilly

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

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

DESIGN CRITERIA FOR BRIDGES:

Structure/NBI Number(s): 039-32-05293A/013160 Sufficiency Rating: 52.6, 10/22/2015 Inspection Report
 (DES 1500145) (Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Steel Beam & RC Girder		Continuous Composite Prestressed Concrete Beam	
Number of Spans:	4		4	
Weight Restrictions:	36	ton	36	ton
Height Restrictions:	16.33	ft.	16.5	ft.
Curb to Curb Width:	33.3	ft.	83.33	ft.
Outside to Outside Width:	36.3	ft.	86.33	ft.
Shoulder Width:	4.67	ft.	11.67	ft.
Length of Channel Work:			N/A	

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

Remarks: SR 39 over I-70; Superstructure to be removed and replaced; SR 39 to be widened from two 12-foot lanes to five 12-foot lanes (two lanes in each direction, one two-way left turn lane). New structure will increase the bridge width to 86 ft.-4 in. The existing substructure to remain and widened for the new superstructure width.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Structure/NBI Number(s): I70-60-05180 CEBL/041780 Sufficiency Rating: 95.3, 9/14/2015 Inspection Report
 (DES 1600384) (Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Reinforced Concrete Slab		Continuous Composite Prestressed Concrete Beam	
Number of Spans:	3		3	
Weight Restrictions:	36	ton	36	ton
Height Restrictions:	N/A	ft.	N/A	ft.
Curb to Curb Width:	48.75	ft.	67.0	ft.
Outside to Outside Width:	51.75	ft.	70.0	ft.
Shoulder Width (Lt/Rt):	5.75/10.67	ft.	12.0/10.67	ft.
Length of Channel Work:			100.0	

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

Remarks: I-70 Eastbound over Branch McCracken Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 70 ft. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

Structure/NBI Number(s): I70-60-05180 JCWB/041790 Sufficiency Rating: 91.3, 9/14/2015 Inspection Report
 (DES 1600385) (Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Reinforced Concrete Slab	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	30 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	52.42 ft.	70.67 ft.
Outside to Outside Width:	55.42 ft.	73.67 ft.
Shoulder Width (Lt/Rt):	5.75/10.67 ft.	12.0/10.67 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Westbound over Branch McCracken Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 73 ft-8 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Structure/NBI Number(s): I70-62-05181 CEBL/041800 Sufficiency Rating: 86.3, 7/9/2015 Inspection Report
 (DES 1600386) (Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Reinforced Concrete Slab	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	26 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	39.67 ft.	57.67 ft.
Outside to Outside Width:	42.5 ft.	60.67 ft.
Shoulder Width (Lt/Rt):	5.83/9.83 ft.	12.0/9.67 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Eastbound over North Branch McCracken Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 60 ft. - 8 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

Structure/NBI Number(s): I70-62-05181 CWBL/041810 Sufficiency Rating: 86.3, 7/9/2015 Inspection Report
 (DES 1600388) (Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Reinforced Concrete Slab	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	26 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	39.67 ft.	57.67 ft.
Outside to Outside Width:	42.5 ft.	60.67 ft.
Shoulder Width (Lt/Rt):	5.83/9.83 ft.	12.0/9.67 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Westbound over North Branch McCracken Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 60 ft. - 8 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Structure/NBI Number(s): I70-64-05182 CEBL/041830 Sufficiency Rating: 96.1, 7/9/2015 Inspection Report
 (DES 1600394) (Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Reinforced Concrete Beam	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	38 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	39.67 ft.	58.0 ft.
Outside to Outside Width:	42.33 ft.	61.0 ft.
Shoulder Width (Lt/Rt):	5.58/10.08 ft.	12.0/10.0 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Eastbound over West Fork White Lick Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 61 ft. - 0 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and will be widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

Structure/NBI Number(s): I70-64-05182 CWBL/041840 Sufficiency Rating: 96.1, 7/9/2015 Inspection Report
 (DES 1600395) (Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Reinforced Concrete Beam	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	39 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	39.67 ft.	58.0 ft.
Outside to Outside Width:	42.33 ft.	61.0 ft.
Shoulder Width (Lt/Rt):	5.58/10.08 ft.	12.0/10.0 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Westbound over West Fork White Lick Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 61 ft. - 0 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Structure/NBI Number(s): I70-65-05183 BEBL/041870 Sufficiency Rating: 95.2, 2/5/2016 Inspection Report
 (DES 1600396) (Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Welded Steel Plate Girder	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	34 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	39.83 ft.	57.75 ft.
Outside to Outside Width:	42.5 ft.	60.75 ft.
Shoulder Width (Lt/Rt):	5.92/9.92 ft.	12.0/9.75 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Eastbound over White Lick Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 60 ft. - 9 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

Structure/NBI Number(s): I70-65-05183 BWBL/041880 Sufficiency Rating: 95.2, 2/5/2016 Inspection Report
 (DES 1600397)

(Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Welded Steel Plate Girder	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	34 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	39.83 ft.	57.75 ft.
Outside to Outside Width:	42.5 ft.	60.75 ft.
Shoulder Width (Lt/Rt):	5.92/9.92 ft.	12.0/9.75 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Westbound over White Lick Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 60 ft. - 9 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Structure/NBI Number(s): I70-66-05184 CEBL/041900 Sufficiency Rating: 90.9, 4/10/2014 Inspection Report
 (DES 1600398)

(Rating, Source of Information)

Existing Proposed

Bridge Type:	Continuous Reinforced Concrete Beam	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	45 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	39.83 ft.	58.0 ft.
Outside to Outside Width:	42.5 ft.	61.0 ft.
Shoulder Width (Lt/Rt):	5.92/9.92 ft.	12.0/10.0 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Eastbound over Clarks Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 61 ft. - 0 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

Structure/NBI Number(s): I70-66-05184 JCWB/041910 Sufficiency Rating: 83.7, 4/10/2014 Inspection Report
(DES1600399) (Rating, Source of Information)

Existing **Proposed**

Bridge Type:	Continuous Reinforced Concrete Beam	Continuous Composite Prestressed Concrete Beam
Number of Spans:	3	3
Weight Restrictions:	50 ton	36 ton
Height Restrictions:	N/A ft.	N/A ft.
Curb to Curb Width:	51.83 ft.	58.0 ft.
Outside to Outside Width:	54.5 ft.	61.0 ft.
Shoulder Width (Lt/Rt):	5.92/9.92 ft.	12.0/10.0 ft.
Length of Channel Work:		100.0 ft.

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

Remarks: I-70 Westbound over Clarks Creek; superstructure to be removed and replaced with a prestressed concrete beam superstructure. I-70 to be widened to provide one additional travel lane increasing the existing bridge width to 61 ft. - 0 in. Riprap will be added for scour countermeasure. Existing substructures to remain in place and widened towards the inside shoulder. Existing outside shoulder location to be maintained on bridge to prevent the substructure from requiring widening to the outside.

Will the structure be rehabilitated or replaced as part of the project? **Yes** **No** **N/A**

Culverts: Six (6) culverts will be replaced as a result of this project. These include:

- Culvert at UNT McCracken 6A (CV I70-032-61.89A) is located at I-70 mile marker 61.89 under eastbound lanes. There will be approximately 73 LFT of temporary impact and 58 LFT of permanent impact from the culvert extension, inlet end headwall, and installation of an energy dissipater at the outlet.
- Culvert at UNT McCracken 6B (CV I70-032-61.89B) is located at I-70 mile marker 61.89 under westbound lanes. There will be approximately 61 LFT of temporary impact and 46 LFT of permanent impact from culvert extension and liner (HDPE, CIPP, or Paved Invert) and potential headwall at inlet.
- Culvert at UNT McCracken 3 (CV I70-032-59.19) is located at I-70 mile marker 59.19. There will be approximately 332 LFT of temporary impact and 317 LFT of permanent impact from a culvert liner (either HDPE with new bored pipe or CIPP).
- Culvert at UNT McCracken 7 (CV I70-032-62.90) is located at I-70 mile marker 62.90. There will be approximately 281 LFT of temporary impact and 266 LFT of permanent impact from replacement of a 60-inch by 46-inch CMPA with a 14-foot by 5-foot RCBC.
- Culvert at UNT Guilford 1 (Culvert Str. at MM 67.5) is located at I-70 mile marker 67.5. There will be approximately 258 LFT of temporary impact and 243 LFT of permanent impact from replacement of a 42-inch by 29-inch CMPA with a 54-inch circular CMP.
- Culvert at UNT Guilford 2 (Culvert Str. at MM 67.7) is located at I-70 mile marker 67.7. There will be approximately 29 LFT of temporary impact and 14 LFT of permanent impact from a pipe extension.

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	Yes	No
Is a temporary bridge proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is a temporary roadway proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the project involve the use of a detour or require a ramp closure? (describe in remarks)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made for access by local traffic and so posted.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made for through-traffic dependent businesses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made to accommodate any local special events or festivals.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will the proposed MOT substantially change the environmental consequences of the action?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there substantial controversy associated with the proposed method for MOT?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks:

In general, MOT within the I-70 project corridor will occur in two stages in each segment of this project. Between Hazelwood Road and SR 267, traffic will be shifted to the exterior lanes and shoulder to allow for construction of the interior third lane. Upon completion of the interior third lane, traffic would then be shifted to the inside to allow for work on the exterior lanes of I-70. Between SR 267 and Ronald Reagan Parkway, the two stages will be reversed, and traffic will be shifted to the interior lanes and shoulder and then the exterior lanes (Appendix B, pages 10 to 35). The shoulders will need to be reinforced before any shift in traffic, and temporary crossovers will be required to maintain entrance and exit ramps within the project corridor.

It is anticipated two lanes of traffic will be maintained in each direction of I-70 during daytime construction hours. Options will be available for reduced lanes within the I-70 project corridor during nighttime construction hours, allowing the contractor the use of rolling closures, crossovers, and single lane traffic reductions.

The only bridge within the I-70 project corridor proposed for major reconfiguration is SR 39. It is anticipated that SR 39 will be closed to I-70 traffic at the I-70 interchange to allow for the replacement of the bridge over I-70. The official detour route for SR 39 traffic will be via SR 42, SR 267, I-70, and US 40.

Maintenance of traffic plans are preliminary at this stage, and as such the plans have not been coordinated with affected cities and counties. MOT design will be specified to meet certain requirements, but will not likely have a prescriptive design as room will be left for contractor innovation.

ESTIMATED PROJECT COST AND SCHEDULE:

<u>DES No.</u>	<u>Engineering (\$)</u>	<u>Right-of-Way (\$)</u>	<u>Construction (\$)</u>
1592433	3,830,700 (2016)	0	60,061,000 (2018)
1500115	0	25,000 (2018)	430,000 (2018)
1500143	0	150,000 (2018)	2,875,000 (2018)
1500145	0	0	5,825,000 (2018)
1500646	0	0	800,000 (2018)
1600384	0	0	1,362,128 (2018)
1600385	0	0	1,362,128 (2018)
1600386	0	0	1,466,859 (2018)
1600388	0	0	1,466,859 (2018)
1600389	0	0	288,716 (2018)
1600393	0	0	291,000 (2018)
1600394	0	0	1,885,962 (2018)
1600395	0	0	1,885,962 (2018)
1600396	0	0	2,409,840 (2018)
1600397	0	0	2,409,840 (2018)
1600398	0	0	1,571,635 (2018)
1600399	0	0	1,571,635 (2018)
1600404	0	0	3,151,168 (2018)

Indiana Department of Transportation

County Hendricks, Morgan, Marion Route I-70 Des. No. 1592433

Anticipated Start Date of Construction: Spring 2018

Date project incorporated into STIP July 3, 2017

Is the project in an MPO Area? **Yes** **No**

If yes,

Name of MPO Indianapolis Metropolitan Planning Organization

Location of Project in TIP See Appendix H

Date of incorporation by reference into the STIP July 3, 2017

RIGHT OF WAY:

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0.0	0.0
Commercial	1.0	0.0
Agricultural	0.0	0.0
Forest	0.0	0.0
Wetlands	0.0	0.0
Other:	0.0	0.0
Other:	0.0	0.0
TOTAL	1.0	0.0

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 there impacts on the environmental analysis should be discussed.

Remarks:

Approximately 1.0 acre of permanent ROW is anticipated to be required along SR 39, north of the I-70 interchange, on both the east and west side of the roadway. On the west side of SR 39, the limits of ROW acquisition would extend approximately 650 feet north of the westbound I-70 ramp terminals to County Road (CR) 1000 S. On the east side of SR 39, the limits of ROW acquisition would extend approximately 1,200 feet north of the westbound I-70 ramp terminals. No advanced acquisition or reacquisition of ROW will be required.

The existing ROW along SR 39 in this area varies from a minimum total width of 105 feet to a maximum total width of 140 feet. The proposed acquisition would provide for a minimum of 155 feet to a maximum of 175 feet of total ROW width.

