

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

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

Road No./County:

King Road/ Marshall County

Designation Number:

Des. No. 1600931

Project Description/Termini:

The proposed project involves the replacement of Marshall County Bridge No. 73 (Bridge No. 50-00073) on King Road from the intersection with Plymouth-Goshen Trail (road) to 0.22 mile south of the intersection with Plymouth-Goshen Trail (road).

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):

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

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

Approval

ESM Signature _____

Date _____

ES Signature _____

Date _____

FHWA Signature

Date

Release for Public Involvement

N/A

ESM Initials

Date _____

BDM REB

ES Initials

3/20/2020

Date

Certification of Public Involvement

Office of Public Involvement

Date

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

INDOT ES/District Env.

Reviewer Signature: _____

Date: _____

Name and Organization of CE/EA

Preparer: _____

Ruth Hook/Lochmueller Group, Inc.

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

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*? Yes No
If No, then:
Opportunity for a Public Hearing Required?

*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 Entry letters were mailed to potentially affected property owners within the project area on January 17, 2018 notifying them about the project and that individuals responsible for land surveying and field activities may be seen in the area. A sample copy of the Notice of Entry letter is included in Appendix G, pages G1 to G3.

A public information meeting was held on February 27, 2019. Two members of the public attended, and no verbal comments were received during the meeting. One public comment was received on April 22, 2019 (Appendix G, page G16). The commenter had questions related to the extent of the new bridge, the right-of-way (ROW) acquisition, and the removal of existing fences and corner posts. The designer, USI Consultants, responded to the comment on April 22, 2019 (Appendix G, pages G17 to G18).

The project will meet the minimum requirements described in the current INDOT *Public Involvement Manual* which requires 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.

Public Controversy on Environmental Grounds

Will the project involve substantial controversy concerning community and/or natural resource impacts? Yes No

Remarks: At this time, there is no substantial public controversy concerning impacts to the community or to natural resources.

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

Sponsor of the Project: Marshall County INDOT District: LaPorte
Local Name of the Facility: King Road

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

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

Indiana Department of Transportation

County Marshall Route King Road Des. No. 1600931

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 need for the project stems from the deteriorating condition of the existing structure. The current Bridge Inspection Report dated October 24, 2019, assigned a condition rating of 4 out of 9 for the superstructure, substructure, and deck, all of which exhibited advanced deterioration. A rating of 4 is considered "poor condition." Noticeable examples of such deterioration included heavy seepage and leaching between the beams (Appendix J, pages J1 to J44). Several beams were also cracked and spalled with exposed strands. Several strands were severed, and bent caps were cracked. Some piles were completely rusted through. Additionally, the inspection report noted that the waterway occasionally overtops the bridge deck and approaches due to poor hydraulic capacity, resulting in delays from temporary closures and having to detour traffic. Scour was observed at the end bents of the bridge. This resulted in a condition rating of 4 out of 9 for the waterway adequacy as well. The bridge has an estimated remaining lifespan of 10 to 15 years.

The purpose of the project is to reduce the flooding and overtopping of the bridge deck and approaches by improving hydraulic capacity and extend the service life of this crossing to a minimum of 20 years. The purpose is also to increase the condition ratings of the superstructure, substructure, and deck to a minimum of 8 out of 9 which is considered "very good condition".

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Marshall County Municipality: N/A

Limits of Proposed Work: The project extends from the intersection of King Road with Plymouth-Goshen Trail (road) to 0.22 mile south of the intersection with Plymouth-Goshen Trail (road).

Total Work Length: 0.22 mile Mile(s) Total Work Area: 2.24 Acre(s)

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

Yes ¹	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
Date: <input style="width: 80%;" type="text"/>	

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.

Marshall County and the Federal Highway Administration (FHWA) propose to proceed with a federal-aid bridge replacement project on King Road in Marshall County, Indiana (Des. No. 1600931).

Location

The project is located approximately 0.54 mile east of US 31. More specifically, the project is located in Center Township within Township 34 North, Range 2 East, Section 26 as depicted on the Plymouth USGS Quadrangle (Appendix B, page B2).

Existing Conditions

The existing structure (Bridge #50-00073) is a four span bridge built in 1966 and is 152 feet long with a 24-foot, 4-inch clear roadway width and a 20° skew. The bridge was determined to not be a historic bridge as it is not identified on the Historic Bridge Inventory. The structure carries King Road over Yellow River outside Plymouth, Marshall County, Indiana. The existing bridge cross section consists of two 11-foot travel lanes (one in each direction), a 1-foot grass shoulder on each side, and a 1-foot curb on each side of the bridge. The Yellow River flows from east to west beneath King Road

This is page 3 of 28 Project name: Marshall County Bridge #73 Bridge Replacement Project Date: March 19, 2020

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

(Appendix B, page B3). According to routine inspections in October of 2019, the bridge had a sufficiency rating of 47.6. The inspection noted heavy seepage and leaching was identified between the beams (Appendix J, pages J1 to J44). Some piles were completely rusted through. Additionally, the inspection report noted that the waterway occasionally overtops the bridge deck and approaches. Scour was observed at the end bents of the bridge. Adjacent land use within the project area is primarily rural, with farm fields and forested areas generally surrounding the project (Appendix B, pages B5 to B14).

King Road is functionally classified as a major collector. The posted speed limit is 45 miles per hour. The existing roadway section of King Road within the project area consists of two asphalt travel lanes (one northbound and one southbound) that vary in width from 9 feet and 11 inches to 11 feet and 2 inches and 3-foot vegetated shoulders on both sides of the roadway.

Preferred Alternative

The preferred alternative will remove and replace the existing bridge with a 3 span, precast concrete I beam type II bridge. The three spans will be 52 feet 9 inches, 62 feet, and 52 feet 9 inches with a 12° skew for a total bridge length of 167 feet 5 inches. The stream channel of the Yellow River will be realigned as a part of this project to improve the hydraulic opening and help reduce overtopping events of the bridge and roadway. The new bridge will have a 12° skew rather than the existing 20° skew to match the crossing angle of the realigned stream channel in order to reduce scour. The new bridge will also be vertically elevated by a maximum of 2 feet from the existing bridge deck. The clear roadway width will be 29 feet and 4 inches. The bridge will be wider in order to accommodate wider shoulders and to comply with all INDOT roadway design criteria and Indiana Department of Natural Resources (IDNR) hydraulic criteria. The typical cross section of King Road on the structure will consist of two 11-foot travel lanes (one in each direction), a 3-foot 8-inch paved shoulder on each side of the roadway, and concrete railings on both sides of the bridge.

The construction of the new structure will include embankment widening and benching the sideslopes to allow for a wider hydraulic opening along the channel of the Yellow River. An existing 3-foot diameter, 75-foot long corrugated metal pipe will be removed. Excavation within the Yellow River will occur in order to install the substructure units. Approximately 0.18 acre of revetment riprap will be added to the spill slopes as scour protection. A 6-inch diameter drain pipe that is 50 feet in length will be constructed at both end bents.

The typical cross section of King Road as it approaches the structure consists of two travel lanes (one in each direction) that vary in width from 9 feet and 11 inches to 11 feet and 2 inches. From approximately 405 feet south of the bridge to the bridge, King Road will be reconstructed in order to raise the roadway to match the proposed increased height of the bridge. This reconstruction will raise the roadway profile a maximum of 2-feet 3-inches. North of the bridge, King Road will be reconstructed for approximately 460 feet in order to raise the roadway to match the proposed increased height of the bridge. This reconstruction will raise the roadway profile a maximum of 2-feet 3-inches. From 50 feet south to 110 feet north of the Plymouth Goshen Trail (east/west roadway intersecting the project area approximately 600 feet north of the bridge) and King Road intersection, King Road will be milled to a maximum depth of 1.5 inches and resurfaced with hot mix asphalt. The depth of the hot mix asphalt will vary in depth from 2.5 inches to 7 inches in order to raise the profile grade of the roadway to match the profile of the reconstructed portion of King Road. The approach roadway both north and south of the bridge will continue to consist of two travel lanes (one in each direction) that vary in width from 9 feet and 11 inches to 11 feet and 2 inches, with a paved shoulder on both sides of the roadway that varies in width from 1 foot to 4 feet, and W-Beam Guardrail on both sides of the roadway (Appendix B, pages B15 to B24). No work will occur along Plymouth-Goshen Trail (road).

An existing vegetated private drive will be replaced with a 12-foot wide modified field entrance in the southwest quadrant of the project area, approximately 230 feet south of the bridge. A 10-foot wide modified field entrance will be constructed in the northwest quadrant of the project area, 120 feet north of the bridge. South of the bridge, 30 feet of 12-foot diameter pipe will be constructed on both the east and west sides of King Road in order to convey drainage. On the north side of the bridge, drainage will be conveyed to the Yellow River via sheet flow and flow via Wetland 1 and Wetland 3. These wetlands will not be drained.

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

Please refer to Appendix B for maps depicting the project area (pages B1 to B4), photographs of the project area (pages B5 to B14), and the Design Plans (pages B15 to B24). Analysis of the project's impacts on the natural and human environment shows that the project is anticipated to impact the Yellow River and wetlands identified in the project area. A U.S. Army Corps of Engineers (USACE) Section 404 permit and an Indiana Department of Environmental Management (IDEM) Section 401 Water Quality Certification (WQC) will be required. Additionally, an archaeological site was identified within the project area. More information on the site is included in the *Cultural Resources* section of this document. Commitments to prevent impacts to the site are included in the *Environmental Commitments* section of this document.

Maintenance of traffic (MOT)

The construction of the project will require the removal of the existing structure. Therefore, constructing the project while maintaining one lane of traffic is not feasible. Therefore, the maintenance of traffic (MOT) plan for the project requires the temporary closure of King Road for the duration of the project. During this time, traffic will be required to use a detour route. The official detour for local traffic utilizes King Road, Plymouth-Goshen Trail (road), Jarrah Road, and 8A Road. The detour route is approximately 4.2 miles long. The official detour for truck traffic utilizes US 31, US 6, SR 331, and US 30. The detour route is approximately 35 miles long (Appendix B, pages B18 to B19). The MOT will be implemented per the *Indiana Design Manual* guidelines.

Right-of-Way (ROW)

The project will require the acquisition of 2.10 acres of permanent ROW and 0.14 acre of temporary ROW (Appendix B, pages B3 and B21 to B22). No relocations will be required. Approximately 1.1 acres of tree clearing is expected to occur as a result of the project.

Logical Termini & Independent Utility

The project termini are logical as they extend to the minimum extent needed to accommodate the removal of the existing structure and the construction of the more structurally sufficient structure. The project has independent utility as it does not require the completion of any other projects in order to improve this bridge crossing.

The preferred alternative satisfies the purpose and need for the project by restoring the structural integrity of the bridge to provide safe vehicular crossing over the Yellow River, improving the hydraulic capacity of this crossing, and reducing the overtopping of the bridge and roadway by the Yellow River.

OTHER ALTERNATIVES CONSIDERED:

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

No Build Alternative: This alternative would not involve any improvements to the existing structure. While this alternative eliminates costs and any environmental impacts, it would not have met the objectives of the purpose and need of the project. Therefore, this alternative was discarded from further consideration.