The current land use on the west side of SR 39 in this area appears to be residential, but is zoned for commercial use. The current land use on the east side of SR 39 in this area is commercial with an existing truck stop located on the property.

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

SECTION A – ECOLOGICAL RESOURCES

	Presence	Impacts	
		Yes	No
Streams, Rivers, Watercourses & Jurisdictional Ditches	X	X	
Federal Wild and Scenic Rivers			
State Natural, Scenic or Recreational Rivers			
Nationwide Rivers Inventory (NRI) listed			
Outstanding Rivers List for Indiana			
Navigable Waterways			

Remarks:

A review of topographic maps and aerial photography by Kaskaskia Engineering Group, LLC (KEG) on May 5, 2016 shows five streams with bridge crossings and fourteen streams with small structure (culvert) crossings within the project limits. A site visit conducted on July 12, 2016 by CJSeto Support Services, LLC (CJS) staff confirmed these streams, and made determinations of the presence of an ordinary high water mark (OHWM). A Waters of the US Report was submitted to INDOT Ecology and Waterway Permitting Office (EWPO) on October 7, 2016 and approved by INDOT EWPO on March 15, 2017 (Appendix F). The streams are summarized below.

Streams with Bridge Crossings:

Five streams with bridge crossings are located within the project limits. None of these streams were listed as a Federal Wild and Scenic River; Indiana Natural, Scenic or Recreational River; Nationwide Rivers Inventory River; or Indiana Outstanding River. Also, none of these are considered a Navigable Waterway, per the U.S. Coast Guard's Designated Section 10 Navigable Waterway List.

Work within these streams is expected to be limited to the placement of riprap for scour protection and the extension of bridge piers to accommodate the added travel lanes. Both temporary and permanent stream impacts are expected with construction activities at each bridge. These five streams and linear impacts are described further as follows and in the Waters of the US Report (Appendix F):

- Clarks Creek Bridge (Str. I70-66-05184 CEBL & JCWB) is located 0.5 mile west of SR 267. Clarks Creek had a Qualitative Habitat Evaluation Index (QHEI) score of 55.5 (fair quality) (Appendix F). There will be approximately 200 linear feet (LFT) of temporary impact and 150 LFT of permanent impact (350 LFT total) from extending internal portions of the EB and WB bridge decks and piers, and adding riprap for scour countermeasure.
- UNT McCracken Creek 8 (Branch McCracken Creek) (Str. I70-60-05180 CEBL & JCWB) is located 0.43 mile east of SR 39. UNT McCracken Creek 8 had a QHEI score of 72, which supports the determination of good quality (Appendix F). There will be approximately 200 LFT of temporary impact and 155 LFT of permanent impact (355 LFT total) from extending internal portions of the EB and WB bridge decks and piers, and adding riprap for scour countermeasure.
- I-70 over White Lick Creek (Str. 170-065-05183 BEBL & BWBL) is located 1.08 miles west of SR 267. White Lick Creek had a QHEI score of 62.5 (good quality) (Appendix F). There will be approximately 200 LFT of temporary impact and 165 LFT of permanent impact (365 LFT total) from extending internal portions of the EB and WB bridge decks and piers, and adding riprap for scour countermeasure.
- UNT McCracken Creek 9 (North Branch of McCracken Creek) (Str. I70-62-05181 CEBL & CWBL) is located 2.25 miles east of SR 39. UNT McCracken Creek 9 had a QHEI score of 54 (fair quality) (Appendix F). There will be approximately 200 LFT of temporary impact and 140 LFT of permanent impact (340 LFT total) from extending internal portions of the EB and WB bridge decks and piers, and adding riprap for scour countermeasure.
- I-70 over West Fork of White Lick Creek (Str. 170-64-5182 CEBL & CWBL) is located 4.33 miles east of SR 39. West Fork White Lick Creek had a QHEI score of 57.5 (fair quality) (Appendix F). There

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will be approximately 200 LFT of temporary impact and 200 LFT of permanent impact (400 LFT total) from extending internal portions of the EB and WB bridge decks and piers, and adding riprap for scour countermeasure.

Streams with Small Structure Crossings:

Fourteen streams with small structure crossings exist within the project limits. None of these water features were listed as a Federal Wild and Scenic River; Indiana Natural, Scenic or Recreational River; Nationwide Rivers Inventory River; or Indiana Outstanding River. Also, none of these are considered a Navigable Waterway, per the U.S. Coast Guard's Designated Section 10 Navigable Waterway List.

Eight of the fourteen streams are likely Waters of the U.S., as confirmed by CJS during the site visit. Impacts to four of these streams are anticipated, and described further as follows:

- Culvert at UNT McCracken 6A (CV I70-032-61.89A) is located at I-70 mile marker 61.89 under eastbound lanes. There will be approximately 73 LFT of temporary impact and 58 LFT of permanent impact from the culvert extension, inlet end headwall, and installation of an energy dissipator at the outlet.
- Culvert at UNT McCracken 6B (CV I70-032-61.89B) is located at I-70 mile marker 61.89 under westbound lanes. There will be approximately 61 LFT of temporary impact and 46 LFT of permanent impact from culvert extension and liner (HDPE, CIPP, or Paved Invert) and potential headwall at inlet.
- Culvert at UNT McCracken 3 (CV I70-032-59.19) is located at I-70 mile marker 59.19. There will be approximately 332 LFT of temporary impact and 317 LFT of permanent impact from a culvert liner (either HDPE with new bored pipe or CIPP).
- Culvert at UNT McCracken 7 (CV I70-032-62.90) is located at I-70 mile marker 62.90. There will be approximately 281 LFT of temporary impact and 266 LFT of permanent impact from replacement of a 60-inch by 46-inch CMPA with a 14-foot by 5-foot RCBC.

The remaining six of the fourteen streams would likely not be considered a Waters of the U.S., because they lack a natural, defined channel and OHWM, as confirmed by CJS during the site visit. Impacts to two of these streams are anticipated, and described further as follows:

- Culvert structure crossing at UNT Guilford 1 (Culvert Str. at MM 67.5) is located at I-70 mile marker 67.5. There will be approximately 258 LFT of temporary impact and 243 LFT of permanent impact from replacement of a 42-inch by 29-inch CMPA with a 54-inch circular CMP.
- Culvert structure crossing at UNT Guilford 2 (Culvert Str. at MM 67.7) is located at I-70 mile marker 67.7. There will be approximately 29 LFT of temporary impact and 14 LFT of permanent impact from a pipe extension.

Early coordination letters were sent to the IDNR and the USACE on August 31, 2016. In a September 29, 2016 early coordination response (Appendix C, pages 19 to 22), the IDNR, Division of Fish and Wildlife (IDNR, DFW) provided a list of recommendations for construction that pertained to minimizing impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for the impacts. Commitments from IDNR, DFW are located in *Section J: Environmental Commitments* of this CE. The USACE did not respond to the early coordination letter. The USFWS was coordinated with on March 28, 2017. In an email exchange between USFWS and KEG on April 10, 2017, USFWS responded with an inquiry regarding the use of the new highway programmatic consultation for the project, to which KEG replied yes (Appendix C, page 31). No further response from USFWS was received; therefore, according to the 2013 USFWS Interim Policy for the Review of Highway Transportation Projects in Indiana (Interim Policy), if no formal response is received after 30 days, the standard recommendations listed in the Interim Policy are to be incorporated. As such, the USFWS Interim Policy commitments are also located in *Section J: Environmental Commitments* of this CE.

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Other Surface Waters

Reservoirs
Lakes
Farm Ponds
Detention Basins
Storm Water Management Facilities
Other: _____

<u>Presence</u>	<u>Impacts</u>	
	Yes	No
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
X	<input type="checkbox"/>	X
X	<input type="checkbox"/>	X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remarks:

Based upon the Red Flag Investigation (RFI) prepared by KEG on December 5, 2016 and approved by INDOT-ES on December 6, 2016, eight lakes and/or farm ponds are located in close proximity to the project limits. The location of these include:

- North side of I-70, approximately 1,000 feet west of where S County Road 100 E crosses under I-70.
- South side of I-70, approximately 400 feet west of the I-70 EB off ramp to SR 39 at the SR 39/I-70 interchange.
- North side of I-70, approximately 1,000 feet west of where S Center Street crosses over I-70.
- North side of I-70, approximately 1,400 feet west of the I-70 WB on-ramp from SR 267 SB at the SR 267/I-70 interchange.
- North side of I-70, approximately 4,900 feet east of the SR 267/I-70 interchange.
- North side of I-70, approximately 6,300 feet east of the SR 267/I-70 interchange.
- North side of I-70, approximately 5,500 feet west of the Ronald Reagan Parkway/I-70 interchange.
- North side of I-70, approximately 5,000 feet west of the Ronald Reagan Parkway/I-70 interchange.

None of these surface waters are located within the project.

No early coordination responses were received regarding this subject.

Wetlands

<u>Presence</u>	<u>Impacts</u>	
	Yes	No
X	X	<input type="checkbox"/>

Total wetland area: 11.1 acre(s) Total wetland area impacted: 9.79 acre(s)

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

Wetland No.	Classification*	Total Size (Acres)	Impacted Acres	Comments
1	PEM	0.06	0.06	Non-Jurisdictional aquatic resource
2	PEM	0.02	0.02	Non-Jurisdictional aquatic resource
3	PEM	0.05	0.05	Non-Jurisdictional aquatic resource
4	PEM	0.07	0.07	Non-Jurisdictional aquatic resource
5	PEM	0.75	0.75	Non-Jurisdictional aquatic resource
6	PEM	0.32	0.32	Jurisdictional wetland
7	PEM	0.61	0.61	Non-Jurisdictional isolated wetland
8	PEM	0.56	0.56	Jurisdictional wetland

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Wetland No.	Classification*	Total Size (Acres)	Impacted Acres	Comments
9	PEM	0.45	0.45	Jurisdictional wetland
10	PEM	0.24	0.24	Non-Jurisdictional aquatic resource
11	PSS1	0.07	0.07	Non-Jurisdictional aquatic resource
12	PEM	0.40	0.40	Non-Jurisdictional aquatic resource
13	PEM	0.09	0.09	Non-Jurisdictional aquatic resource
14	PEM	0.63	0.63	Non-Jurisdictional aquatic resource
15	PEM	0.32	0.32	Non-Jurisdictional aquatic resource
16	PEM	0.22	0.22	Non-Jurisdictional aquatic resource
17	PEM	0.08	0.08	Jurisdictional wetland
18	PFO	0.10	0.10	Jurisdictional wetland
19	PFO	0.17	0.13	Jurisdictional wetland
20	PEM	0.46	0.46	Jurisdictional wetland
21	PEM	0.90	0.90	Non-Jurisdictional aquatic resource
22	PEM	0.10	0.10	Non-Jurisdictional aquatic resource
23	PEM	0.07	0.07	Non-Jurisdictional aquatic resource
24	PSS1	0.17	0.17	Jurisdictional wetland
25	PEM	0.03	0.03	Non-Jurisdictional aquatic resource
26	PEM	0.38	0.37	Non-Jurisdictional aquatic resource
27	PEM	1.26	0.79	Non-Jurisdictional Isolated Wetland
28	PEM	0.06	0.06	Non-Jurisdictional aquatic resource
29	PEM	0.62	0.62	Non-Jurisdictional Isolated Wetland
30	PEM	0.16	0.16	Non-Jurisdictional Isolated Wetland
31	PEM	0.11	0.10	Non-Jurisdictional Isolated Wetland
32	PEM	0.16	0.13	Non-Jurisdictional Isolated Wetland
33	PEM	0.09	0.08	Jurisdictional wetland
34	PSS1	1.14	0.52	Non-Jurisdictional aquatic resource
35	PEM	0.10	0.06	Non-Jurisdictional aquatic resource

*PEM = Palustrine emergent, PSS1 = Palustrine Scrub-Shrub, PFO = Palustrine Forested

Documentation

ES Approval Dates

Wetlands (Mark all that apply)

- Wetland Determination
- Wetland Delineation
- USACE Isolated Waters Determination
- Mitigation Plan

X
X

March 15, 2017
March 15, 2017

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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

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

Remarks:

The National Wetlands Inventory (NWI) map identifies 106 NWI-wetland polygons within a half-mile radius of the project limits (Water Resources Map, Appendix E, pages 14 to 18); however, only three NWI-wetland polygons lie within the project limits.