Structure Rehabilitation: This alternative would involve replacing the deck and superstructure of the existing structure. It would also involve rehabilitating the end bents and piers. However, this alternative would not address the deteriorated condition of the steel pile substructure units. While this alternative would temporarily extend the life span of the structure to an estimated 20-30 years, the purpose and need would not be fully addressed as the incidences of the Yellow River overtopping the bridge would not be reduced, the hydraulic capacity would not be improved, and the substructure deterioration would not be addressed, resulting in a shorter life span than the Preferred Alternative. Therefore, this alternative was dismissed.

No other alternatives were considered for this project.

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

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)

X
X

ROADWAY CHARACTER:

King Road:

Functional Classification: Major Collector
 Current ADT: 1,250 VPD (2016) Design Year ADT: 1,975 VPD (2036)
 Design Hour Volume (DHV): 10 Truck Percentage (%) 5
 Designed Speed (mph): 45 Legal Speed (mph): 45

Existing

Proposed

Number of Lanes:	2		2	
Type of Lanes:	Travel		Travel	
Pavement Width:	Varies 9'11" to 11'2"	ft.	Varies 9'11" to 11'2"	ft.
Shoulder Width:	3	ft.	Varies 1 to 4	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

Plymouth-Goshen Trail (road):

Functional Classification: Local Road
 Current ADT: Unknown VPD (2016) Design Year ADT: Unknown VPD (2036)
 Design Hour Volume (DHV): Unknown Truck Percentage (%) Unknown
 Designed Speed (mph): 40 Legal Speed (mph): 40

Existing

Proposed

Number of Lanes:	2		2	
Type of Lanes:	Travel		Travel	
Pavement Width:	10	ft.	10	ft.
Shoulder Width:	1	ft.	1	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 Marshall

Route King Road

Des. No. 1600931

DESIGN CRITERIA FOR BRIDGES:

Structure/NBI Number(s): Bridge #50-00073/ 5000058 Sufficiency Rating: 47.6
 (Bridge Inspection, October 24, 2019)

Existing **Proposed**

Bridge Type:	Prestressed concrete box beam		Precast concrete I beam type II	
Number of Spans:	4		3	
Weight Restrictions:	N/A	ton	N/A	ton
Height Restrictions:	N/A	ft.	N/A	ft.
Curb to Curb Width:	24'4"	ft.	29'4"	ft.
Outside to Outside Width:	26'4"	ft.	32'4"	ft.
Shoulder Width:	2	ft.	4	ft.
Length of Channel Work:			123	ft.

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

Remarks: The project will involve the existing Marshall County Bridge 73 structure (Bridge #50-00073) which carries King Road over Yellow River. The project will impact a total of 123 linear feet of Yellow River. An existing 3-foot diameter, 75-foot long corrugated metal pipe will be removed. No other bridges or structures are proposed or will be impacted by the project.

Yes **No** **N/A**

Will the structure be rehabilitated or replaced as part of the project?
If the proposed action has multiple bridges or small structures, this section should be filled out for each structure.

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	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: The MOT will require the temporary closure of King Road (Appendix B, pages B18 to B19). During this time, traffic will be required to use a detour route. The official detour for local traffic utilizes King Road, Plymouth-Goshen Trail (road), Jarrah Road, and 8A Road. The detour route is approximately 4.2 miles long. The official detour for truck traffic utilizes US 31, US 6, SR 331, and US 30. The detour route is approximately 35 miles long (Appendix B, pages B18 to B19). King Road is anticipated to be closed with a detour for nine months. The MOT will be implemented per the *Indiana Design Manual* guidelines

The closure will pose a temporary inconvenience to traveling motorists (including school buses and emergency services), however no significant delays are anticipated, and all inconveniences will cease upon project completion.

Indiana Department of Transportation

County Marshall Route King Road Des. No. 1600931

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: \$ 337,100.00 (2018 & 2020) Right-of-Way: \$ 62,000.00 (2021) Construction: \$ 2,093,000 (2022)

Anticipated Start Date of Construction: Spring of 2022

Date project incorporated into STIP July 2, 2019

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

If yes,

Name of MPO Michiana Area Council of Governments (MACOG)

Location of Project in TIP Page 51 of the MACOG FY 2020-2024 (Appendix H, page H1)

Date of incorporation by reference into the STIP July 2, 2019

RIGHT OF WAY:

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0.37	0.13
Commercial	0.00	0.00
Agricultural	0.21	0.00
Forest	1.22	0.01
Wetlands	0.14	0.00
Other: (Yellow River)	0.16	0.00
Other:	0.00	0.00
TOTAL	2.10	0.14

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: Within the project area, the existing ROW varies from 8 feet to 12 feet from the centerline on the west side of King Road, and from 12 to 18 feet from the centerline on the east side of King Road.

The project will require 2.10 acres of permanent ROW and 0.14 acre of temporary ROW. The permanent ROW consists of forested, agricultural, wetland, river, and residential land use; and the temporary ROW consists of residential and forested land use (Appendix B, page B3). The proposed ROW will vary from 44 feet to 76 feet from the centerline on the west side of King Road, and from 23 feet to 74 feet from the centerline on the east side of King Road.

If the scope of work or permanent or temporary ROW amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately.

This is page 8 of 28 Project name: Marshall County Bridge #73 Bridge Replacement Project Date: March 19, 2020

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

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	X	X	

Remarks: Based on a desktop review, a site visit on September 25 and 26, 2018 and October 2, 2018 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3), and the water resource map in the Red Flag Investigation (RFI) report (Appendix E, pages E1 to E12), there are nine streams located within the 0.5 mile search radius. There is one stream present within the project area.

A Waters of the U.S. Determination/Wetland Delineation Report was completed for the project on November 16, 2018. Please refer to Appendix F, pages F1 to F38 for the *Waters of the U.S. Determination/Wetland Delineation Report*. It was determined that one stream, the Yellow River, is located within the project area. The Yellow River flows northeast to southwest through the project area. The Yellow River is likely to be considered a Water of the U.S. because it is a Traditionally Navigable Water (TNW) within the project limits. The USACE makes all final determinations regarding jurisdiction.

A total of approximately 123 linear feet (0.24 acre below the ordinary high water mark) of the Yellow River will be impacted by the project for the placement of the piles and placement of riprap on the sideslopes (Appendix B, page B4 and Appendix F, page F12). Impacts will be limited to the portion of the stream within the construction limits of the project. Mitigation is required when cumulative impacts meet or exceed 300 linear feet and 0.1 acre of impact to stream and wetlands below the ordinary high water mark (OHWM). Since there are 0.24 acre of impacts below the OHWM, which exceeds the 0.1-acre threshold mitigation is likely to be required. Additionally, 0.14 acre of impacts to wetlands are anticipated; see the *Wetlands* section of this document for more information. The cumulative impacts of 0.38 acre to streams and wetlands exceeds the 0.1-acre threshold. Therefore, mitigation is likely to be required.

Early coordination letters were sent to the U.S. Fish and Wildlife Service (USFWS), IDNR Division of Fish and Wildlife (DFW), and the USACE on June 20, 2018 (Appendix C, pages C1 to C4).

The USFWS responded on July 13, 2018 with several recommendations to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources to the greatest extent possible (Appendix C, pages C19 to C21). The USFWS suggested that a 3-span bridge design with piles or piers away from the center of the river be utilized because debris often accumulates on center piles. The preferred alternative proposes to place the bridge piers away from the center of the river. The USFWS also stated that this reach of the Yellow River is an "Other Important Mussel Stream". Although no Federal or State listed mussel species are found in the river, it does support important mussel beds and contains quality instream habitat. Therefore, preservation of the existing riparian corridor, enhancement/restoration of the corridor, erosion control, and other activities to maintain this high-quality reach of the Yellow River are important and need to be recognized during any construction projects affecting this portion of the river. This and USFWS standard applicable recommendations for the project are included in the *Environmental Commitments* section of this document.

Indiana Department of Transportation

County Marshall Route King Road Des. No. 1600931

The IDNR DFW responded on July 20, 2018 with recommendations about wildlife passage and bank stabilization; riparian habitat; cofferdams; causeways and runarounds; and recommendations to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources to the greatest extent possible (Appendix C, pages C50 to C53). Applicable recommendations provided by the IDNR DFW are included in the *Environmental Commitments* section of this document.

The USACE responded on August 24, 2018 with no specific concerns or recommendations regarding streams, rivers, watercourses, or jurisdictional ditches (Appendix C, pages C54 to C56).

Other Surface Waters	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Reservoirs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Farm Ponds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detention Basins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storm Water Management Facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remarks: Based on a desktop review, a site visit on September 25 and 26, 2018 and October 2, 2018 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3), and the water resource map in the RFI report (Appendix E, pages E1 to E12), there are six other surface waters within the 0.5 mile search radius. No other surface waters are present within the project area; therefore, no impacts are expected.

A *Waters of the U.S. Determination/Wetland Delineation Report* was completed for the project on November 16, 2018. Please refer to Appendix F, pages F1 to F38 for the *Waters of the U.S. Determination/Wetland Delineation Report*. No other surface waters were identified within the project area.

Early coordination letters were sent to the USFWS, IDNR DFW, and the USACE on June 20, 2018 (Appendix C, pages C1 to C4).

The USFWS responded on July 13, 2018 with no specific concerns or recommendations regarding other surface waters (Appendix C, pages C19 to C21).

The IDNR DFW responded on July 20, 2018 with no specific concerns or recommendations regarding other surface waters (Appendix C, pages C50 to C53).

The USACE responded on August 24, 2018 with no specific concerns or recommendations regarding other surface waters (Appendix C, pages C54 to C56).

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

Total wetland area: 1.13 acre(s) Total wetland area impacted: 0.14 acre(s)

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

Indiana Department of Transportation

County Marshall Route King Road Des. No. 1600931

Wetland No.	Classification	Total Size (Acres)	Impacted Acres	Comments
Wetland 1	PEM1A	0.48	0.03	This wetland developed due to floodplain flooding and ponding east of King Road, north of the Yellow River.
Wetland 2	PEM1A	0.11	0.04	This wetland developed due to floodplain flooding and ponding west of King Road, south of the Yellow River.
Wetland 3	PEM1A	0.54	0.07	This wetland developed due to floodplain flooding and ponding west of King Road, north of the Yellow River.

Documentation

ES Approval Dates

Wetlands (Mark all that apply)

Wetland Determination
 Wetland Delineation
 USACE Isolated Waters Determination
 Mitigation Plan

X
X

N/A
N/A

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

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

X
X
X

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

Remarks: Based on a review of the National Wetlands Inventory (NWI) online mapper (<https://www.fws.gov/wetlands/data/Mapper.html>), a site visit on September 25 and 26, 2018 and October 2, 2018 by Lochmueller Group, the USGS topographic map (Appendix B, page B2), and the water resource map of the RFI report (Appendix E, pages E1 to E12), there are seventeen NWI-wetlands located within the 0.5 mile search radius. There is one NWI-wetland located within the project area.

A *Waters of the U.S. Determination / Wetland Delineation Report* was completed for the project on November 16, 2018. Please refer to Appendix F, pages F1 to F38 for the *Waters of the U.S. Determination / Wetland Delineation Report*. It was determined that three wetlands; Wetland 1, Wetland 2, and Wetland 3; are located within the project area. These can be seen on the Water Resources Map in Appendix F, page F12. The wetlands are likely considered Waters of the U.S. due to hydrologic connectivity to the Yellow River, a TNW. The USACE makes all final determinations regarding jurisdiction.

Wetland 1 is a palustrine, emergent, persistent, temporarily flooded (PEM1A) wetland according to the classifications defined by Cowardin *et al.* (1979). Wetland 1 is 0.48 acre in size. This wetland developed due to floodplain flooding and ponding. Based on a qualitative analysis of Wetland 1, this wetland is of average quality due to its position within the floodplain of Yellow River. Approximately 0.03 acre of Wetland 1 will be impacted within the construction limits due to grading (Appendix B, pages B21 to B22). Avoidance of Wetland 1 cannot occur due to the need to change the grade in this area to construct the bridge to adhere to current design standards and reduce overtopping of the bridge by the Yellow River.

Wetland 2 is a palustrine, emergent, persistent, temporarily flooded (PEM1A) wetland according to the classifications defined by Cowardin *et al.* (1979). Wetland 2 is 0.11 acre in size. This wetland developed due to floodplain flooding and ponding. Based on a qualitative analysis of Wetland 2, this wetland is of average quality due to its position within the floodplain of Yellow River. Approximately 0.04 acre of Wetland 2 will be impacted within the construction limits for the placement of riprap and excavation activities to widen the channel of the Yellow River (Appendix B, page B21). Avoidance of Wetland 2 is not feasible because of the need to address scour protection and construct a hydraulically sufficient crossing of the Yellow River.

Indiana Department of Transportation

County Marshall Route King Road Des. No. 1600931

Wetland 3 is a palustrine, emergent, persistent, temporarily flooded (PEM1A) wetland according to the classifications defined by Cowardin *et al.* (1979). Wetland 3 is 0.54 acre in size. This wetland developed due to floodplain flooding and ponding. Based on a qualitative analysis of Wetland 3, this wetland is of poor quality due to the lack of biodiversity. Approximately 0.07 acre of Wetland 3 will be impacted within the construction limits due to grading (Appendix B, pages B21 to B22). Avoidance of Wetland 3 cannot occur due to the need change the grade in this area to construct the bridge to adhere to current design standards and reduce overtopping of the bridge by the Yellow River.

Wetlands outside of the construction area will be marked on plans as “do not disturb” and orange fencing will be used to separate these wetlands that are not to be impacted by construction activities. This is included in the *Environmental Commitments* section of this document.

Mitigation is required when cumulative impacts meet or exceed 300 linear feet and 0.1 acre of impact to wetlands and streams below the OHWM. Cumulative impacts to wetlands are anticipated to be 0.14 acre. Therefore, mitigation is anticipated.

All efforts to reduce construction limits and required ROW have been made during design. There is no practicable alternative to the proposed new construction in wetlands and the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. INDOT approval of this document will constitute approval of the adverse impacts to wetlands.

Early coordination letters were sent to the USFWS, IDNR DFW, and the USACE on June 20, 2018 (Appendix C, pages C1 to C4).

The USFWS responded on July 13, 2018 but did not provide any recommendations related to the wetlands (Appendix C, pages C19 to C21).

The IDNR, DFW responded on July 20, 2018, with recommendations about wetland habitat and recommendations to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources to the greatest extent possible (Appendix C, pages C50 to C53). Applicable recommendations provided by the IDNR DFW are included in the *Environmental Commitments* section of this document.

The USACE responded on August 24, 2018 (Appendix C, pages C54 to C56). Their response did not include any recommendations related to wetlands.

Terrestrial Habitat

Unique or High Quality Habitat

<u>Presence</u>	<u>Impacts</u>	
	<u>Yes</u>	<u>No</u>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<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: Based on a desktop review, a site visit on September 25 and 26, 2018 and October 2, 2018 by Lochmueller Group and the aerial map of the project area (Appendix B, page B3), there is forested habitat, wetland habitat, and vegetated roadside present within the project area. Dominant herbaceous species include reed canary grass (*Phalaris arundinacea*), common bulrush (*Scirpus atrovirens*), common plantain (*Plantago major*), Kentucky bluegrass (*Poa pratensis*), wild chives (*Allium schoenoprasum*), rice cut grass (*Leersia oryzoides*), lady’s thumb (*Persicaria longiseta*), jumpseed (*Persicaria virginiana*), American pokeweed (*Phytolacca americana*), beggars lice (*Hackelia virginiana*), spotted lady’s thumb (*Persicaria maculosa*), clearweed (*Pilea pumila*), and stinging nettle (*Urtica dioica*). Dominant tree species include honey locust (*Gelditsia triacanthos*), slippery elm (*Ulmus rubra*), black walnut (*Juglans nigra*), swamp white oak (*Quercus bicolor*), black cherry (*Prunus serotina*), and silver maple (*Acer saccharinum*). Approximately 1.1 acre of tree clearing will occur in the prior to the closure of tree clearing restrictions (March 31st) in Spring of 2022. Approximately 0.6 acre this tree

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

clearing will occur within the floodplain of the Yellow River. Mitigation is anticipated to occur. Avoidance of this tree clearing is not possible as it is necessary in order to accommodate the new structure that meets current design standards and would not address the purpose and need of the project.

Early coordination letters were sent to the USFWS and IDNR DFW on June 20, 2018 by Lochmueller Group (Appendix C, pages C1 to C4).

The USFWS responded on July 13, 2018 with recommendations to limit tree clearing to the minimum needed to construct the project and that a large bur oak at the base of the roadway fill within the northeastern quadrant of the project area be left in place (Appendix C, pages C19 to C21). The large bur oak tree will be left in place and is marked as "Do Not Disturb" on the design plans (Appendix B, page B21). The applicable recommendations for the project are listed in the *Environmental Commitments* section of this document.

The IDNR DFW responded on July 20, 2018 with comments and recommendations related to tree removal (Appendix C, pages C50 to C53). Applicable recommendations provided by IDNR DFW can be found in the *Environmental Commitments* section of this document.

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

Karst

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

Yes	No
	X
	X

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

--	--

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

Remarks:

Based on a desktop review, the project is located outside the designated karst region of Indiana as outlined in the October 13, 1993 Memorandum of Understanding (MOU). According to the topographic map of the project area (Appendix B, page B2) and the RFI report (Appendix E, pages E1 to E12), there are no karst features identified within or adjacent to the project area. In the early coordination response, the Indiana Geological Survey (IGS) did not indicate that karst features exist in the project area (Appendix C, pages C14 to C16). The IGS early coordination response also indicated a high liquefaction potential, a 1 percent annual chance of flood hazard, a moderate potential for bedrock resources, a high potential for sand and gravel resources, and petroleum exploration wells in the survey area. Additionally, the RFI report identified twelve petroleum wells within the 0.5 mile search radius and one petroleum well is in the project area (Appendix E, page E10). An early coordination letter was sent to IDNR Oil & Gas Division on September 25, 2019. No response was received. The response from IGS was communicated to the designer on September 25, 2019. No impacts are expected.

Threatened or Endangered Species

Within the known range of any federal species
 Any critical habitat identified within project area
 Federal species found in project area (based upon informal consultation)
 State species found in project area (based upon consultation with IDNR)

	Presence	Impacts	
		Yes	No
Within the known range of any federal species	X		X
Any critical habitat identified within project area			
Federal species found in project area (based upon informal consultation)			
State species found in project area (based upon consultation with IDNR)	X		X

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

Indiana Department of Transportation

County Marshall Route King Road Des. No. 1600931

Remarks: Based on a desktop review and the RFI report (Appendix E, pages E1 to E12), completed by Lochmueller Group on April 4, 2018, the IDNR Marshall County Endangered, Threatened and Rare (ETR) Species List has been checked and is included in Appendix E, pages E11 to E12. The highlighted species on the list reflect the federal and state identified ETR species located within the county. According to the IDNR DFW early coordination response letter dated July 20, 2018 (Appendix C, pages C50 to C53), the Natural Heritage Program's Database has been checked and the Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), state endangered, Northern Leopard Frog (*Lithobates pipiens*), state special concern, and American Badger (*Taxidea taxus*), state special concern, have been documented within 0.5 mile of the project area. The IDNR does not anticipate impacts to the Yellow-headed Blackbird as a result of this project. Impacts to the American badger or its habitat are also unlikely because they prefer open, prairie type habitat and their range continues to expand due to land-use changes. To minimize impacts to Northern Leopard Frog, the IDNR recommends using entrenched silt fence around the project area prior to construction. This is included in the *Environmental Commitments* section of this document.

A bridge inspection by Lochmueller Group on June 6, 2018 did not identify any evidence of bats (Appendix C, pages C44 to C45). A USFWS Bridge/Structure Assessment shall take place no earlier than two (2) years prior to the start of construction. If construction will begin after June 6, 2020, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately.

Project information was submitted through the USFWS's Information for Planning and Consultation (IPaC) portal, and an official species list was generated. The project is within range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*). When the project was originally submitted through IPaC on June 12, 2018, additional species were included in the species list. These species included clubshell (*Pleurobema clava*), Eastern massasauga (*Sistrurus catenatus*), Rayed bean (*Villosa fabalis*), and sheepsnose mussel (*Plethobasus cyphus*). An updated species list was generated on December 30, 2019 and no additional species were found within or adjacent to the project area other than the Indiana bat and northern long-eared bat (Appendix C, pages C22 to C27).

This project qualifies for the *Range-wide Programmatic Consultation for the Indiana Bat and Northern Long-Eared Bat (NLEB)*, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Administration (FRA), Federal Transit Administration (FTA), and USFWS. An effect determination key was completed on June 22, 2018, and based on the responses provided, the project was found to "May Affect, Not Likely to Adversely Affect" the Indiana bat and/or the NLEB (Appendix C, pages C28 to C42). INDOT reviewed and verified the effect finding on June 22, 2018, and requested USFWS's review of the finding (Appendix C, page C43). No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding. Avoidance and Mitigation Measures (AMMs) are included as firm commitments in the *Environmental Commitments* section of this document.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act, as amended. If new information on endangered species at the site becomes available, or if project plans are changed, USFWS will be contacted for consultation.

This is page 14 of 28 Project name: Marshall County Bridge #73 Bridge Replacement Project Date: March 19, 2020

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

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)

	<u>Presence</u>	<u>Impacts</u>	
		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:

The project is located in Marshall County, which is not located within the area of the St. Joseph Sole Source Aquifer, the only legally designated sole source aquifer in the state of Indiana. Therefore, the *FHWA/EPA Sole Source Aquifer Memorandum of Understanding (MOU)* is not applicable to this project. Therefore, a detailed groundwater assessment is not needed and no impacts are expected.

The Indiana Department of Environmental Management's Wellhead Proximity Determinator website (<http://www.in.gov/idem/cleanwater/pages/wellhead/>) was accessed on December 8, 2019 by Lochmueller Group. This project is not located within a Wellhead Protection Area or Source Water Area. In an early coordination letter dated June 20, 2018, IDEM stated the project is not located within a wellhead area (Appendix C, pages C5 to C13). No impacts are expected.

The Indiana Department of Natural Resources Water Well Record Database website (<https://www.in.gov/dnr/water/3595.htm>) was accessed on September 25, 2019. Four (4) unconsolidated and one (1) borehole water wells were identified within the project area. Should it be determined during the right-of-way phase that these wells are affected, a cost to cure will likely be included in the appraisal to restore the wells.

Based on a desktop review of the INDOT MS4 website (<https://entapps.indot.in.gov/MS4/>) by Lochmueller Group on September 25, 2019, and the RFI report (Appendix E, pages E1 to E12); this project is not located in an Urban Area Boundary location. No impacts are expected.