A formal wetland delineation was conducted in May 2016 through January 2017 by KEG to determine the presence of jurisdictional wetlands within the project limits. Thirty-five (35) wetlands, totaling 11.1 acres, were identified within, or adjacent to, the project survey area of this project. Descriptions of these wetlands can be found in the above table. For more details, see the Waters of the US Report in Appendix F. Impacts to wetlands from the I-70 added lanes project would be a maximum of 9.79 acres (acres within the project construction limits). Per early coordination with INDOT Waterways and the Louisville District Corps, it is likely that wetlands named as non-jurisdictional aquatic resources and isolated wetlands will fall under Waters of the State. Upon further development of the project plans, final wetland impacts will be determined. All impacts will be permitted and mitigated for, as necessary, before the project is allowed to go to construction.

The wetland delineation, included in the Waters of the US Report, was submitted to INDOT-EWPO on October 7, 2016 and approved by INDOT-EWPO on March 15, 2017. Every effort shall be taken to avoid and minimize impacts to Waters of the U.S. and jurisdictional wetlands. If impacts are necessary, then mitigation may be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters are ultimately made by the USACE and IDEM.

	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Terrestrial Habitat	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unique or High Quality Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Remarks:

Field reconnaissance conducted in May 2016 by KEG and August 2016 by CJS determined habitat within the project limits consists of riparian, forested, early successional, agricultural and maintained utility corridors, open spaces, and fragmented woodlots.

The majority of the project area is fairly flat. The topography is gently rolling and intersects with streams throughout the landscape. Most of the stream systems are natural channels; though, most of the smaller order channels have been impacted (channelization, rerouting, etc.).

The land use within most of the project area is agricultural (crop production), particularly in the western portion. As the project area moves east, toward Indianapolis, development becomes more prevalent; particularly east of SR 267. Wooded areas are largely located along riparian corridors, along property lines, and along the I-70 ROW.

This project would impact approximately 1.0 acres of commercial land use (developed area of previously disturbed soils). This project would impact approximately 1.48 acres of forested area within the existing ROW of I-70. A Tree Habitat and Assessment Report (Appendix J, pages 14 to 48), submitted for review to USFWS

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on February 8, 2017, determined only few moderate to good habitats for the Indiana Bat and the Northern Long-Eared Bat exist within proximity to the project corridor. No official response was received from USFWS regarding the Tree Report; however, the Tree Report was submitted to USFWS in coordination with the applicable bat forms related to the range-wide informal consultation programmatic agreement (PA) for consultation of the Indiana bat and the northern long-eared bat (NLEB) detailed in the *Threatened and Endangered Species* section of this CE. Since KEG was not contacted by USFWS within 14 calendar days of submittal of the forms and/or Tree Report, it is assumed USFWS had no further comment, per guidance in the PA. All impacts will occur within existing ROW along the I-70 median and ditch-lines, which provide poor habitat for native species. Therefore, impacts to terrestrial habitat will be minimal.

As previously stated, IDNR was coordinated with on August 31, 2016. In an email response on September 29, 2016 IDNR, DFW responded with comments to help reduce potential impacts in the project area (Appendix C, pages 19 to 22). Commitments from IDNR, DFW are located in *Section J: Environmental Commitments* of this CE. The USWFS was coordinated with on March 28, 2017. In an email exchange between USFWS and KEG on April 10, 2017, USFWS responded with an inquiry regarding the use of the new highway programmatic consultation for the project, to which KEG replied yes (Appendix C, page 31). No further response from USFWS was received; therefore, according to the 2013 USFWS Interim Policy for the Review of Highway Transportation Projects in Indiana (Interim Policy), if no formal response is received after 30 days, the standard recommendations listed in the Interim Policy are to be incorporated. As such, the USFWS Interim Policy commitments are also located in *Section J: Environmental Commitments* of this CE.

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

	Yes	No
Is the proposed project located within or adjacent to the potential Karst Area of Indiana?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are karst features located within or adjacent to the footprint of the proposed project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If yes, will the project impact any of these karst features?	<input type="checkbox"/>	<input type="checkbox"/>

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:

This project is located outside of the designated karst area of the state as identified in the October 13, 1993 Memorandum of Understanding (MOU) between INDOT, IDNR, IDEM, and USFWS. No karst features are mapped within the project limits (Appendix E, pages 14 to 18). Therefore, this project is not anticipated to impact any karst features.

An early coordination letter was sent to the Indiana Geological Survey on August 31, 2016, but no response was received.

Threatened or Endangered Species

	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Within the known range of any federal species	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Any critical habitat identified within project area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Federal species found in project area (based upon informal consultation)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
State species found in project area (based upon consultation with IDNR)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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Remarks:

All of Indiana is within range of the federally endangered Indiana bat (*Myotis sodalis*) and federally threatened NLEB (*Myotis septentrionalis*). Per a review of IDNR's Heritage Data Center website and USFWS's Information for Planning and Consultation (IPaC) on June 8, 2017, Morgan and Hendricks counties do not include any additional federally threatened or endangered species; however, Marion county includes the Running buffalo clover (*Trifolium stoloniferum*). On March 21, 2017, the rusty patched bumble bee (RPBB) (*Bombus affinis*) was listed as federally endangered, and according to the USFWS website, the study area falls within the historic range for the RPBB. High and low potential zones (recommended by USFWS for scientific recovery permits and nonlethal survey for the RPBB) occur in northern Marion county, but do not intersect with the project limits.

As of June 1, 2016, FHWA and INDOT have applied the range-wide informal consultation PA for consultation of the Indiana bat and the NLEB on projects impacting the transportation network. The PA allows a federal project proponent to use informal consultation to satisfy Endangered Species Act - Section 7 requirements for the Indiana bat and the NLEB. The I-70 ATL project's features, impacts, and conservation measures were documented in the following PA supporting forms: *Scoping Sheet for the Indiana Bat and NLEB* (Appendix C, pages 32 to 37) and *Project Submittal Form* (Appendix C, pages 38 to 49); as well as the Tree Survey Report (Appendix J, pages 14 to 48). As such, the project was determined to qualify for the PA informal consultation. Completion of these forms, resulted in a determination for the Indiana bat and the NLEB within the project limits as, 'May Affect, Not Likely to Adversely Affect (NLAA) – Avoidance and Minimization Measures Required', which was emailed to USFWS on March 6, 2017 for concurrence. Since KEG was not contacted by USFWS within 14 calendar days of submittal of these forms, concurrence with the NLAA determination was applied, per guidance regarding the *Project Submittal Form* in the PA. USFWS related commitments appear in *Section J – Environmental Commitments* of this document.

In a September 29, 2016 early coordination response (Appendix C, pages 19 to 22), IDNR, DFW stated per a check of the Natural Heritage Program, this project is within range of the federally and state endangered Indiana bat (*Myotis sodalis*) and has been documented within a half-mile south of the project area. No formal response was received from coordination with USFWS; therefore, the IPaC results completed coordination (Appendix C, pages 44 to 48).

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	Impacts	
		Yes	No
Wellhead Protection Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public Water System(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Residential Well(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Source Water Protection Area(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sole Source Aquifer (SSA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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
Is the Project in the St. Joseph Aquifer System?	<input type="checkbox"/>	<input type="checkbox"/>
Is the FHWA/EPA SSA MOU Applicable?	<input type="checkbox"/>	<input type="checkbox"/>
Initial Groundwater Assessment Required?	<input type="checkbox"/>	<input type="checkbox"/>
Detailed Groundwater Assessment Required?	<input type="checkbox"/>	<input type="checkbox"/>

Remarks:

In a letter (Appendix C, page 30) dated September 1, 2016, the IDEM, Ground Water Section stated the project is not located within a Wellhead Protection Area.

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The IDNR Water Well Record Database (<http://www.in.gov/dnr/water/3595.htm>) was reviewed by KEG staff on October 17, 2016, and it was determined there are five (5) wells present within the project limits. Field investigations by KEG staff did not identify any residential or public wells within the project limits; therefore, it is assumed these wells are plotted incorrectly in the IDNR Water Well Viewer database.

This project is located within Morgan, Hendricks, and Marion Counties, which is outside the St. Joseph Aquifer system, the only legally designated Sole Source Aquifer in Indiana.

No public water system exists within the project limits; therefore, no impacts are anticipated to a public water system.

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

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

The project has portions that are located within a regulatory floodplain as determined from available Federal Emergency Management Act (FEMA) floodplain maps. At UNT 9 McCracken Creek, a floodplain is denoted "Zone A", however it is not a regulatory floodway. At West Fork White Lick Creek, a floodplain is denoted "Zone AE" and is a regulatory floodway. At White Lick Creek, a floodplain is denoted "Zone AE" and is a regulatory floodway. At Clarks Creek, a floodplain is denoted "Zone AE" and is a regulatory floodway. East Fork White Lick Creek is located just outside of the eastern edge of the project limits. While no work will be occurring at this creek, its associated floodplain, denoted as "Zone AE" and a regulatory floodway, extends into the eastern end of the project limits.

The impacts to the floodplains for all of these bodies of water are considered transverse. Transverse impacts, which occur when roads or bridges cross floodplains, typically result in fewer impacts than longitudinal impacts, which occur when roads or bridges travel along a floodplain.

INDOT has established five (5) categories of projects based upon the size, scope, and impact to the floodplain. Work on the bridges and existing drainage structures for this project would be considered a Category 4 impact. Any work in the vicinity of the floodplains will be limited to extending the internal portion of the east bound and west bound bridge decks and piers to accommodate the lane addition, and adding riprap for scour countermeasure.

The existing mainline bridges will be widened in-place; therefore, a hydraulic design study that addresses various structure size alternates will be completed during the preliminary design phase. Since this project is a Design-Build procurement, the design-build team will include a summary of the hydraulics study in the Field Check Plans.

In an Early Coordination response dated September 29, 2016 from the Indiana Department of Natural Resources, Division of Fish and Wildlife (IDNR, DFW), they stated that a formal approval from their agency may be required pursuant to the Flood Control Act (IC 14-28-1) for any proposal to construct, excavate, or fill in or on the floodway of a stream or other flowing waterbody which has a drainage area greater than one square mile, unless it qualifies for a bridge exemption.

All of these bridge projects are state highway department projects and have drainage areas less than fifty square miles; however, only one is located in a rural area (UNT 9 McCracken Creek), which qualifies it for a bridge exemption. The other three streams are within two miles of the town limits of Plainfield. Therefore, the projects on bridges over West Fork White Lick Creek, White Lick Creek, and Clarks Creek would likely not qualify for a bridge exemption and would require an IDNR Construction in a Floodway permit.

A FEMA Floodplain map is presented as Appendix F, Waters Report.

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Farmland	Presence	Impacts	
		Yes	No
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 project will affect only developed land uses (i.e. existing ROW); therefore, the project will not convert farmed land to non-farm uses. As such and via field reconnaissance of the project area, none of the land within the project limits meets the definition of farmland under the Farmland Protection Policy Act (FPPA); therefore, the requirements of the FPPA do not apply to this project.

In an early coordination response (Appendix C, page 18) dated September 22, 2016 from the Natural Resources Conservation Service (NRCS), the project will not cause a conversion of prime farmland within the project limits. Consequently, no impacts to farmland are anticipated.

SECTION C – CULTURAL RESOURCES

Minor Projects PA Clearance	Category	Type	INDOT Approval Dates	N/A
				<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)

	ES/FHWA Approval Date(s)	SHPO Approval Date(s)
Historic Properties Short Report		
Historic Property Report	September 6, 2016	October 17, 2016
Archaeological Records Check/ Review	March 2, 2017	April 3, 2017
Archaeological Phase Ia Survey Report	March 2, 2017	April 3, 2017
Archaeological Phase Ic Survey Report		
Archaeological Phase II Investigation Report		
Archaeological Phase III Data Recovery		
APE, Eligibility and Effect Determination		
800.11 Documentation	April 5, 2017	May 4, 2017

Memorandum of Agreement (MOA) **MOA Signature Dates** (List all signatories)

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[Empty rectangular box]

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): According to 36 CFR 800.16(d), an APE is “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 APE 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 this project incorporates the project location and includes properties that may be impacted by project activities within a 1,000-foot buffer adjacent to the project corridor.

Coordination with Consulting Parties: Early coordination was initiated on September 12, 2016 with a letter inviting organizations to become consulting parties (Appendix D, pages 38 to 40). The Indiana State Historic Preservation Officer (SHPO), FHWA, and INDOT Cultural Resources Office (CRO) are automatically consulting parties. The following is a list of the organizations and individuals formally invited to become a consulting party (those who indicated they wished to be a consulting party are in **bold**):

- Hendricks County Historical Society
- Hendricks County Heritage Alliance
- Indiana National Road Association
- **Hendricks County Historian**
- Hendricks County Commissioners
- Morgan County Historic Preservation Society, Inc.
- Morgan County Historian
- Morgan County History & Genealogy Association
- Morgan County Commissioner
- Indianapolis MPO
- Delaware Nation of Oklahoma
- **Miami Tribe of Oklahoma**
- Peoria Tribe of Indians of Oklahoma
- Eastern Shawnee Tribe of Oklahoma

Archaeology: An Indiana Records Check and Phase Ia Archaeological Survey Report (ASR) was submitted for approval for this project on January 31, 2017 (Appendix D, pages 33 to 36). No archaeological sites were found within the project areas, and the report recommended that the project be allowed to proceed as planned. The report was approved by INDOT CRO on March 2, 2017 and then forwarded to SHPO for concurrence.