Based on a desktop review, a site visit on September 25 and 26, 2018 and October 2, 2018 by Lochmueller Group, and the aerial map of the project area (Appendix B, page B3), this project is not located where there will be public water system impacts. Therefore, no impacts are expected.

Flood Plains

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

	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Longitudinal Encroachment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transverse Encroachment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Project located within a regulated floodplain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Homes located in floodplain within 1000' up/downstream from project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Remarks:

Based on a desktop review of the Indiana Department of Natural Resources Indiana Floodway Information Portal website (<http://dnrmmaps.dnr.in.gov/appsphp/fdms/>) by Lochmueller Group on September 26, 2019, and

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

the RFI report; a portion of this project is located in a regulatory floodplain as determined from approved IDNR floodplain maps (Appendix F, page F20). There is no floodplain administrator for Marshall County. This project qualifies as a Category 4 per the current INDOT CE Manual, which states:

“No homes are located within the base floodplain within 1,000 feet upstream and no homes are located within the base floodplain within 1,000 feet downstream. The proposed structure will have an effective capacity such that backwater surface elevations are not expected to substantially increase. As a result, there will be no substantial adverse impacts on natural and beneficial floodplain values; there will be no substantial change in flood risks; and there will be no substantial increase in potential for interruption or termination of emergency service or emergency evacuation routes; therefore, it has been determined that this encroachment is not substantial.”

Farmland	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Agricultural Lands	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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.

Based on a desktop review, a site visit on September 25 and 26, 2018 and October 2, 2018 by Lochmueller Group, and the aerial map of the project area (Appendix B, page B3), there is no land that meets the definition of farmland under the Farmland Protection Policy Act (FPPA) within or adjacent to the project area. Although there is agricultural land in the project area, the requirements of the FPPA do not apply to this project; therefore, no impacts are expected. An early coordination letter was sent on June 20, 2018, to Natural Resources Conservation Services (NRCS). The NRCS, in the early coordination response letter, dated July 13, 2018, stated the project would not cause a conversion of prime farmland (Appendix C, page C49).

SECTION C – CULTURAL RESOURCES

Minor Projects PA Clearance	Category	Type	INDOT Approval Dates	N/A
	<input type="text" value="B"/>	<input type="text" value="12"/>	<input type="text" value="December 27, 2019"/>	<input type="text"/>

**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

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

Documentation Prepared

Documentation (mark all that apply)

		ES/FHWA Approval Date(s)	SHPO Approval Date(s)
Historic Properties Short Report	<input type="checkbox"/>		
Historic Property Report	<input type="checkbox"/>		
Archaeological Records Check/ Review	X	July 19, 2019	August 14, 2019
Archaeological Phase Ia Survey Report	X	July 19, 2019	August 14, 2019
Archaeological Phase Ib Survey Report	X	December 27, 2019	N/A
Archaeological Phase Ic Survey Report	<input type="checkbox"/>		
Archaeological Phase II Investigation Report	<input type="checkbox"/>		
Archaeological Phase III Data Recovery	<input type="checkbox"/>		
APE, Eligibility and Effect Determination	<input type="checkbox"/>		
800.11 Documentation	<input type="checkbox"/>		

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

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:

Minor Project PA Category B projects

On December 27, 2019, the INDOT Cultural Resource Office (CRO) determined that this project falls within the guidelines of Category B, Type 12 under the Minor Projects Programmatic Agreement (Appendix D, pages D1 to D4). Category B, Type 12 projects involve the “Replacement, widening, or raising the elevation of the superstructure on existing bridges, and bridge replacement projects (when both the superstructure and substructure are removed), under the following conditions:

Condition A (Archaeological Resources)

ii. Work occurs in undisturbed soils and an archeological investigation conducted by the applicant and reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register- listed or potentially National Register-eligible archaeological resources, then full Section 106 review will be required. Copies of any archaeological reports prepared for the project will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE.

Condition B (Above-Ground Resources)

i. Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource.

An archaeological survey was required due to work occurring in areas of undisturbed soils. An archaeological records check and Phase 1a archaeological field reconnaissance was conducted by Weintraut & Associates, Inc (Appendix D, pages D6 to D10). One new archaeological site (12Mr0496) was encountered during the Phase 1a. The methodologies used during the Phase 1a were not sufficient to evaluate the site’s potential eligibility for listing in the NRHP and recommended a Phase 1b investigation if avoidance of Site 12Mr0496 was not possible. A Phase 1b Site Work Plan was developed by Cultural Resource Analysts (CRA) in July of 2019. This work plan was reviewed and approved by INDOT CRO on July 19, 2019. The work plan was then

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

provided to DHPA for their review and approval. DHPA approved the work plan August 14, 2019. The Phase 1b investigation was conducted in September 2019 (Appendix D, pages D11 to D15). The results of the survey indicated a narrow strip of apparently intact land between the ROW fence and the field edge. Three low resistance anomalies were identified that had moderate potential to represent prehistoric pit features, although two of these also had the potential to be disturbance related to the roadside fence. No features or evidence for intact deposits was found in any of the units or shovel probes, including those placed to investigate the geophysical anomalies, and only a low density of artifacts was recovered from within the A horizon. The portion of the site within the project ROW was determined to be ineligible, and no additional investigations were recommended. INDOT CRO approved the report on December 27, 2019 (Appendix D, page D5). DHPA approval was not required as INDOT CRO has determined that this project meets the parameters of the MPPA.

The applicability of the MPPA to this project is contingent upon ground disturbance being limited to the project ROW discussed in the MPPA determination form. Ground disturbance outside of this area adjacent to site 12Mr496 must be avoided. In the field, the site limits should be marked prior to construction with fencing or 4-inch by 4-inch wood posts to avoid accidental disturbance, and this area should be labeled "Avoidance Area – Do Not Disturb" on design plans. No soil disturbance should occur in this area. These are included in the *Environmental Commitments* section of this document.

No further consultation is required. This completes the Section 106 process 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

--

Indiana Department of Transportation

County Marshall Route King Road Des. No. 1600931

Historic Properties Sites eligible and/or listed on the NRHP	<u>Presence</u>	<u>Use</u>	
	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
 Evaluations Prepared			
Programmatic Section 4(f)* "De minimis" Impact* Individual Section 4(f)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	FHWA Approval date <input type="text"/>	

*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 prohibits the use of certain public and historic lands for federally funded transportation facilities unless there is no feasible and prudent alternative. The law applies to significant publicly owned parks, recreation areas, wildlife / waterfowl refuges, and NRHP eligible or listed historic properties regardless of ownership. Lands subject to this law are considered Section 4(f) resources.

Based on a desktop review, a site visit on September 25 and 26, 2018 and October 2, 2018 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3), the MPPA, and the RFI report (Appendix E, pages E1 to E12) there are no 4(f) resources located within the 0.5 mile search radius. There are no Section 4(f) resources within or adjacent to the project area. Therefore, no use is expected.

Section 6(f) Involvement	<u>Presence</u>	<u>Use</u>	
Section 6(f) Property	<input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

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

Remarks: The U.S. Land and Water Conservation Fund Act of 1965 established the Land and Water Conservation Fund (LWCF), which was created to preserve, develop, and assure accessibility to outdoor recreation resources. Section 6(f) of this Act prohibits conversion of lands purchased with LWCF monies to a non-recreation use.

A review of the Section 6(f) properties list on the INDOT ESD Environmental Policy website at <https://www.in.gov/indot/2523.htm> identified a total of 10 properties in Marshall County (Appendix J, page J45). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to 6(f) resources as a result of this project.

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

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 included in the Fiscal Year (FY) 2020-2024 Michiana Area Council of Governments (MACOG) Transportation Improvement Program (TIP) and the FY 2020-2024 Statewide Transportation Improvement Program (STIP) (Appendix H, pages H1 to H2).

This project is located in Marshall County, which is currently in attainment for all criteria pollutants according to IDEM (<https://www.in.gov/idem/airquality/2339.htm>). Therefore, the conformity procedures of 40 CFR Part 93 do not apply.

This project is of a type qualifying as a categorical exclusion (Group 1) 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.

SECTION F – NOISE

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

ES Review of Noise Analysis	No	Yes/ Date

Remarks:

This project is a Type III project. In accordance with 23 CFR 772 and the current *Indiana Department of Transportation Traffic Noise Analysis Procedure*, this action does not require a formal noise analysis.

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

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)

Yes	No
X	
	X
	X
	X
X	
X	

Remarks:

The project will ultimately be beneficial to local properties due to improvements to the deteriorating existing structure and reduced flooding. Overall, the negative impacts to property owners within the project area will be minimal and will consist primarily of short-term construction impacts. No relocations are expected. The project is not anticipated to result in substantial impacts to community cohesion, because it will not change access to properties within the area. The project is not expected to impact the surrounding community or cause economic impacts to the surrounding area. Therefore, this project will have minimal or no negative impacts to the community or local economy.

According to the Fairs and Festivals website (<https://www.indianafestivals.org/>), accessed on December 11, 2019 by Lochmueller Group, the annual Marshall County Blueberry Festival is scheduled September 2-5 in 2022, the year of construction. The festival is located approximately 3 miles southwest of the project.

The MOT may pose delays and temporary inconveniences to traveling motorists (including school buses, emergency services, and patrons of the Marshall County Blueberry Festival); however, all inconveniences will cease upon project completion. The project sponsor will be responsible for contacting school districts and emergency services at least 2 weeks prior to any construction activities that would limit access, this is included as a commitment in the *Environmental Commitments* section of this document.

The ADA Transition Plan for Marshall County was approved and implemented in 2012. There are no existing pedestrian facilities and no new pedestrian facilities are proposed as part of this project. Therefore, the project will comply with the published ADA Transition Plan and will not create any additional barriers to access.

Indirect and Cumulative Impacts

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

Yes	No
	X

Remarks:

Indirect impacts are effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate. Cumulative impacts affect the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions.

This project will not add substantial capacity to the existing roadway network or provide additional access to any currently undeveloped area. Therefore, the project is not expected to increase development in the area or result in substantial indirect or cumulative impacts.

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.*

Yes	No
	X

Indiana Department of Transportation

County Marshall Route King Road Des. No. 1600931

Remarks: Based on a desktop review, a site visit on September 25 and 26, 2018 and October 2, 2018 by Lochmueller Group, the aerial map of the project area (Appendix B, page B3) and the RFI report (Appendix E, pages E1 to E12), there are is one pipeline, owned by the Northern Indiana Public Service Company, located within the 0.5 mile of the project. The pipeline, owned by Northern Indiana Public Service Company (NIPSCO), is located within the project area. Additionally, a public airport, Plymouth Municipal Airport, is located within 3.8 miles (20, 000 feet) of the project area. Access to all properties will be maintained during construction.

Early coordination letters were sent to Marshall County Sheriff's Department, Plymouth Fire Department, INDOT Office of Aviation, and Plymouth Community School Corporation on June 20, 2018. The INDOT Office of Aviation replied on July 9, 2018 stating that the Plymouth Municipal Airport is located 1.4 nautical miles west-southwest of the project. They also stated that an Indiana Tall Structure permit may be required if the project involves the construction of a temporary (e.g. crane) or permanent structure greater than 70 feet above ground level. This project will not construct any temporary or permanent structures greater than 70 feet above ground level; therefore, no permit is needed. The other agencies did not respond to the early coordination letter.