On April 3, 2017, SHPO responded to the ASR, agreeing “with the conclusions and recommendations contained within the archaeology report (Arnold: 2017). No additional archaeological research needs to be completed”. The staff further stated that “[i]f 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” (Appendix D, pages 52 to 53). This is a firm commitment.

Historic Properties: A Historic Properties Report (HPR) was completed for this project on August 26, 2016 (Appendix D, pages 31 and 32). No properties were recommended eligible for listing in the National Register of Historic Places (NRHP). The report was approved by INDOT CRO on September 6, 2016. The HPR and early coordination letters were forwarded to SHPO and the other consulting parties for review on September 12, 2016.

On October 17, 2016, SHPO responded to the early coordination letter and the HPR stating, “do not believe that any above-ground properties identified within the proposed APE is eligible for inclusion in the [NRHP]” (Appendix D, pages 49 to 50).

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Documentation, Findings: An 800.11(d) document was completed on April 5, 2017 with INDOT, on behalf of FHWA, issuing a "No Historic Properties Affected" finding (Appendix D, pages 1 to 56). SHPO concurred with this finding on May 4, 2017 (Appendix D, pages 59 to 60).

Public Involvement: A legal public notice describing the project and announcing the Section 106 Finding of "No Historic Properties Affected" was published in the Indianapolis Star newspaper and website on April 10, 2017. The public notice solicited comments regarding the project for a 30-day period, which expired May 15, 2017. Refer to Appendix D, pages 57 to 58, for a copy of the Public Notice Affidavit. No public comments were received.

No further consultation or public involvement pertaining to the requirements of Section 106 is required. 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

--

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

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:

Section 4(f) of the U.S. Department of Transportation Act of 1966 specifies that FHWA and INDOT may not use land from a section 4(f) property unless there is no prudent and feasible alternative and the project includes all actions to minimize harm to the 4(f) property. Section 4(f) properties include publicly owned parks, recreation areas, and water and waterfowl refuge areas, as well as historic properties eligible for listing on the NRHP.

Parks, Recreation Areas, and Water/Waterfowl Refuge Areas: Based upon review of available records on GIS layers in IndianaMAP (<http://www.indianamap.org/>), the Indiana DNR Recreation Finder (<https://indnr.maps.arcgis.com>), and local government websites within the project corridor (i.e. Hendricks County, <http://www.hendrickscountyparks.org/>, and Morgan County, <http://morgancountyparks.org/>), as well as topographic maps, no wildlife/waterfowl refuges or public owned lands are located within or near the project limits. A site investigation by KEG on May 5, 2016, further confirmed the absence of wildlife/waterfowl refuges or public owned lands.

Historic Properties: A legal public notice describing the project and announcing the Section 106 Finding of "No Historic Properties Affected" was published in the Indianapolis Star newspaper and website on April 10, 2017. The public notice solicited comments regarding the project for a 30-day period, which expired May 15, 2017. Refer to Appendix D, pages 57 to 58, for a copy of the Public Notice Affidavit. No public comments were received.

Therefore, the project will not result in the impact of any Section 4(f) property.

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:

Section 6(f) properties are lands purchased or improved using money from the Land and Water Conservation Fund (LWCF).

No Section 6(f) resources were identified within the project area based upon a review by KEG on June 7, 2016 of the information available at the National Park Service website (<http://waso-lwcf.nrc.nps.gov/public/index.cfm>, Appendix J, pages 1 to 2). No Section 6(f) resources were identified during a site inspection of the project corridor by KEG on May 5, 2016. The project will not involve any properties acquired by or improved with the LWCF.

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SECTION E – Air Quality

Air Quality

Conformity Status of the Project

	Yes	No
Is the project in an air quality non-attainment or maintenance area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If YES, then:		
Is the project in the most current MPO TIP?	<input type="checkbox"/>	<input type="checkbox"/>
Is the project exempt from conformity?	<input type="checkbox"/>	<input type="checkbox"/>
If the project is NOT exempt from conformity, then:		
Is the project in the Transportation Plan (TP)?	<input type="checkbox"/>	<input type="checkbox"/>
Is a hot spot analysis required (CO/PM)?	<input type="checkbox"/>	<input type="checkbox"/>

Level of MSAT Analysis required?

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

Remarks:

This project is located in Hendricks, Morgan, and Marion counties. According to the IDEM Office of Air Quality Current Nonattainment Area Map (Appendix H, page 1), the project area is not listed as a non-attainment or maintenance area for any National Ambient Air Quality Standards (NAAQS). Morgan County has two townships (Clay and Washington) currently listed in non-attainment for the 2010 1-hour SO₂ standard; however, this project is located in Adams and Monroe Township, which are currently in attainment. All of Hendricks County is currently in attainment. In regards to Marion County, this project was listed in the Indianapolis Metropolitan Planning Organization's (IMPO) Transportation Improvement Program (TIP), FY 2016-2019 (Appendix H, page 2). A letter between the FHWA, FTA, and INDOT, dated July 22, 2016 (Appendix H, page 3), suggests the IMPO's 2035 Long Range Transportation Program and FY 2016-2019 TIP were amended to conform to the applicable air quality conformity requirements. This project is not listed in the FY 2018-2021 TIP; however, it is listed in the FY 2018-2021 STIP (Appendix H, pages 10 to 11).

Also, this project is of a type qualifying as a categorical exclusion (Group 2) under 23 CFR 771.117(c), or exempt under the Clean Air Act conformity rule under 40 CFR 93.126, and as such, a Mobile Source Air Toxics analysis is not required. Furthermore, email correspondence (Appendix H, pages 4 to 5) on September 21, 2016 between KEG staff and INDOT, suggested a project-level conformity analysis was not necessary.

SECTION F - NOISE

Noise	Yes	No
Is a noise analysis required in accordance with FHWA regulations and INDOT's traffic noise policy?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	No	Yes/ Date
ES Review of Noise Analysis	<input type="checkbox"/>	X / January 24, 2017

Remarks:

This project is a Type I project, since it proposes the construction of added travel lanes. Therefore, in accordance with 23 CFR 772 and INDOT's Traffic Noise Policy (effective July 13, 2011), a traffic noise analysis is required. KEG performed a traffic noise study for the project, per FHWA Noise Abatement Criteria (NAC) for specific land use activities in the evaluation of traffic noise impacts outlined in the INDOT Traffic Noise Policy.

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The purpose of this preliminary study was to assess the effects of traffic noise from the proposed design and improvements on future noise levels in the study area. Predicted noise levels were determined using Version 2.5 of the FHWA Traffic Noise Model (TNM). The FHWA TNM predicts noise levels at selected locations based on traffic data, roadway design, topographic features, and the relationship of the analysis site to the roadway. Based on review, the identified project limits contains nine (9) Common Noise Environments (CNEs) representing 43 receptors; consisting of single-family residences, a playground, and a hotel pool. Noise monitoring was performed at nine (9) locations (one per CNE) throughout the project corridor, and weather conditions were observed during each monitoring period. Existing and future noise levels were determined using TNM. Twenty-nine (29) of the 43 receptors approach or exceed FHWA's NAC, which INDOT defines as 66 dB(A) for land use Category B and Category C and required noise abatement analysis.

Nine proposed noise barrier locations were proposed. Two separate noise barriers were proposed for CNE D, since it is divided by approximately 2,700 feet of open space/agricultural land which did not warrant a noise barrier; therefore, one continuous noise barrier was not applicable for CNE D. A noise barrier analysis was not conducted for CNE G, since it had no impacted receptors. Based on the analysis of noise reduction and cost, Barriers A, B, D-2 and E are feasible but not reasonable, due to barrier costs exceeding \$25,000 per benefited receptor.

- Barrier A: Is located on the north side of westbound I-70, east of Quaker Boulevard just south of Cambridge Way. It is approximately 18 feet in height and 800 feet in length, will reduce noise levels by at least 5 dBA for one benefited receptor at a cost of \$359,882 per benefited receptor.
- Barrier B: Is located on the south side of eastbound I-70, east of South Center Street. It is approximately 10 feet in height and 578 feet in length, will reduce noise levels by at least 5 dBA for one benefited receptor at a cost of \$144,404 per benefited receptor.
- Barrier D-2: Is located on the north side of westbound I-70, east of CR 571 E, south of East CR 800 South and west of South CR 600 E. It is approximately 15 feet in height and 2,400 feet in length, will reduce noise levels by at least 5 dBA for eight benefited receptors at a cost of \$108,754 per benefited receptor.
- Barrier E: Is located on the south side of eastbound I-70, north and west of South CR 575 E. It is approximately 16 feet in height and 700 feet in length, will reduce noise levels by at least 5 dBA for one benefited receptor at a cost of \$279,954 per benefited receptor.

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 not been found to be reasonable based on the barrier costs exceeding \$25,000 per benefited receptor. 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.

Please refer to Appendix I for a copy of the Traffic Noise Study.

INDOT reviewed the Traffic Noise Study, and in an email dated January 24, 2017, concurred that the study has been completed in accordance with federal guidelines and state policy. Please refer to Appendix I, page 102 to 103, for a copy of INDOT's email response.

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SECTION G – COMMUNITY IMPACTS

Regional, Community & Neighborhood Factors

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

Table with 2 columns: Yes, No. Rows correspond to the questions above.

Remarks:

No significant economic or community impacts are expected to develop as a result of this project. This project is necessary to address capacity issues on I-70 and at the SR 39/I-70 interchange, which positively impacts motorists using these facilities.
As previously stated, traffic will continue to be maintained at all times through the I-70 corridor during construction. Impacts from the MOT should not significantly affect community events; although, minor travel delays are to be expected causing temporary inconveniences to local traffic and businesses during construction.
Hendricks County and the City of Plainfield have approved ADA Transition Plans; however, the project does not involve any county- or city-maintained roadways. INDOT is responsible for all interstates, U.S. routes, and state roads within the State of Indiana. Since the I-70 ATL project involves an interstate (i.e. I-70) and a state road (i.e. SR 39), the project will comply with INDOT's ADA Transition Plan.

Indirect and Cumulative Impacts

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

Table with 2 columns: Yes, No. Row for the question above.

Remarks:

No substantial indirect or cumulative impacts are expected as a result of this project.
Indirect Impacts: While this project will add the potential for additional traffic volume on I-70, no additional future developments would likely occur as a result. There is the potential for increased traffic during construction in combination with construction traffic from other concurrent nearby road projects.
Cumulative Impacts: Approximately 3.2 miles of the eastern portion of the project to the project termini at Ronald Reagan Parkway, is already located in a developed area. Other parcels in the corridor are already in development, or up for sale for development. As such, this project will not substantially increase impacts to land use or development patterns in the area, nor affect access to abutting and nearby parcels.

Public Facilities & Services

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.

Table with 2 columns: Yes, No. Row for the question above.

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Remarks:

Traffic will continue to be maintained on SR 39 and I-70 during construction. Impacts from the MOT should not significantly affect public facilities and services. Travel delays may occur; therefore, local officials, school corporations, and emergency services will be coordinated with at least two weeks prior to each phase of construction.

In an early coordination letter response dated September 2, 2016, INDOT Aviation (Appendix C, page 5) stated that Indianapolis International Airport is located 1,700 feet northwest of the project. If any permanent structures or equipment utilized during the project penetrates the 100:1 slope from the airport, FAA Form 7460 must be filed. However, no impacts to the airport are expected.

Environmental Justice (EJ) (Presidential EO 12898)

During the development of the project were EJ issues identified?

Does the project require an EJ analysis?

If YES, then:

Are any EJ populations located within the project area?

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

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

Remarks:

The project involves the acquisition of 1.0 acre of permanent ROW and no relocations. In accordance with the INDOT Categorical Exclusion Manual, any project that calls for more than 0.5 acre of permanent ROW or two relocations requires an analysis for impacts to EJ populations of concern. Since the project exceeds the acreage threshold, an EJ analysis is required.

The affected community (AC) for the EJ analysis included the following: Census Tracts 5104.02 in Morgan County; Census Tracts 2107, 2110, and 2106.08 in Hendricks County; and the community of comparison (COC), City of Plainfield. These geographic areas were reviewed for both low-income and minority populations using 2015 American Community Survey (ACS) census 5-year estimates. An AC has a population of concern for EJ if the population is more than 50 percent minority or low-income or if the percentage of low-income population or minority population in the AC is 25 percent higher than the percentage of low-income or minority population in the COC.

The tables below summarize the results of the minority population and low-income comparisons. Refer to Appendix J, pages 3 to 13, for a copy of the analysis data.

MINORITY COMPARISON					
	Affected Community (AC)				Community of Comparison (COC)
	Morgan County, Indiana	Hendricks County, Indiana			Town of Plainfield, Indiana
	Census Tract 5104.02	Census Tract 2107	Census Tract 2110	Census Tract 2106.08	
Total	5,389	10,776	5,958	3,206	29,710
White Alone	5,235	9,496	5,771	2,935	25,170
Subtotal Minority Population	163	1,280	187	271	4,540
Percent Non-White Minority	3.02%	11.88%	3.14%	8.45%	15.28%
Greater than COC by 25%+	NO	NO	NO	NO	
EJ Population Present	NO	NO	NO	NO	
Community of Concern	NO	NO	NO	NO	

Source: 2011-2015 ACS 5-Year Estimates

None of the minority population percentages of the AC Census Tracts (identified in the table above) exceeded 50 percent, or were larger than the COC by 25 percent or more. Therefore, there will be no disproportionately

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high and adverse environmental or health impacts to low-income or minority populations of environmental justice concern as a result of the project.

LOW-INCOME COMPARISON					
	Affected Community (AC)				Community of Comparison (COC)
	Morgan County, Indiana	Hendricks County, Indiana			Town of Plainfield, Indiana
	Census Tract 5104.02	Census Tract 2107	Census Tract 2110	Census Tract 2106.08	
Total	5,372	8,883	5,958	3,198	27,609
Income in the Past 12 Months Below Poverty Level	408	375	500	174	2,447
Percent Low-Income	7.59%	4.22%	8.39%	5.4%	8.86%
Greater than COC by 25%+	NO	NO	NO	NO	
EJ Population Present	NO	NO	NO	NO	
Community of Concern	NO	NO	NO	NO	

Source: 2011-2015 ACS 5-Year Estimates

None of the low-income population percentages of the AC Census Tracts (identified in the table above) exceeded 50 percent, or were larger than the COC by 25 percent or more. Therefore, there will be no disproportionately high and adverse environmental or health impacts to low-income or minority populations of environmental justice concern as a result of the project.

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

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; therefore, a BIS or CSRS are not required.

 Utility coordination has been initiated and is ongoing. Utilities within the project limits have submitted facility plans. Once utility locations are verified, impacted utilities will be reviewed for ways to lessen impacts, if possible. Further in the design phase for the project, a relocation plan and estimated costs will be determined.

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

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

This is page 33 of 38 Project name: I-70 Added Travel Lanes Date: November 14, 2017

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	No	Yes/ Date
ES Review of Investigations		X / December 6, 2016

Include a summary of findings for each investigation.

Remarks:

A Red Flag Investigation (RFI) was prepared by KEG on August 5, 2016 and approved by INDOT-ES on December 6, 2016 (Appendix E). The RFI identified the following hazardous material concerns:

- Fourteen (14) streams located within the project limits are impaired with *E. Coli*. Workers who are working in or near the water with *E. Coli* should take care to wear appropriate PPE, observe proper hygiene procedures, including regular hand washing, and limit personal exposure.
- One (1) Leaking Underground Storage Tank (LUST) (Agency Interest ID: 42508), owned by the former Mike's West 70 Marathon, is located within the project limits in the northeast quadrant of the SR 39/I-70 interchange in Hendricks County. This site is now the location of Loves Truck Stop. Per IDEM's Virtual File Cabinet (VFC), the site received a No Further Action (NFA) approval on October 31, 2013; therefore, no impact is expected.
- One (1) National Pollutant Discharge Elimination System (NPDES) (NPDES ID: IN0062456), associated with the Town of Plainfield's south waste water treatment plant, is located within the project limits; approximately 1.5 miles west of the SR 267/I-70 interchange, 100 feet south of the median of I-70 in Hendricks County. Coordination with INDOT Utilities will occur to determine where exactly the pipe is located, and that it will not be disturbed by the proposed project.
- One (1) state cleanup site (Agency Interest ID: 45611) is located within the project limits, at the SR 39/I-70 interchange. A review of IDEM Spills data indicates this was a spill of petroleum product on February 27, 2004, that was contained. No impact is expected.

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)	X
Nationwide Permit (NWP)	
Regional General Permit (RGP)	
Pre-Construction Notification (PCN)	
Other	
Wetland Mitigation required	X
Stream Mitigation required	X

IDEM

Section 401 WQC	X
Isolated Wetlands determination	
Rule 5	
Other	
Wetland Mitigation required	
Stream Mitigation required	

IDNR

Construction in a Floodway	X
Navigable Waterway Permit	
Lake Preservation Permit	
Other	
Mitigation Required	

US Coast Guard Section 9 Bridge Permit

Others (Please discuss in the remarks box below)

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Remarks:

Permits will be required for this project. An USACE Individual Permit (IP) as well as an IDEM Section 401 WQC will likely be required due to impacts to likely jurisdictional Waters of the US. An isolated wetland determination will be required from IDEM. It is likely wetland and stream mitigation will be required.

The projects on bridges over West Fork White Lick Creek, White Lick Creek, and Clarks Creek would likely not qualify for a bridge exemption and would require an IDNR Construction in a Floodway permit.

It will be the responsibility of the designer to obtain the USACE Section 404 permit, the IDEM Section 401 permit, and the IDNR Construction in a Floodway Permit. It will be the responsibility of the design-build contractor if there are any modifications required for the Section 404, Section 401, or Floodway permits.

If permanent structures or equipment utilized for the project penetrates the 100:1 slope from the airport, FAA Form 7460 must be filed. At this time, this form is not anticipated.

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 the scope of the project changes or additional permanent or temporary right-of-way is determined to be required, INDOT Environmental Services will be contacted immediately. (INDOT ES)
2. The Indianapolis International Airport is located 1,700 feet northwest of the project. If any permanent structures or equipment utilized for the project penetrates the 100:1 slope from the airport, FAA Form 7460 (Notice of Proposed construction or alteration) must be filed. (INDOT Aviation)
3. School corporations and emergency services will be notified at least two weeks prior to any construction that would block or limit access. (INDOT)
4. Coordination must occur with the local floodplain administrator during design to insure consistency with local flood plain planning.
5. If a spill occurs or contaminated soils or water are encountered during construction, appropriate personal protective equipment (PPE) should be used. Contaminated materials will need to be properly handled by trained personnel and disposed in accordance with current regulations. IDEM should be notified through the spill line at (888) 233-7745 within 24 hours of discovery of a release from a UST system and within two (2) hours of a discovery of a spill. (INDOT- HazMat)
6. Workers who are working in or near water with *E. Coli* should take care to wear appropriate PPE, observe proper hygiene procedures, including regular hand washing, and limit personal exposure. (INDOT ES)
7. Do not clear trees or understory vegetation outside the construction zone boundaries. (This restriction is not related to the "tree clearing" restriction for potential Indiana Bat habitat.) (USFWS)
8. Restrict below low-water work in streams to placement of culverts, piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap. Culverts should span the active stream channel, should be either embedded or a 3-sided or open-arch culvert, and be installed where practicable on an essentially flat slope. When an open-bottomed culvert or arch is used in a stream, which has a good natural bottom substrate, such as gravel, cobbles and boulders, the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community. (USFWS)
9. Restrict channel work and vegetation clearing to the minimum necessary for installation of the stream crossing structure. (USFWS)
10. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat. (USFWS)
11. Implement temporary erosion and sediment control methods within areas of disturbed soil. All disturbed soil areas upon project completion will be vegetated following INDOT's standard specifications. (USFWS)

This is page 35 of 38 Project name: I-70 Added Travel Lanes Date: November 14, 2017

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12. Avoid all work within the inundated part of the stream channel during the fish spawning season (April 1 through June 30); except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below Ordinary High Water Mark during this time unless the machinery is within the caissons or on the cofferdams. (USFWS)
13. Evaluate wildlife crossings under bridge/culverts projects in appropriate situations. Suitable crossing include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels and diversion fencing. (USFWS)
- Indiana Bat and Northern Long-eared Bat Avoidance and Minimization Measures (AMMs) for Projects Not Likely to Adversely Affect (NLAA), per USFWS December 2016 User's Guide, Appendix C:*
14. General: Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.
15. Tree Removal 1: Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to the extent practicable to avoid tree removal in excess of what is required to implement the project safely.
Note: Tree Removal AMM 1 is an avoidance measure, the full implementation of which may not always be practicable. In such cases, projects may still be NLAA as long as Tree Removal AMMs 2, 3, and 4 are implemented.
16. Tree Removal 2: Apply time of year (TOY) restrictions for tree removal when bats are not likely to be present.
17. Tree Removal 3: Ensure tree removal is limited to that specified in project plans. Install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits. Ensure that contractors understand clearing limits and how they are marked in the field.
18. Tree Removal 4: Do not cut down documented Indiana bat or NLEB roosts (that are still suitable for roosting) or trees within 0.25 miles of roosts, or documented foraging habitat at any time of year.
19. Bridge 1: To completely avoid direct effects to roosting bats, perform any bridge repair, retrofit, maintenance, and/or rehabilitation work during the winter hibernation period. Also, follow Bridge AMM 5.
Note: Bridge Removal AMM 1 is an avoidance measure, the full implementation of which may not be practicable. In such cases, projects may still be NLAA as long as Bridge AMMs 2, 3, 4 and 5 are implemented.
20. Bridge 2: If construction activity is planned during the active season, perform a bridge assessment for presence of bats. *See User Guide Appendix D for bridge/abandoned structure assessment guidance.*
21. Bridge 3: If bridge assessment for bats suggests presence of bats, ensure activity will not disturb bats. The following types of bridge work can be conducted with the presence of bats:
- Above deck work that does not drill down to the underside of deck or include percussives (vibration) or noise levels above general traffic (e.g., road paving, wing-wall work, work above that does not drill down to the underside of the deck,).
 - Below deck work that is conducted away from roosting bats and does not involve percussives or noise levels above general traffic (e.g., some abutment, beam end, scour, or pier repair). Also, follow Lighting AMM 1.
22. Bridge 4: If bridge assessment for bats suggests presence of a small number of bats (5), conduct bridge repair, retrofit, maintenance, and/or rehabilitation work (including activity with percussives) outside of pup season (June 1- July 31) AND keep the light localized in the evening while the bats are feeding, starting one hour after sunset and ending one hour before daylight, excluding the hours between 10 p.m. and midnight.
23. Bridge 5: Ensure suitable roosting sites remain after any bridge work. Suitable roosting sites may be incorporated into the design of a new bridge.
24. Lighting 1: Direct temporary lighting away from suitable habitat during the active season
25. Lighting 2: Use downward-facing, full cut-off lens lights, and direct lighting away from suitable habitat when installing new or replacing existing permanent lights.
26. Hibernaculum 1: For projects located within karst areas, on-site personnel will use best management practices, secondary containment measures, or other standard spill prevention and countermeasures to avoid impacts to possible hibernacula. Where practicable, a 300 foot buffer will be employed to separate fueling areas and other major containment risk activities from caves, sinkholes, losing streams, and springs in karst topography.