An early coordination letter was sent to INDOT Utilities and Railroads on September 25, 2019. No response was received. The designer has begun utility coordination and a conflict analysis with the NIPSCO is ongoing.

It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access.

Environmental Justice (EJ) (Presidential EO 12898)

	Yes	No
During the development of the project were EJ issues identified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project require an EJ analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If YES, then:		
Are any EJ populations located within the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the project result in adversely high or disproportionate impacts to EJ populations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks: Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent ROW. The project will require 2.10 acres of permanent ROW and 0.14 acre of temporary ROW. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exists and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city or town and is called the community of comparison (COC). In this project, the COC is Center Township, Marshall County, Indiana. The community that overlaps the project area is called the affected community (AC). In this project, the AC is Census Tract 207.01, Marshall County, Indiana. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the American Community Survey five-year estimates data (2013-2017) was obtained from the US Census Bureau Website <https://factfinder.census.gov/> on December 11, 2019 by Lochmueller Group. The data collected for minority and low-income populations within the AC are summarized in the below table.

Indiana Department of Transportation

 County Marshall

 Route King Road

 Des. No. 1600931

Table: Minority and Low-Income Data (U.S. Census Bureau, American Community Survey 2013-2017)		
	COC <i>Center Township, Marshall County, Indiana</i>	AC <i>Census Tract 207.01, Marshall County, Indiana</i>
MINORITY		
Percent Minority	22.0%	12.2%
125% of COC	27.5%	AC < 125% COC
EJ Population of Concern		No
LOW-INCOME		
Percent Low-Income	16.6%	3.4%
125% of COC	20.8%	AC < 125% COC
EJ Population of Concern		No

*Refer to the INDOT EJ guidance for calculating percentages

The AC has a percent minority of 12.2% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain minority populations of EJ concern.

The AC has a percent low-income of 3.4% which is below 50% and is below the 125% COC threshold. Therefore, the AC does not contain low-income populations of EJ concern.

The census data sheets, map, and calculations can be found in Appendix I. No further environmental justice analysis is warranted.

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: Businesses: Farms: Other:

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

 Remarks: No relocations or people, businesses, or farms will take place as a result of the project.

SECTION H – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

Hazardous Materials & Regulated Substances (Mark all that apply)

Red Flag Investigation

Phase I Environmental Site Assessment (Phase I ESA)

Phase II Environmental Site Assessment (Phase II ESA)

Design/Specifications for Remediation required?

Documentation

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

No	Yes/ Date
-----------	------------------

ES Review of Investigations	June 20, 2018
------------------------------------	---------------

Include a summary of findings for each investigation.

 This is page 23 of 28 Project name: Marshall County Bridge #73 Bridge Replacement Project Date: March 19, 2020

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

Remarks: Based on a review of GIS and available public records, an RFI was approved on June 20, 2018 by INDOT Site Assessment & Management (SAM) (Appendix E, pages E1 to E12). No sites with hazardous material concerns (hazmat sites) or sites involved with regulated substances were identified in or within 0.5 mile of the project area. Since the RFI was approved more than a year ago, a supplemental review of the RFI GIS layers was performed by Lochmueller Group on December 11, 2019. The review identified one additional resource in the hazardous materials layer. The resource is a NPDES Facility located 0.37 mile southwest of the project area. The NPDES facility will not impact the project. Since no additional impact is expected from this resource, an RFI Addendum was not prepared. Further investigation for hazardous material concerns or regulated substances is not required at this time.

SECTION I – PERMITS CHECKLIST

Permits (mark all that apply)	<u>Likely Required</u>
Army Corps of Engineers (404/Section10 Permit)	
Individual Permit (IP)	<input type="checkbox"/>
Nationwide Permit (NWP)	<input type="checkbox"/>
Regional General Permit (RGP)	<input checked="" type="checkbox"/>
Pre-Construction Notification (PCN)	<input type="checkbox"/>
Other	<input type="checkbox"/>
Wetland Mitigation required	<input checked="" type="checkbox"/>
Stream Mitigation required	<input checked="" type="checkbox"/>
IDEM	
Section 401 WQC	<input checked="" type="checkbox"/>
Isolated Wetlands determination	<input type="checkbox"/>
Rule 5	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>
Wetland Mitigation required	<input checked="" type="checkbox"/>
Stream Mitigation required	<input checked="" type="checkbox"/>
IDNR	
Construction in a Floodway	<input checked="" type="checkbox"/>
Navigable Waterway Permit	<input type="checkbox"/>
Lake Preservation Permit	<input type="checkbox"/>
Other	<input type="checkbox"/>
Mitigation Required	<input checked="" type="checkbox"/>
US Coast Guard Section 9 Bridge Permit	
Others (Please discuss in the remarks box below)	
	<input type="checkbox"/>

Remarks: A total of 123 linear feet (0.24 acre below the ordinary high water mark) of the Yellow River will be impacted by the project. Impacts will be limited to the portion of Yellow River within the construction limits of the project. A total of 0.14 acre of wetland impacts to Wetlands 1 through 3 are anticipated to occur as part of the project. Impacts will be limited to the portion of Wetlands 1 2, & 3 within the construction limits of the project. A USACE Section 404 RGP and IDEM Section 401 Water Quality Certification (WQC) will be required due to the impacts to Yellow River and Wetlands 1-3. A formal jurisdictional determination has not yet been made by the USACE, which will be required during the permitting phase.

Mitigation is required when cumulative stream and wetland impacts meet or exceed 300 linear feet or 0.1 acre below the OHWM. Due to the cumulative impacts of 123 linear feet (0.24 acre) to the Yellow River and 0.14 acre to Wetlands 1 through 3, mitigation is likely required for the USACE Section 404 RGP and the IDEM Section 401 WQC.

According to the IDNR DFW early coordination response letter, dated July 20, 2018, formal approval by the IDNR under the regulatory programs administered by the Division of Water is required for this project

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

(Appendix C, pages C50 to C53). Therefore, a Construction in a Floodway Permit is required. Approximately 0.6 acre this tree clearing will occur within the floodplain of the Yellow River. Mitigation is anticipated to occur.

The project may disturb up to 2.24 acres of land. Therefore, the project is expected to exceed the minimal guidelines of soil disturbance and an IDEM Rule 5 Notice of Intent will be required.

Applicable recommendations provided by IDEM and IDNR are included in the *Environmental Commitments* section of this document. If permits are found to be necessary, the conditions of the permit will be requirements of the project and will supersede these recommendations.

It is the responsibility of the project sponsor, or their agent, to identify and obtain all required permits.

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. Any work in a wetland area within right-of-way or in borrow/waste areas is prohibited unless specifically allowed in the U.S. Army Corps of Engineers permit. (INDOT ESD)
2. If the scope of work or permanent or temporary right-of-way amounts change, INDOT ESD and the INDOT District Environmental Section will be contacted immediately. (INDOT ESD and INDOT LaPorte District)
3. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction activity that would block or limit access. (INDOT ESD)
4. USFWS Bridge/Structure Assessment shall take place no earlier than two (2) years prior to the start of construction. If construction will begin after June 6, 2020, an inspection of the structure by a qualified individual, must be performed. Inspection of the structure should check for presence of bats/bat indicators and/or presence of birds. The results of the inspection must indicate no signs of bats or birds. If signs of bats or birds are documented during this inspection, the INDOT District Environmental Manager must be contacted immediately. (INDOT ESD)
5. To minimize impacts to the Northern Leopard Frog (*Lithobates pipiens*), place an entrenched silt fence around the project area prior to construction. (IDNR)
6. The new, replacement, or rehabbed structure, and any bank stabilization under the structure, should not create conditions that are less favorable for wildlife passage under the structure compared to the current conditions. Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). Riprap may be used only at the toe of the sideslopes up to the ordinary high water mark (OHWM). The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to Northern Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. (IDNR)
7. Impacts to non-wetland forest of one (1) 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 (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees). (IDNR)
8. A native riparian forest mitigation plan should use at least 5 canopy trees and 5 understory trees or shrubs selected from the Woody Riparian Vegetation list or an approved equal. A native riparian forest mitigation plan for impacts of less than one acre in an urban area may involve fewer numbers of species, depending on the level of impact. Additionally, a native herbaceous seed mixture should be planted consisting of at least 10 species of grasses, sedges, and wildflowers selected from the Herbaceous Riparian Vegetation list or an approved equal. (IDNR)

This is page 25 of 28 Project name: Marshall County Bridge #73 Bridge Replacement Project Date: March 19, 2020

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

9. Dewatering should be limited to one streambank or side of the creek (at the bridge construction site) at a time so at least half of the creek is always flowing naturally. On larger streams, both sides can be dammed at once as long as the center of the channel is allowed to flow naturally. (IDNR)
10. Do not dewater directly into the stream. Dewater into a sediment bag, into a roll off box, and onto a riprap apron or similar system. (IDNR)
11. Cofferdam materials and methods can vary. Self-contained and encapsulated materials and methods are recommended. Anything filled with water is better than soil-filled where there is a potential for leaking or failure of the system due to length of use or accidents. (IDNR)
12. Dewatering pumps should incorporate filters or bypasses to avoid injuring or killing fish and other aquatic organisms. (IDNR)
13. If possible, the project design should avoid inclusion of a temporary causeway or runaround. Such features result in impacts to the stream and surrounding habitat. In many cases, the need for a causeway can be eliminated by working from either bank, or using temporary, easily removed structures such as timber mats. If a causeway is deemed critical for the construction to occur, please submit a justification for the necessity of the causeway with any permit application. (IDNR)
14. All migratory bird species are protected under the Migratory Bird Treaty Act (MBTA) of 1918. Species such as swallows and flycatchers often build nests on the undersides of bridges. To ensure compliance with the MBTA, we recommend that either work not take place between May 7 and September 7 (which is the nesting season), or that the bridge be surveyed for nests during those dates prior to construction. If nests are found with eggs, chicks, or parents actively tending to the nest (building the nest and visiting often), then repairs should be put on hold until the nesting cycle is completed (to fledging) or fails (by natural causes). After inspection and confirmation that no active nests with eggs or young are present, the Contractor shall remove existing nests and other nesting debris from the bridge girders or other surfaces that will be impacted by the project. Monitoring to ensure no new nests are established will continue until the existing bridge is demolished (IDNR)
15. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat 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)
16. Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure. (IDNR)
17. Operate equipment used to replace the bridge from the existing roadway. (IDNR)
18. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids. (IDNR)
19. Four (4) unconsolidated and one (1) borehole water wells were identified within the project area. Should it be determined during the right-of-way phase that these wells are affected, a cost to cure will likely be included in the appraisal to restore the wells. (IDNR)
20. Ground disturbance will be limited to the proposed project ROW discussed in the MPPA determination form. Ground disturbance outside of this area adjacent to the sensitive area identified in the MPPA must be avoided. In the field, the project limits must be marked prior to construction with fencing or 4-inch by 4-inch wood posts to avoid accidental disturbance, and this area will be labeled "Avoidance Area – Do Not Disturb" on design plans. No soil disturbance should occur in this area. (INDOT CRO)
21. Wetlands outside of the construction area will be marked on plans as do not disturb and orange fencing will be used to separate these wetlands that are not to be impacted by construction activities. (INDOT ESD)
22. The USFWS recommends to limit tree clearing to the minimum needed to construct the project and that a huge bur oak at the base of the roadway fill within the northeastern quadrant of the project area be left in place. The huge bur oak tree will be marked as "Do Not Disturb" on the design plans. (USFWS)
23. The Yellow River supports important mussel beds and contains quality instream habitat. Therefore, preservation of the existing riparian corridor, enhancement/restoration of the corridor, erosion control, and other activities to maintain this high-quality reach of the Yellow River are important and will be recognized during this project. (USFWS)