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For Further Consideration:

27. Do not cut any trees suitable for roosting (greater than 3 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30. (IDNR, DFW)
28. If box or pipe culverts are used, the bottoms should be buried a minimum of 6 inches (or 20 percent of the culvert height/pipe diameter, whichever is greater up to a maximum of 2 feet) below the stream bed elevation to allow a natural streambed to form within or under the crossing structure. Crossings should: span the entire channel width (a minimum of 1.2 times the bankful width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width / length) of 0.25; and have stream depth and water velocities during low-flow conditions that are approximate to those in the natural stream channel. (IDNR, DFW)
29. The new/replacement/rehabilitated crossing structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage when compared to current conditions. (IDNR, DFW)
30. Impacts to non-wetland forest of one acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10 inches dbh or greater (5:1 mitigation based on the number of large trees). (IDNR, DFW)
31. If the need for lighting along the corridor is needed, visit the International Dark-Sky Association's website to learn about the potential negative effects of LED lighting systems. (IDNR, DFW)
32. Revegetate all bare and disturbed areas within the project area using a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Central Indiana as soon as possible upon completion. (IDNR, DFW)
33. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush. (IDNR, DFW)
34. Do not work in the waterway from April 1 through June 30 without prior written approval of the Division of Fish and Wildlife. (IDNR, DFW)
35. Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure. (IDNR, DFW)
36. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds. (IDNR, DFW)
37. Operate equipment used to replace/rehabilitate/modify stream crossings from the existing roadway whenever possible. (IDNR, DFW)
38. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids. (IDNR, DFW)
39. Do not use broken concrete as riprap. (IDNR, DFW)
40. Underlay the riprap with a bedding layer of well graded aggregate or a geotextile to prevent piping of soil underneath the riprap. (IDNR, DFW)
41. The sideslopes of the outlet section must be 2:1 or flatter. (IDNR, DFW)
42. Minimize the movement of resuspended bottom sediment from the immediate project area. (IDNR, DFW)
43. Do not deposit or allow demolition/construction materials or debris to fall or otherwise enter the waterway. (IDNR, DFW)
44. 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, DFW)
45. Seed and protect disturbed stream banks that are 3:1 or steeper with heavy-duty net-free biodegradable erosion control blankets to minimize the entrapment and snaring of small wildlife such as snakes and turtles (follow manufacturer's recommendation for installation); seed and apply mulch on all other disturbed areas. (IDNR, DFW)
46. Seed and protect areas where runoff is conveyed through a channel/swale with erosion control blankets (follow manufacturer's recommendations for selection and installation) or use an appropriate structural armament; seed and apply mulch on all other disturbed areas. (IDNR, DFW)
47. Protect the area around and below any concentrated discharge points, down to the waterway's normal flow level, with an appropriate structural armament such as riprap. (IDNR, DFW)
48. Install appropriate armament below pipe outfalls. (IDNR, DFW)
49. Two wells, operated by Citizens Gas and Coke Utility, are located within the project limits in Hendricks County. Coordination will occur with IDNR's Oil and Gas and Reclamation Divisions during

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project development and any impacts will be appropriately mitigated. (IDNR, Oil and Gas and Reclamation)

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:

<p>Early coordination was initiated on August 31, 2016 with applicable federal, state, and local agencies, and again on March 28, 2017 with the USFWS. Review comments from those agencies that returned a reply have been incorporated into this study, as appropriate. The resource agencies and dates of their responses are listed below.</p>		
Agency	Response Date(s)	Appendix C, Page #
US Department of Housing & Urban Development (HUD), Chicago Regional Office	No Response	
Indiana Department of Environmental Management (IDEM)	2/2/17	23-29
IDEM, Groundwater (Wellhead Proximity)	9/1/16 (Email)	30
Indiana Department of Natural Resources (IDNR), Division of Fish and Wildlife	9/24/16 (Email)	19-22
Indiana Geological Survey (IGS), Environmental Geology	No Response	
Indiana Department of Transportation (IDOT), Public Involvement	No Response	
INDOT, Department of Aviation	9/2/16 (Email)	5
Natural Resources Conservation Service (NRCS), State Conservationist	9/22/16 (Email)	18
US Army Corps of Engineers (USACE), Louisville District	No Response	
US Fish and Wildlife Service (USFWS)	4/10/17 (Email)	31
Indianapolis Metropolitan Planning Organization	No Response	
Morgan County Board of Commissioners	No Response	
Morgan County Highway Department	No Response	
Morgan County Surveyor Department	No Response	
Morgan County Drainage Board	No Response	
Hendricks County Board of Commissioners	No Response	
Hendricks County Highway Department	No Response	
Hendricks County Surveyor's Office	9/6/16 (Email)	6-17

APPENDIX F
INTERCHANGE ACCESS DOCUMENT

INTERSTATE ACCESS REQUEST

AT I-70 AND SR 39

DES# 1500143

Indiana Department of Transportation
Federal Highway Administration

Interstate Access Document

July, 2018

Prepared By:



115 W. Washington St, Suite 1270S
Indianapolis, IN 46204

For:



INDOT

Introduction

Purpose of Report

This Interstate Access Document (IAD) contains the analysis to support the Indiana Department of Transportation (INDOT) approval request for the modification of the existing I-70 access at SR 39. The interchange is located in southern Hendricks County, near the County Line with Morgan County (see Figure 1 for Location Map). This IAD follows the current guidance within the Indiana Interstate Access Request Procedures. Per this guidance, the limited, proposed modifications at this location allow for a minor IAD to be completed. This IAD will include concise answers to two of the eight Federal Highway Administration (FHWA) policy points as identified in the US Federal Register, with the remainder addressed within the NEPA process.

The existing bridge carrying SR 39 over I-70 is deteriorating; based on the most recent Bridge Inspection Report, the SR 39 bridge over I-70 is in poor condition with advanced deterioration and requires a full replacement. Additionally, the area near the interchange has recently experienced significant development. The combination of the bridge replacement and the increased traffic volumes has created a need to revise the interstate access at this location.

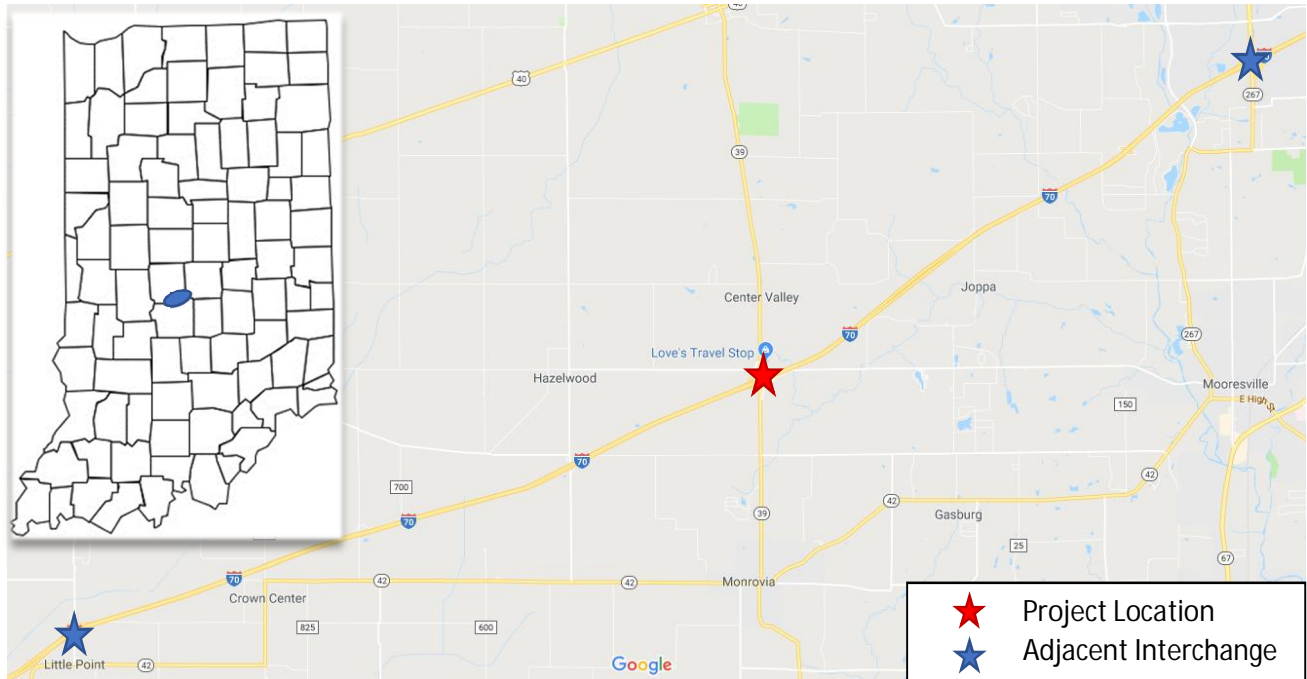


Figure 1 – Location Map

Project Leads, Proponents, and Team Members

INDOT is the primary owner and lead proponent of the project. The interchange is not located within the corporate limits of any city or town – it lies north of Monrovia, northwest of Mooresville, and southwest of Plainfield. Although the interchange is outside of the urbanized area boundary of the Indianapolis Metropolitan Planning Organization (MPO), it does fall within the Metropolitan Planning Area. The interchange modification is currently in the Indianapolis MPO's Transportation Improvement Plan (TIP). INDOT's design consultant, WSP, is responsible for the preparation of this IAD.

Project History, Previous Reports

Originally, this interchange was identified for improvement as part of a larger project to add travel lanes to I-70. As a part of that project, the interchange was analyzed to determine the necessary lane configuration using a standard diamond layout. Subsequent to this analysis, additional traffic data was obtained that suggested much higher volumes than anticipated, which led to the investigation of additional interchange alternatives. Per the Interstate Access Request Procedures, a Framework Document and Alternative Evaluation Report were prepared for this location as part of the alternative interchange investigation, leading to this IAD.

Project Schedule

Key milestone dates for the project include the following:

- November, 2017 – Final Environmental Document
- March, 2018 – Final Framework Document
- April, 2018 – Draft Alternative Evaluation Report
- May, 2018 – Final Alternative Evaluation Report
- May, 2018 – Draft Interstate Access Document
- June, 2018 – Interstate Access Document Approval
- May, 2019 – Letting

Project Study Area

The study area for the IAD includes the interchange itself, as well as the adjacent intersections along SR 39 and a nearby intersection north of the interchange that is the focus of recent development in the area. The study intersections are as follows, from south to north:

- SR 39 at CR 1000S
- SR 39 at I-70 eastbound ramps
- SR 39 at I-70 westbound ramps
- SR 39 at Koger Street
- SR 39 at Innovation Boulevard

No other intersections exist along SR 39 within half a mile of the interchange. The adjacent interchanges along I-70 are more than 7 miles from the SR 39 interchange; therefore, this location is treated as an isolated interchange and does not require analysis of adjacent interchanges or weaving movements. Figure 2 depicts the area of influence for the IAD.



Figure 2 - Area of Influence

Existing Conditions

- Mainline I-70: The existing I-70 typical section (in each direction) consists of two 12-foot through lanes, a ten-foot paved right shoulder, a four-foot paved left shoulder, and a 52-foot open grass median. The posted speed limit along I-70 is 70 mph.
- SR 39: SR 39 consists of two 12-foot through lanes and two eight- to ten-foot paved shoulders. Auxiliary right-turn lanes to the I-70 on-ramps exist at the interchange. The shoulder widths narrow across the bridge over I-70. The two-lanes plus auxiliary lanes configuration continues through the CR 1000S intersection (south of the interchange) and the Koger Street intersection (north of the interchange). North of Koger Street, SR 39 widens to accommodate two 12-foot through lanes in each direction, an eight-foot paved shoulder in each direction, and a fourteen-foot two-way left-turn lane (TWLTL). In the study area, SR 39 has a posted speed limit of 45 mph. South of CR 1000S, the speed limit increases to 55 mph.
- CR 1000S intersection: The intersection is two-way stop-controlled, with east/west traffic on CR 1000S stopping for north/south traffic on SR 39. The eastbound approach is a private driveway, consisting of a single lane. The westbound approach is wide enough for a right-turning vehicle to pass a waiting left-turning vehicle. Northbound SR 39 is a single lane, while southbound SR 39 consists of two lanes; while the southbound lanes generally serve as a shared left/through lane and a right-turn lane, the lanes are unmarked, and the right-turn lane could be utilized as a passing blister.
- Koger Street intersection: The intersection is controlled by a traffic signal. The eastbound approach consists of a signal lane, while the westbound approach consists of a left-turn lane and a shared through/right-turn lane. Northbound SR 39 consists of a short dedicated left-turn lane, a right-turn lane extending nearly back to the interchange, and a through lane. The southbound approach consists of a dedicated left-turn lane (continuation of the TWLTL), a dedicated right-turn lane (lane drop), and a through lane.

- Innovation Boulevard intersection: The intersection is two-way stop-controlled, with east/west traffic on Innovation Boulevard stopping for north/south traffic on SR 39. Both the eastbound and westbound approaches consist of a dedicated left-turn lane and a shared through/right-turn lane. SR 39 consists of two through lanes in each direction with a TWLTL.

Statement of Need and Purpose

The project need is to replace the SR 39 bridge over I-70 and to accommodate projected traffic volumes within the area of influence. The purpose of the project is to provide desirable traffic operations and accessibility both now and into the future.

Framework

The approved Framework Document is included in Appendix A. The traffic data for this project was obtained from three separate sources:

- Ramp Junction volumes were obtained in 2016 and projected to 2018 using a 1% annual straight-line growth rate
- Mainline I-70 volumes were obtained in 2017 and projected to 2018 using 0.67% and 0.60% compound annual growth rate west and east of the interchange, respectively.
- SR 39 intersection volumes were obtained in 2018.

Utilizing the 2018 volumes, traffic was projected to year 2019 (construction) and year 2039 (design) using a 1% annual straight-line growth rate for SR 39 intersection volumes and the previously identified compound annual growth rates for mainline I-70 traffic. Discussion regarding the traffic volume sources and growth rates can be found within Appendix A.

In addition to the volumes described above, a second set of traffic volumes was also considered. A Traffic Impact Study (TIS) was prepared for a large, proposed development near the interchange; that study produced year 2039 traffic volumes based on trip generation methodology. These volumes were used to complete a sensitivity analysis of the proposed interchange alternatives.

The AM and PM peak hours were analyzed for the mainline freeway segments and ramp merges and diverges using Highway Capacity Software (HCS). Synchro software was utilized to analyze AM and PM peak hour operations at intersections along SR 39.

Alternatives and Proposal

Alternatives Considered

Three alternatives were considered for the IAD:

- No Build
- Modified Standard Diamond Interchange
- Diverging Diamond Interchange (DDI)

Preferred Alternative

The Diverging Diamond Interchange efficiently handles large volumes of left-turning traffic traveling to and from the Interstate System. The DDI crosses traffic to the opposite side of the roadway at either end of the bridge, at the same location as the ramp intersections. This allows free-flow left-turn movements to and from the ramps, which are typically the most dangerous and inefficient movements at a suburban interchange. Figure 3 depicts a preliminary schematic of the DDI alternative.

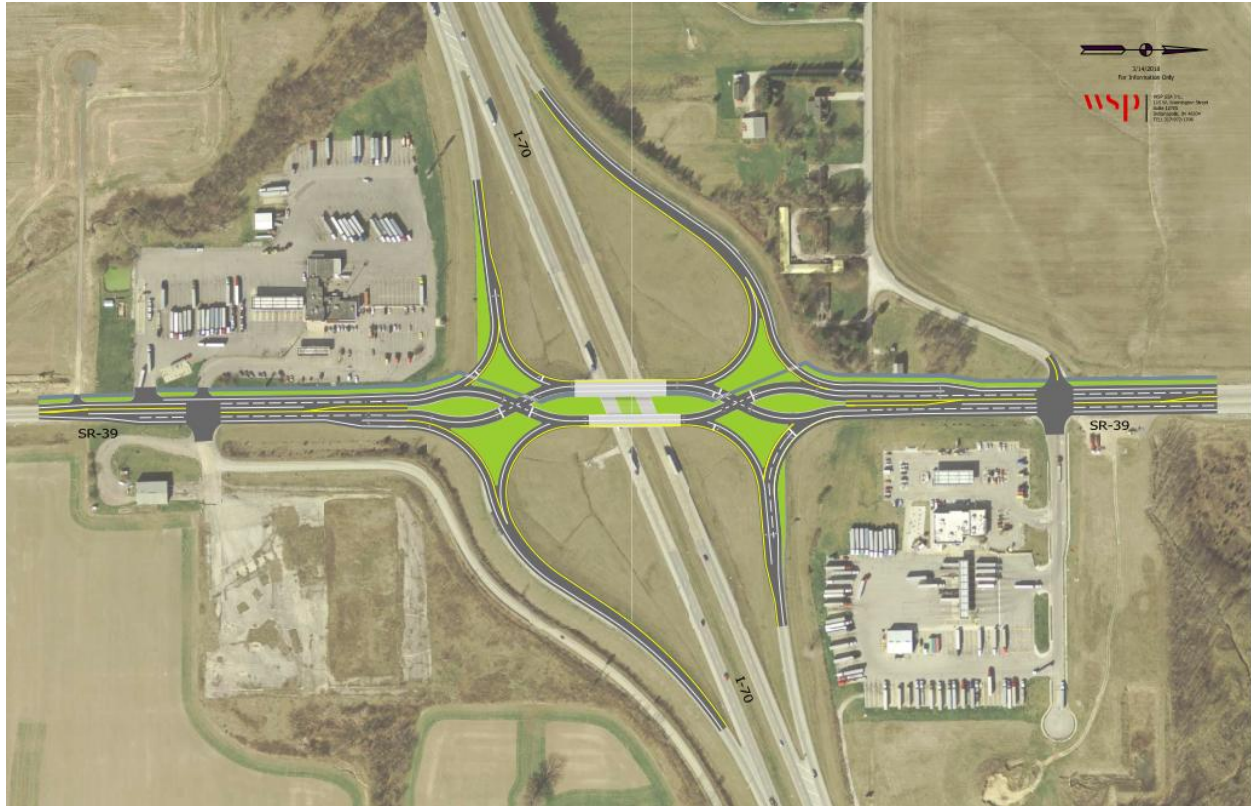


Figure 3 – DDI Preliminary Schematic

As shown in the Alternative Evaluation Report (AER – Appendix B), the DDI alternative provides satisfactory operations in the design year, while also providing acceptable operations in the sensitivity analysis. The standard diamond alternative does not provide acceptable operations when evaluated using volumes from the sensitivity analysis. Table 1 below compares the Level of Service (LOS) for all three alternatives for both the Year 2039 projected and sensitivity analyses.

Table 1: Interchange Level of Service Summary – All Alternatives

Intersection / Alternative		Year 2039 (Projected)				Year 2039 (Sensitivity)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
I-70 EB Ramps	No-Build	B	15.3	D	41.5	F	426.8	F	670.8
	Standard Diamond	A	7	A	7.3	F	98.6	F	96.7
	DDI	A	5.3	A	8.6	B	12.3	B	17.2
I-70 WB Ramps	No-Build	B	15.7	C	31.2	F	395.4	F	453.8
	Standard Diamond	A	9.3	B	19.9	F	115.2	F	136.1
	DDI	A	8	A	9.1	C	23.0	C	34.9

In addition to the traffic operations, the alternatives were compared by the relative safety, construction cost, constructability, environmental impacts, right-of-way impacts, and future expandability of the alternative. The No-Build alternative provides the lowest construction cost, best constructability, and lowest environmental and right-of-way impacts. However, the future traffic operations are projected to be unsatisfactory in the No-Build alternative, and therefore this alternative was discarded. Comparing the DDI to the Standard Diamond, the DDI performs better in operations, safety, construction cost, and constructability compared to a Standard Diamond interchange. The Standard Diamond alternative would be easier to expand in the future compared to the DDI. The environmental and right-of-way impacts are similar between the two alternatives. Since the DDI provides better results in more comparison categories, the DDI was selected as the preferred alternative.

Consistency with FHWA Policy

When requesting modifications to Interstate Access, FHWA policy requires investigation of eight Policy Points. Of these eight policy points, the following two require discussion within this IAD; the remaining six points will be covered within the NEPA document.

Policy Point #1

“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)).”

Detailed traffic operational analysis results are contained in Appendix C. A summary of the operational and safety results for the preferred alternative is below.

I-70 Mainline Capacity Analysis

Table 1 summarizes the year 2018 volumes (existing), year 2019 volumes (construction), year 2039 projected volumes (design), and year 2039 TIS volumes (sensitivity analysis) HCS operational analyses for the freeway mainline segments, as well as ramp merges and diverges. The results of the analysis, including discussion and output documentation, can be found in the AER (Appendix B). As shown in Table 1, the mainline operations are projected to have spare capacity for many movements through the design year.

Table 2: Mainline Capacity Analysis Summary (All Alternatives)

I-70 Direction / Segment		Year 2018				Year 2019				Year 2039 Projected				Year 2039 TIS			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
Westbound	Mainline east of SR 39	B	11.8	C	18.6	B	11.9	C	18.7	B	13.4	C	21.3	C	20.6	C	25.3
	Diverge to SR 39	B	14.0	C	22.1	B	14.1	C	22.2	B	15.9	C	25.0	C	24.3	D	29.0
	Mainline between gores	A	8.9	B	11.7	A	8.9	B	11.8	A	10.1	B	13.3	A	10.1	B	13.3
	Merge from SR 39	B	13.3	B	16.5	B	13.3	B	16.6	B	14.7	B	18.4	B	16.9	C	24.7
	Mainline west of SR 39	A	10.2	B	12.7	A	10.3	B	12.8	B	11.6	B	14.5	B	13.8	C	19.6
Eastbound	Mainline east of SR 39	A	7.8	B	11.3	A	7.8	B	11.3	A	8.9	B	12.9	B	11.4	B	17.3
	Diverge to SR 39	A	9.1	B	13.3	A	9.2	B	13.4	A	9.4	B	15.3	B	13.5	C	20.6
	Mainline between gores	A	7.1	A	9.8	A	7.1	A	9.8	A	8.1	B	11.3	A	8.1	B	11.3
	Merge from SR 39	B	18.7	B	17.3	B	18.7	B	17.4	C	21.0	B	19.5	C	21.6	C	27.2
	Mainline west of SR 39	B	15.4	B	12.8	B	15.5	B	12.9	B	17.6	B	14.7	C	18.2	C	21.0

Density = passenger cars/mile/lane

SR 39 Intersection Capacity Analysis

The Area of Influence of this interchange includes the interchange ramp termini, as well as three adjacent intersections:

- SR 39 & CR 1000 S (south of the interchange)
- SR 39 & CR 1000 S / Koger Street (north of the interchange)
- SR 39 & Innovation Boulevard

Capacity analysis of the five intersections was completed for each the three proposed alternatives outlined in the Framework Document (No-Build, Standard Diamond Interchange, and Diverging Diamond Interchange). For each alternative, the intersections were analyzed with year 2018 volumes (existing), year 2019 volumes (construction), year 2039 projected volumes (design), and year 2039 TIS volumes (sensitivity analysis).

The SR 39 corridor was analyzed using Synchro software; however, Highway Capacity Manual (HCM) reports were used to determine unsignalized intersection capacity results. The results of the preferred alternative are discussed in the following section. Results for all alternatives can be found within the AER in Appendix B.

Diverging Diamond Interchange Scenario

The Diverging Diamond Interchange Alternative involves the construction of a new DDI interchange, as well as added travel lanes between adjacent intersections along SR 39. In this scenario, the interchange will consist of a pair of two-lane bridges to carry traffic over I-70, for a total of four lanes along SR 39. Additionally, the traffic signals at the ramp termini will operate with two-phases, resulting in increased green time, simplified operations, and improved safety for motorists and pedestrians (when compared to a traditional diamond configuration). Based on the analysis, the interchange ramp intersections are expected to operate acceptably in the current year (2018) and construction year (2019), as shown in Table 2.

Table 2: SR 39 Capacity Analysis Summary - DDI Scenario - Interchange Intersections (2018 & 2019)

Intersection Direction / Movement		Year 2018						Year 2019						
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
		LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	
I-70 EB Ramps	Overall	A	5.1	-	A	7.3	-	A	5.1	-	A	7.4	-	
	NB	Th	B	14.7	50.0	B	15.2	54.0	B	14.7	51.0	B	15.1	55.0
		Rt	A	0.6	0.0	A	0.2	0.0	A	0.6	0.0	A	0.2	0.0
	SB	Lt	A	0.0	0.0	A	0.0	0.0	A	0.0	0.0	A	0.0	0.0
		Th	A	5.6	32.0	A	6.6	80.0	A	5.6	32.0	A	6.7	81.0
	EB	Lt	A	0.1	0.0	A	0.2	0.0	A	0.1	0.0	A	0.1	0.0
		Th	X	X	X	X	X	X	X	X	X	X	X	X
Rt	A	0.4	0.0	A	4.8	19.0	A	0.4	0.0	A	5.1	20.0		
I-70 WB Ramps	Overall	A	7.5	-	A	7.5	-	A	7.6	-	A	7.5	-	
	NB	Lt	A	0.0	0.0	A	0.0	0.0	A	0.0	0.0	A	0.0	0.0
		Th	A	8.6	47.0	B	10.3	51.0	A	8.6	47.0	B	10.4	52.0
	SB	Th	B	13.0	80.0	B	12.9	104.0	B	13.0	80.0	B	12.8	105.0
		Rt	A	4.3	17.0	A	3.7	18.0	A	4.3	17.0	A	3.6	18.0
	WB	Lt	A	0.9	4.0	A	6.0	51.0	A	1.0	5.0	A	6.3	53.0
		Th	X	X	X	X	X	X	X	X	X	X	X	X
Rt	A	0.4	0.0	A	1.2	9.0	A	0.4	0.0	A	1.3	10.0		

I-70 and SR 39 Interstate Access Document

Table 3: SR 39 Capacity Analysis Summary - DDI Scenario - Interchange Intersections (2039)

Intersection Direction / Movement		Year 2039 (Projected)						Year 2039 (TIS)						
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
		LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	
I-70 EB Ramps	Overall	A	5.3	-	A	8.5	-	B	12.3	-	B	14.6	-	
	NB	Th	B	14.6	60.0	B	14.8	67.0	B	18.0	149.0	C	22.3	180.0
		Rt	A	0.9	0.0	A	0.2	0.0	A	0.7	0.0	A	0.4	0.0
	SB	Lt	A	0.0	0.0	A	0.0	0.0	A	0.0	0.0	A	0.0	0.0
		Th	A	6.3	41.0	A	8.1	109.0	B	11.3	124.0	B	14.9	247.0
	EB	Lt	A	0.1	0.0	A	0.2	0.0	B	18.8	203.0	B	10.6	94.0
		Th	X	X	X	X	X	X	X	X	X	X	X	X
	Rt	A	0.5	0.0	A	8.3	34.0	B	10.8	70.0	B	14.1	71.0	
I-70 WB Ramps	Overall	A	8.1	-	A	9.2	-	C	23.0	-	C	29.7	-	
	NB	Lt	A	0.0	0.0	A	0.0	0.0	A	0.0	0.0	A	0.0	0.0
		Th	A	9.6	57.0	B	12.0	67.0	C	32.6	318.0	C	34.8	302.0
	SB	Th	B	13.2	98.0	B	12.6	124.0	B	17.2	252.0	C	33.2	584.0
		Rt	A	4.0	19.0	A	3.3	20.0	A	3.6	31.0	A	4.7	38.0
	WB	Lt	A	3.2	24.0	B	10.0	81.0	C	23.2	171.0	E	65.7	405.0
		Th	X	X	X	X	X	X	X	X	X	X	X	X
	Rt	A	0.5	0.0	A	4.8	46.0	C	24.5	269.0	B	13.3	189.0	

With projected year 2039 volumes, the analysis results in LOS A or B for all movements with the proposed geometry; design year 2039 results are shown in Table 3 above. The sensitivity analysis (2039 TIS volumes) results in a few LOS C movements, as well as a LOS E for the westbound left-turn movement at the westbound ramps intersection in the PM peak hour. If traffic volumes increase above the projected volumes and approach the TIS volumes, this LOS E movement could be mitigated by adding a second left-turn lane for the westbound left-turn movement (at the westbound ramps intersection) without impacting the geometry of the bridge. It should be noted that, even in the sensitivity analysis, the queues at the ramp intersections do not spill back onto mainline I-70. Overall, the proposed diverging diamond geometry handles the traffic from potential future development well, with relatively minor delays and queues.