This is page 26 of 28 Project name: Marshall County Bridge #73 Bridge Replacement Project Date: March 19, 2020

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

- 24. The designer will coordinate with the Northern Indiana Public Service Company prior to construction to discuss impacts to the pipeline in the project area. (INDOT ESD)
 - 25. **General AMM 1:** 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. (USFWS)
 - 26. **Lighting AMM 1:** Direct temporary lighting away from suitable habitat during the active season. (USFWS)
 - 27. **Tree Removal AMM 1:** Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal. (USFWS)
 - 28. **Tree Removal AMM 2:** Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/ rail surface and outside of documented roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed. (USFWS)
 - 29. **Tree Removal AMM 3:** Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits). (USFWS)
 - 30. **Tree Removal AMM 4:** Do not remove documented Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or documented foraging habitat any time of year. (USFWS)
- For Further Consideration:**
- 1. The USFWS recommends a 3-span bridge with piles or piers away from the center of the river to prevent debris accumulation in the center of the river. (USFWS)
 - 2. The USFWS requests that the tree clearing be limited to the minimum needed to construct the project and that a huge bur oak at the base of the roadway fill within the northeastern quadrant be left in place if at all possible. (USFWS)

Indiana Department of Transportation

County Marshall

Route King Road

Des. No. 1600931

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:

Early coordination with the regulatory agencies was completed on June 20, 2018 (Appendix C, pages C1 to C4). If no response was received, it was assumed the agency did not feel the project will result in substantial impacts. The following agencies/individuals were contacted during the coordination phase.

	Agency	Date of Response(s)
1.	USACE, Louisville District	August 24, 2018
2.	USFWS, Bloomington Field Office	July 13, 2018
3.	USDA, NRCS	July 13, 2018
4.	National Park Service, Midwest Regional Office	No response
5.	U.S. Department of Housing and Urban Development	No response
6.	FHWA, Indiana Division	June 27, 2018
7.	IDNR, Division of Fish and Wildlife	July 20, 2018
8.	Indiana Geological Survey	June 20, 2018
9.	INDOT, Office of Public Involvement	June 20, 2018
10.	INDOT, Office of Aviation	July 9, 2018
11.	INDOT, LaPorte District Environmental Services	No response
12.	INDOT, Environmental Services	No response
13.	IDEM (electronic submission)	June 20, 2018
14.	Michiana Area Council of Governments	No response
15.	Marshall County Highway Department	No response
16.	Marshall County Drainage Board	No response
17.	Marshall County Board of Commissioners	No response
18.	Marshall County Council	No response
19.	Marshall County, Center Township Trustee	No response
20.	Marshall County Surveyor's Office	No response
21.	Marshall County Emergency Management	No response
22.	Marshall County Sheriff's Department	No response
23.	Plymouth Community School Corporation	No response
24.	Plymouth Fire Department	No response

Appendix A: INDOT Supporting Documentation

Threshold Chart.....A1

Appendix B: Graphics

General Location Map.....B1
 USGS Topographic Map.....B2
 Aerial Map.....B3
 Photo Location Map.....B4
 Site Photographs.....B5-B14
 Stage 2 Design Plans.....B15-B24

Appendix C: Early Coordination

Sample Early Coordination Letter.....C1-C4
 Indiana Department of Environmental Management
 Electronic Response (June 20, 2018).....C5-C13
 Indiana Geological Survey
 Electronic Response (June 20, 2018).....C14-C16
 Indiana Department of Transportation
 Office of Public Involvement Response (June 20, 2018).....C17
 Office of Aviation Response (July 9, 2018).....C18
 United States Fish and Wildlife Service
 Response Email (July 13, 2018).....C19-C21
 Updated Species List (December 30, 2019).....C22-C27
 Concurrence Verification Letter (June 22, 2018).....C28-C42
 INDOT LaPorte District Email (June 22, 2018).....C43
 Bridge/Structure Assessment Form (June 6, 2018).....C44-C45
 Federal Highway Administration
 Response Letter (June 27, 2018).....C46-C48
 Natural Resources Conservation Service
 Response Letter (July 13, 2018).....C49
 Indiana Department of Natural Resources, Division of Fish and Wildlife
 Response Letter (July 20, 2018).....C50-C53
 United States Army Corps of Engineers, Detroit District
 Response Letter (August 24, 2018).....C54-C56
 Indiana Department of Transportation
 Office of Ecology and Waterway Permitting Response (March 12, 2020).....C57

Appendix D: Section 106 of the National Historic Preservation Act (NHPA)

Minor Project Programmatic Agreement Determination Form.....D1-D4
 INDOT CRO Approval Email.....D5
 Phase 1a Survey Report.....D6-D10
 Phase 1b Survey Report.....D11-D15.....

Appendix E: Red Flag Investigation and Hazardous Materials

Red Flag Investigation.....E1-E12

Appendix F: Water Resources

Waters of the U.S. Determination Report.....F1-F11
 Water Resources Map.....F12
 NWI Wetlands Map.....F13
 USGS StreamStats Map.....F14
 USDA Soil Map, Marshall County.....F15-F19
 FEMA FIRMETTE.....F20
 Wetland Data Sheets.....F21-F34
 Preliminary Jurisdictional Determination.....F35-F38

Appendix G: Public Involvement

Notice of Entry for Survey or Investigation Letter (January 17, 2018)	G1-G2
Notice of Entry Attachment	G3
Legal Notice of Public Information Meeting	G4
Public Notice Publisher’s Claim	G5
Legal Notice of Public Information Meeting (February 20, 2019).....	G6-G7
Public Information Meeting Powerpoint	G8-G10
Public Information Meeting Handout.....	G11-G14
Public Information Meeting Sign-In Sheet.....	G15
Public Comment.....	G16
Response to Public Comment.....	G17-G18

Appendix H: Air Quality

Relevant pages from the MACOG 2020-2024 TIP	H1
Relevant pages from the INDOT 2020-2024 STIP	H2

Appendix I: Environmental Justice Analysis

EJ Analysis.....	I1-I8
------------------	-------

Appendix J: Other Information

INDOT Bridge Inspection Report	J1-J44
Land and Water Conservation Properties List.....	J45

Categorical Exclusion

Appendix A

INDOT Supporting Documentation

Categorical Exclusion Level Thresholds

	PCE	Level 1	Level 2	Level 3	Level 4 ¹
Section 106	Falls within guidelines of Minor Projects PA	“No Historic Properties Affected”	“No Adverse Effect”	-	“Adverse Effect” Or Historic Bridge involvement ²
Stream Impacts	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	Individual 404 Permit
Wetland Impacts	No adverse impacts to wetlands	< 0.1 acre	-	< 1 acre	≥ 1 acre
Right-of-way³	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)	“No Effect”, “Not likely to Adversely Affect” (Without AMMs ⁴ or with AMMs required for all projects ⁵)	“Not likely to Adversely Affect” (With any other AMMs)	-	“Likely to Adversely Affect”	Project does not fall under Species Specific Programmatic
Threatened/Endangered Species (Any other species)	Falls within guidelines of USFWS 2013 Interim Policy	“No Effect”, “Not likely to Adversely Affect”	-	-	“Likely to Adversely Affect”
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential ⁶
Sole Source Aquifer	Detailed Assessment Not Required	-	-	-	Detailed Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Coastal Zone Consistency	Consistent	-	-	-	Not Consistent
National Wild and Scenic River	Not Present	-	-	-	Present
New Alignment	None	-	-	-	Any
Section 4(f) Impacts	None	-	-	-	Any
Section 6(f) Impacts	None	-	-	-	Any
Added Through Lane	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Coast Guard Permit	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes ⁷
Approval Level <ul style="list-style-type: none"> • District Env. Supervisor • Env. Services Division • FHWA 	Concurrence by INDOT District Environmental or Environmental Services	Yes	Yes	Yes Yes	Yes Yes Yes

¹Coordinate with INDOT Environmental Services. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.

²Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.

³Permanent and/or temporary right-of-way.

⁴AMMs = Avoidance and Mitigation Measures.

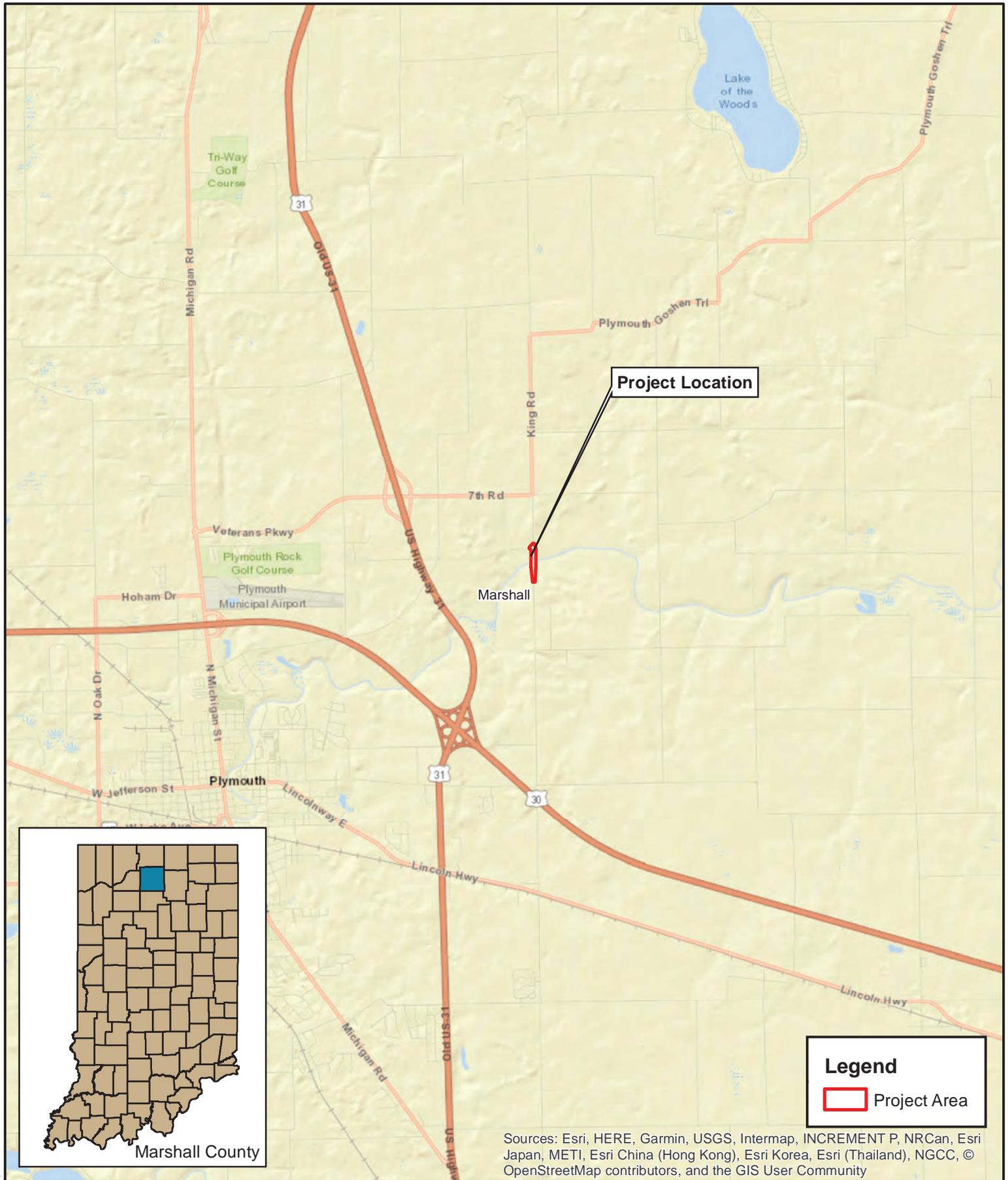
⁵AMMs determined by the IPAC decision key to be needed that are listed in the USFWS *User’s Guide for the Range-wide Programmatic Consultation for Indiana bat and Northern long-eared bat* as “required for all projects”.

⁶Potential for causing a disproportionately high and adverse impact.

⁷Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.

*Substantial public or agency controversy may require a higher-level NEPA document.

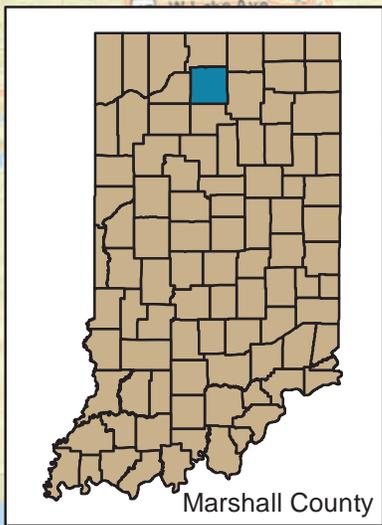
Categorical Exclusion
Appendix B
Graphics



Legend

Project Area

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



LOCHMUELLER GROUP

3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

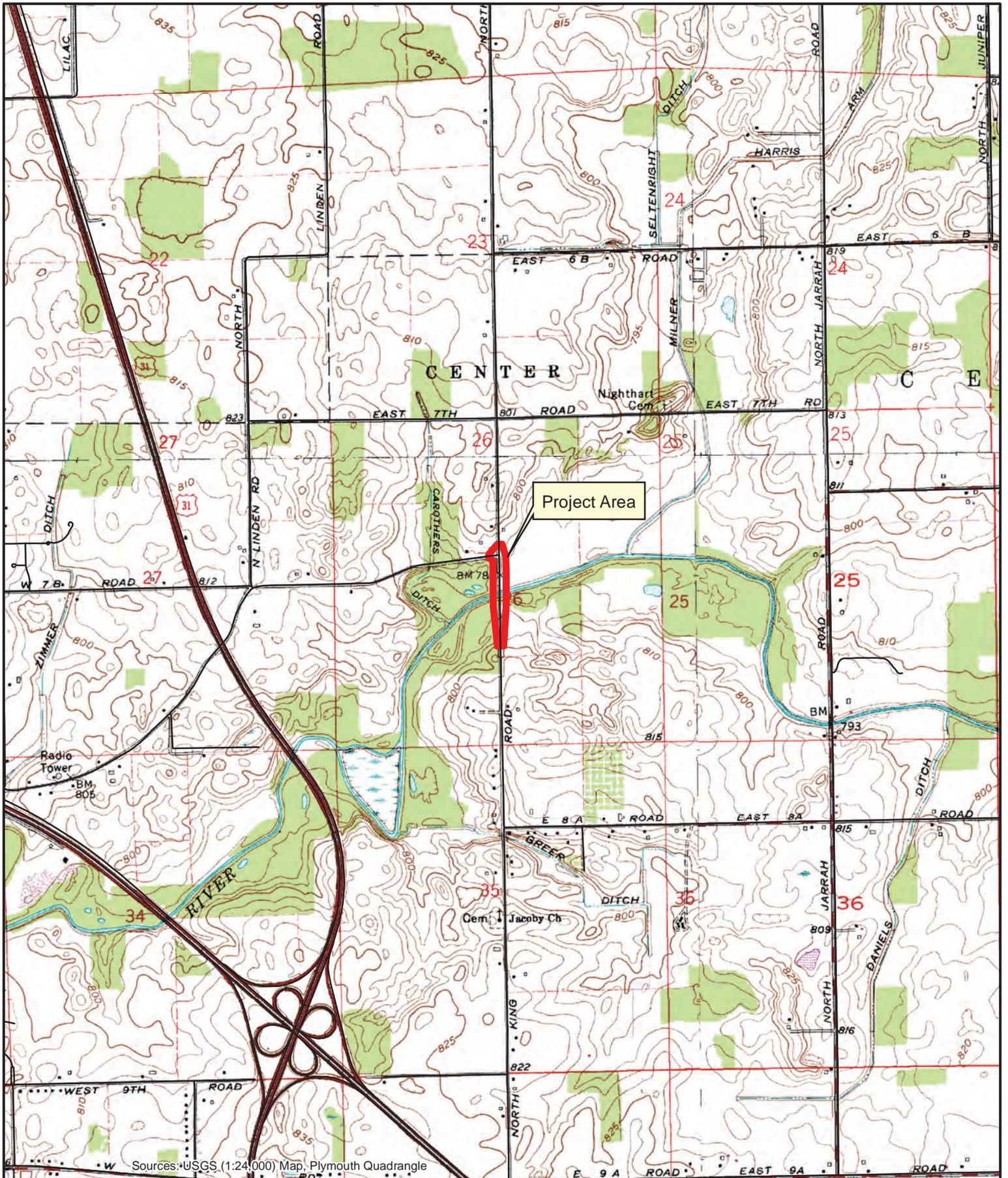
General Location Map
 Des. No. 1600931

0 0.5 1
 Miles

County: Marshall Created: 7/13/2018
 Township: Center S. Beaupre
 State: Indiana

Bridge #73 Bridge Replacement
 King Road over Yellow River,
 1.9 mi. N of US 30

S:_2017\217-03\01\Environ\Maps\Project Location.mxd



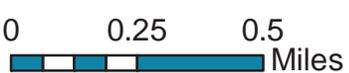
Sources: USGS (1:24,000) Map, Plymouth Quadrangle

LOCHMUELLER GROUP

3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

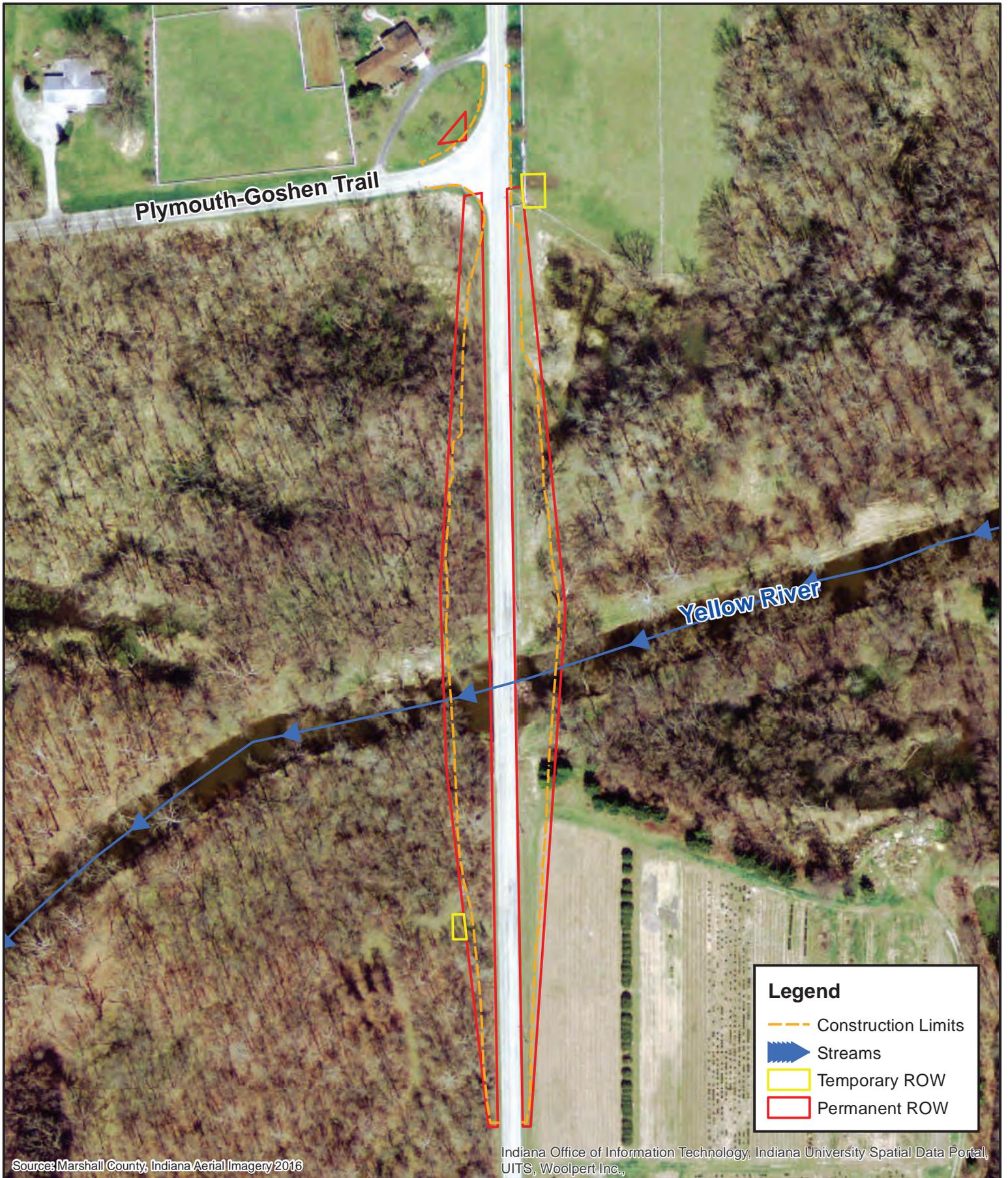
USGS Topographic Map
 Des. No. 1600931
 Plymouth Quad