The adjacent intersections were analyzed using the same geometry as existing with the following modifications to accommodate the additional lane along SR 39 through the interchange:

- CR 1000 S – second northbound and southbound lanes extend through the intersection. Dedicated eastbound left-turn lane included.
- Koger St – second northbound through lane, second southbound lane begins on the south leg

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Table 4: SR 39 Capacity Analysis Summary - DDI Scenario - Adjacent Intersections (2018 & 2019)

Intersection Direction / Movement		Year 2018						Year 2019					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)
CR 1000S	NB	A	0.2	0	A	0.4	2	A	0.2	0	A	0.4	2
	SB	A	2.8	8	A	0.9	4	A	2.8	8	A	0.9	4
	EB	D	28.5	22	D	29.1	20	D	29.2	22	D	29.9	22
	WB	C	15.6	22	B	14.3	10	C	15.8	22	B	14.4	10
Koger Street	Overall	A	9.9	-	B	12.7	-	A	9.9	-	B	12.8	-
	NB	A	8.8	94.0	B	10.5	134.0	A	8.8	95.0	B	10.6	135.0
	SB	A	8.3	80.0	B	13.1	113.0	A	8.3	81.0	B	13.2	114.0
	EB	A	9.8	36.0	A	5.9	25.0	A	9.7	36.0	A	5.8	25.0
	WB	B	15.7	82.0	C	21.8	101.0	B	15.7	82.0	C	22.0	104.0
Innovation Boulevard	NB	A	0.9	4.0	A	2.6	12.0	A	0.9	4.0	A	2.6	12.0
	SB	A	0.0	0.0	A	0	0	A	0.0	0	A	0.0	0
	EB	B	13.9	2.0	B	14.5	18.0	B	14.0	2.0	B	14.6	18.0
	WB	A	9.7	0	A	9.6	0	A	9.7	0	A	9.6	0

With the noted extension of through lanes along SR 39 through the CR 1000S intersection, most movements at the adjacent intersections are expected to operate acceptably in the current year (2018) and construction year (2019), as shown in Table 4.

LOS E is expected for eastbound left-turns from CR 1000S to northbound SR 39; however, the maximum queue is expected to be a single vehicle in either peak hour.

All movements at the intersections of SR 39 & Koger Street and SR 39 & Innovation Boulevard are expected to operate satisfactorily (LOS D or better) during both peak hours in the years 2018 and 2019.

I-70 and SR 39 Interstate Access Document

Table 5: SR 39 Capacity Analysis Summary - DDI Scenario - Adjacent Intersections (2039)

Intersection Direction / Movement		Year 2039 (Projected)						Year 2039 (TIS)					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)	LOS	Delay (s)	Queue (ft)
CR 1000S	NB	A	0.3	0	A	0.5	2	A	0.4	2	A	0.6	2
	SB	A	3.2	12	A	1	4	A	7.4	56	A	3.7	12
	EB	F	58	52	F	78.8	56	*			*		
	WB	C	21.7	32	C	20	22	*			F	266.1	110
Koger Street	Overall	B	10.7	-	B	14.6	-	E	64.4	-	F	182.4	-
	NB	A	9.4	115.0	A	9.8	148.0	E	58.8	721.0	F	157.2	804.0
	SB	A	8.6	97.0	B	14.3	127.0	E	72.4	476.0	F	197.9	797.0
	EB	A	9.8	41.0	A	6.8	32.0	C	34.6	330.0	F	186.2	928.0
	WB	B	17.7	100.0	C	34.0	159.0	F	144.9	267.0	F	257.0	301.0
Innovation Boulevard	NB	A	0.9	4.0	A	2.7	16.0	A	2	26.0	A	2.0	20.0
	SB	A	0.0	0	A	0	0	A	0.4	4.0	A	0.2	2.0
	EB	C	16.8	2.0	C	19.8	38.0	F	212.7	102.0	F	777	432.0
	WB	B	10.1	0	B	10.0	0	F	2433.5	448.0	F	8433.9	992.0

* = Volume Exceeds Capacity; Results not Given

In the design year 2039, with projected volumes, operations are expected to be at or above acceptable levels except for the eastbound approach at CR 1000S. Design year results are summarized in Table 5.

At CR 1000S, with projected year 2039 volumes, the eastbound movements and the westbound left-turn movements are anticipated to operate at LOS F in both peak hours; however, the queue is anticipated to include at most three vehicles. During the sensitivity analysis, the eastbound and westbound movements did not yield results for some peak hours. In these instances, the projected volume exceeds the available capacity, resulting in an effectively infinite delay during the peak hour, as the demand causes a continuous queue.

At the intersection of SR 39 and Koger Street, the westbound left-turn movement is expected to operate at LOS D in the PM peak hour with projected year 2039 volumes, while the remaining movements are projected to operate at LOS C or better. With the sensitivity analysis volumes, westbound left-turns, northbound left-turns, and southbound through vehicles will operate with delays between one and three minutes. During the PM peak hour, those movements are anticipated to operate with delays of three to seven minutes.

The eastbound left-turn movement at Innovation Boulevard is expected to operate at LOS F in the PM peak hour under year 2039 projected volumes, although queues are anticipated to be minimal (not exceeding two vehicles). During the sensitivity analysis, the two-way stop controlled intersection will fail, creating excessive delays and queues on Innovation Boulevard and leading to unsafe conditions.

Safety Analysis

Crash data for the study intersections along SR 39 was extracted from ARIES, the statewide crash database, for years 2015-2017. Mainline I-70 will not be modified as a part of this project, therefore crash data associated with mainline I-70 was not considered as a part of this analysis. Crashes were filtered based on a 250 foot influence area around the center of each intersection. Deer crashes (four total within the influence areas) were excluded from this assessment. The manner of collision, or crash type, was verified and modified (where applicable) from the raw data to ensure that crash trends and existing patterns were accurately summarized. Table 6 below summarizes the breakdown of incapacitating and non-incapacitating injury crashes, and property damage only crashes at each intersection; it should be noted that there were no fatal crashes at intersections within the area of influence (for years 2015-2017).

Table 6: Crash Severity Summary

Intersection	Incapacitating	Non-Incapacitating	Property Damage Only	Intersection Total
CR 1000S	2	0	6	8
I-70 Eastbound Ramps	4	2	14	20
I-70 Westbound Ramps	1	0	13	14
Koger Street	1	0	12	13
Innovation Boulevard	2	0	1	3
Study Area Total	10	2	46	58

Of the intersections within the area of influence, the junction of the eastbound ramps had the highest crash total. Six of the 12 injury crashes and 14 of the 46 property damage only crashes (within the area of influence) occurred at this intersection. Fourteen of the 20 crashes at the junction of the eastbound ramps involved a southbound left-turning motorist failing to yield the right of way to a northbound through motorist.

Eight of the 58 total crashes (14%) occurred during inclement weather, and 14 (24%) of the crash reports noted adverse pavement conditions; 15 (26%) of the crashes occurred during overnight, dawn/dusk conditions.

The Road Hazard Analysis Tool (RoadHAT 3.0) software was utilized to evaluate safety at each of the intersections within the area of influence. RoadHAT compares actual crash frequency and severity to that which is expected for a given facility, given the existing traffic volume. RoadHAT produces two crash statistics: the Index of Crash Frequency (I_{CF}) and the Index of Crash Cost (I_{CC}). The I_{CF} measures the difference between the expected number of crashes and the reported number of crashes, and the I_{CC} measures the difference between the expected crash severity and the reported crash severity.

According to The Hazard Elimination Program-Manual on Improving Safety of Indiana Road Intersections and Sections, if the I_{CF} and I_{CC} values for a location are both greater than 2, the location is a "high crash" location. Table 7 summarizes I_{CF} and I_{CC} values for each of the intersections within the area of influence. I_{CF} values greater than zero indicate that more crashes are happening at that intersection than would be expected, and I_{CC} values greater than zero indicate that more severe crashes are happening at that intersection than would be expected.

Table 7: RoadHAT Results Summary

Intersection	I _{CC}	I _{CF}
CR 1000S	1.17	0.63
I-70 Eastbound Ramps	1.52	-0.06
I-70 Westbound Ramps	0.13	-0.53
Koger Street	0.11	-0.39
Innovation Boulevard	1.13	-0.41

For the purpose of evaluating design alternatives, crash modification factors (CMFs) were investigated for the two proposed alternatives – the standard diamond and the diverging diamond. The selected CMF was developed from a before/after study of existing standard diamond interchanges that were converted to diverging diamond interchanges¹. This single CMF enables the comparison of the relative safety of the two proposed alternatives, as the CMF shows the difference, from a safety perspective, between the standard diamond and the diverging diamond.

The study resulted in a CMF of 0.67, which indicates that the number of crashes expected to occur at a DDI would be 67% of the total crashes expected to occur at a standard diamond interchange. Given the fact that 34 crashes occurred at the ramp termini from 2015-2017 (when the interchange was configured as a standard diamond), a total of 23 crashes would have been expected to occur during the same period if the interchange were a DDI. In summary, the DDI alternative is preferred from a safety perspective due to the expected reduction in crashes compared to the standard diamond alternative.

Policy Point #2

“Policy Point 2: The proposed access connects to a public road only and will provide for all traffic movements. Less than “full interchange” may be considered on a case-by-case basis for applications requiring special access, such as 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)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analysis to the partial-interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design.”

The existing interchange provides full access to SR 39, a public roadway. The preferred alternative does not change the access at the interchange – it will remain a full access interchange to a public roadway. Since a “full interchange” will remain, no additional analysis or consideration is necessary for Policy Point #2.

APPENDIX G
PUBLIC INVOLVEMENT

From: McKinney, Duane
Sent: Monday, August 20, 2018 2:03 PM
To: Prasad, Dandi <Dandi.Prasad@wsp.com>; Gilyeat, Richard <RGilyeat@indot.IN.gov>
Subject: SR 39/I-70 DDI Interchange - Discussion with Ted Everett Farm Equipment

Dandi/Richard,

I spoke with Ted Everett, 317-370-3113, on Friday afternoon August 17th, 2018. Ted is the owner of Ted Everett Farm Equipment off the corner of SR 39 and Keller Hill Rd, just south of the interchange. Everett Farm Equipment has oversized deliveries to and from his business on a daily basis, mostly coming from I-70.

He is limited on alternative routes he can utilize during construction for equipment delivery. Using the CR Overpass to the west (Hazelwood Rd/CR 0, CR 1000 S, Keller Hill) has narrow county road bridges limiting oversized loads. His other access is off the I-70 Little Point Interchange via SR 42 over to SR 39, but that requires going through downtown Monrovia which can be troublesome.

Ted indicated they would prefer a 16' clear width be provided through the construction zone if possible, but that a 14' min clear width may be sufficient. The majority of their equipment can be necked down to less than 14' width but they do have some combines that are 16'.

He also mentioned they hold a farm show in the fall – with over 3000 people in attendance and over 300 semis of equipment delivered for that show.

I told Ted we would take a look at our maintenance of traffic plan, see what minimum clear roadway widths we can maintain, and get back to him after our Stage 2 plan submission is complete here in a month or so.

Let me know if you have questions, Thanks

Duane McKinney, P.E.
Area Manager, Vice President



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