County: Marshall Created: 7/13/2018
 Township: Center S. Beaufre
 State: Indiana



Bridge #73 Bridge Replacement
 King Road over Yellow River,
 1.9 mi. N of US 30

S:\2017\217-0301\Environ\Maps\USGS.mxd



Source: Marshall County, Indiana Aerial Imagery 2016

Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.,

LOCHMUELLER GROUP

3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

Aerial Map
Des. No. 1600931

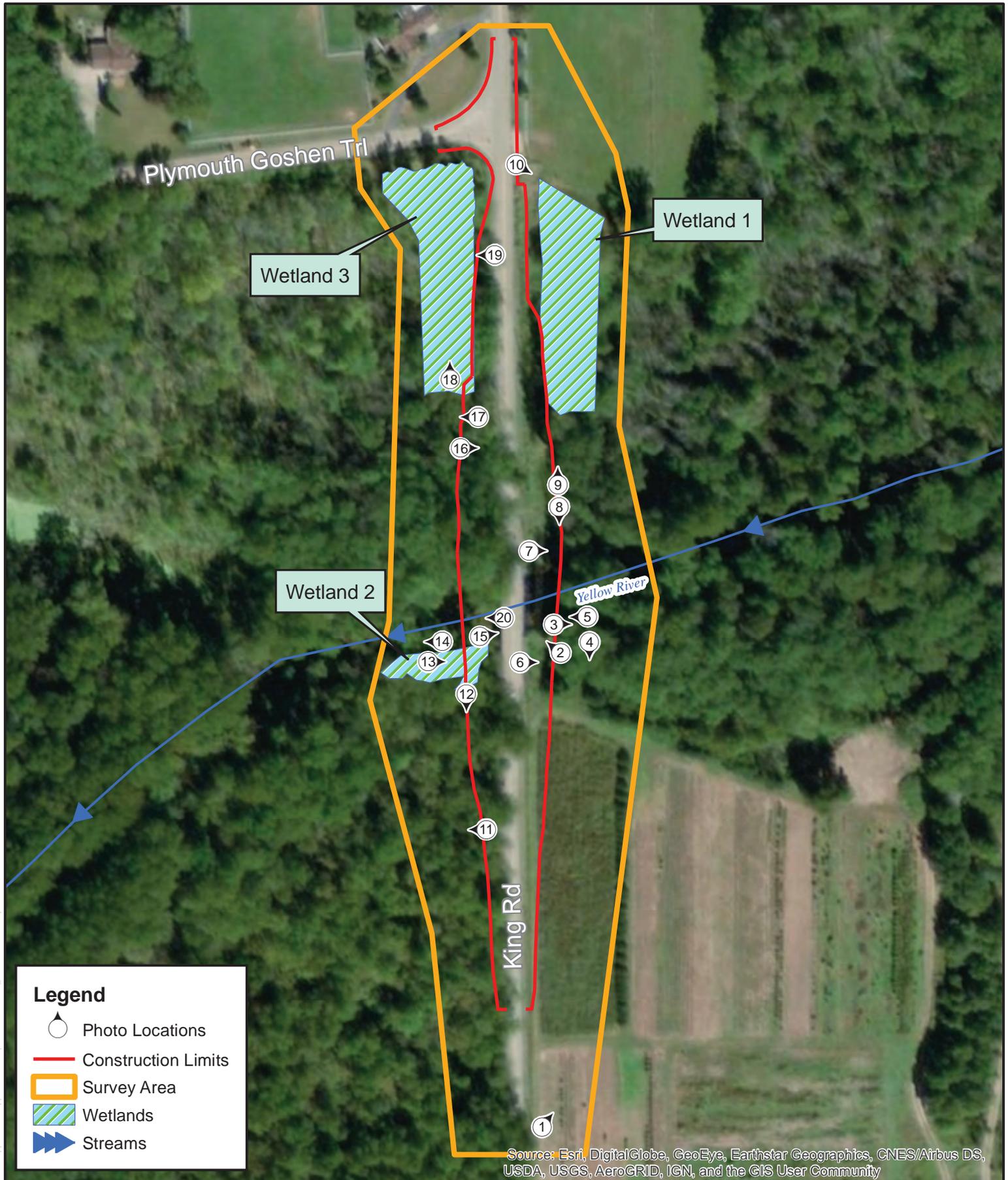
0 100 200 Feet

▲ N

County: Marshall Created: 1/31/2020
 Township: Center S. Beaupre
 State: Indiana

Bridge #73 Bridge Replacement
 King Road over Yellow River
 1.9 mi. N of US 30

S:\2017\1217-2020\Envr\01\Mapes\Project aerial.mxd



Legend

- Photo Locations
- Construction Limits
- Survey Area
- Wetlands
- Streams

LOCHMUELLER GROUP

3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

Photo Location Map
 Des. No. 1600931

0 100 200
 Feet

County: Marshall
 Township: Center
 State: Indiana

Marshall County Bridge #73 Project
 Bridge Replacement Project
 Created: 9/24/2019, SBeaupre

S:_2017\217-0301\Environ\Appendices\Appendix B_Graphics\Marsh#73_PhotoLocationMap.mxd



1. Looking northeast toward agricultural field- 9/25/18.



2. Looking northwest from Data Point 1- 9/25/18.



3. Looking east upstream Yellow River from the east side of the bridge- 9/25/18.



4. Looking south from the left bank of Yellow River- 9/25/18.



5. Looking west downstream from the left bank of Yellow River- 9/25/18.



6. Looking east upstream Yellow River from the bridge- 9/25/18.



7. Looking east upstream Yellow River- 9/25/18.



8. Looking south toward Yellow River- 9/25/18.



9. Looking north towards Wetland 1- 9/25/18.



10. Looking southeast toward Wetland 1- 9/25/18.



11. Looking west into wooded area- 9/26/18.



12. Looking south from boundary of Wetland 2- 9/26/18.



13. Looking east within Wetland 2- 9/26/18.



14. Looking west downstream Yellow River- 9/26/18.



15. Looking east upstream Yellow River toward bridge- 9/26/18.



16. Looking east at culvert on the west side of King Road- 10/2/18.



17. Looking west from culvert outlet on the west side of King Road- 10/2/18.



18. Looking north within Wetland 3- 10/2/18.

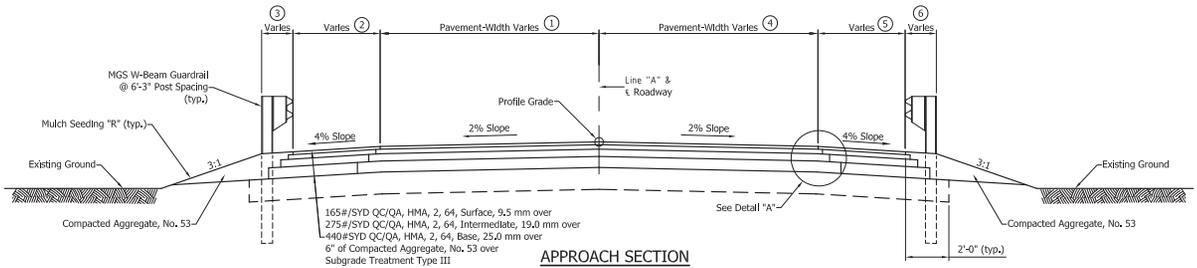


19. Looking west toward Wetland 3 from King Road- 10/2/18.



20. Looking west downstream Yellow River from the bridge- 9/25/18.

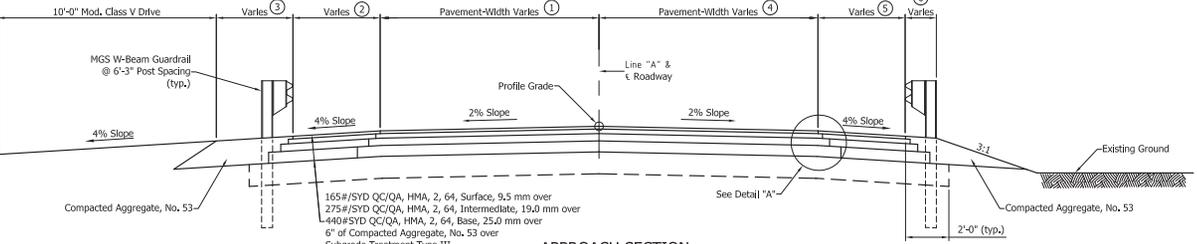
- ① Varies 9'-11" Sta. 14+75.00 "A" to 11'-0" @ Sta. 16+50.00 "A"
11'-0" Sta. 16+50.00 "A" to Sta. 18+77.55 "A"
11'-0" Sta. 20+94.45 "A" to Sta. 24+00.00 "A"
Varies 11'-0" @ Sta. 24+00.00 "A" to 10'-10" @ Sta. 25+50.00 "A"
- ② Varies 1'-0" Sta. 14+75.00 "A" to 4'-0" @ Sta. 16+50.00 "A"
4'-0" Sta. 16+50.00 "A" to Sta. 18+77.55 "A"
4'-0" Sta. 20+94.45 "A" to Sta. 24+00.00 "A"
Varies 4'-0" @ Sta. 24+00.00 "A" to 1'-0" @ Sta. 25+50.00 "A"
- ③ 1'-0" Sta. 14+75.00 "A" to Sta. 17+33.65 "A"
Varies 1'-0" Sta. 17+33.65 "A" to 4'-0" @ Sta. 17+63.65 "A"
4'-0" Sta. 17+63.65 "A" to Sta. 18+82.08 "A"
4'-0" Sta. 20+83.40 "A" to Sta. 22+70.59 "A"
Varies 4'-0" Sta. 22+70.59 "A" to 1'-0" @ Sta. 23+00.59 "A"
1'-0" Sta. 23+00.59 "A" to 25+50.00 "A"



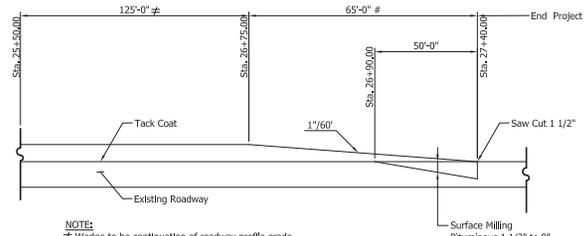
APPROACH SECTION
STA. 14+75.00 "A" TO STA. 18+77.55 "A"
STA. 22+90 "A" TO STA. 25+50.00 "A"
 Scale: 3/8" = 1'-0"

- ④ Varies 11'-2" Sta. 14+75.00 "A" to 11'-00" @ Sta. 16+50.00 "A"
11'-0" Sta. 16+50.00 "A" to Sta. 18+77.55 "A"
11'-0" Sta. 20+94.45 "A" to Sta. 24+00.00 "A"
Varies 11'-0" @ Sta. 24+00.00 "A" to 11'-3" @ Sta. 25+50.00 "A"
- ⑤ Varies 1'-0" Sta. 14+75.00 "A" to 4'-0" @ Sta. 16+50.00 "A"
4'-0" Sta. 16+50.00 "A" to Sta. 18+77.55 "A"
4'-0" Sta. 20+94.45 "A" to Sta. 24+00.00 "A"
Varies 4'-0" @ Sta. 24+00.00 "A" to 1'-0" @ Sta. 25+50.00 "A"
- ⑥ 1'-0" Sta. 14+75.00 "A" to Sta. 16+81.41 "A"
Varies 1'-0" Sta. 16+81.41 "A" to 4'-0" @ Sta. 17+11.41 "A"
4'-0" Sta. 17+11.41 "A" to Sta. 18+88.58 "A"
4'-0" Sta. 20+89.61 "A" to Sta. 22+08.07 "A"
Varies 4'-0" Sta. 22+08.07 "A" to 1'-0" @ Sta. 22+38.07 "A"
1'-0" Sta. 22+38.07 "A" to 25+50.00 "A"

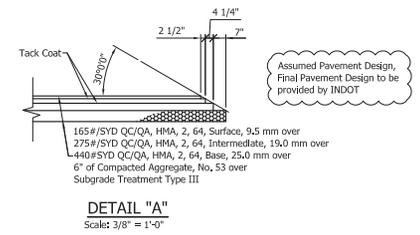
- ③ 1'-0" Sta. 14+75.00 "A" to Sta. 17+33.65 "A"
Varies 1'-0" Sta. 17+33.65 "A" to 4'-0" @ Sta. 17+63.65 "A"
4'-0" Sta. 17+63.65 "A" to Sta. 18+82.08 "A"
4'-0" Sta. 20+83.40 "A" to Sta. 22+70.59 "A"
Varies 4'-0" Sta. 22+70.59 "A" to 1'-0" @ Sta. 23+00.59 "A"
1'-0" Sta. 23+00.59 "A" to 25+50.00 "A"



APPROACH SECTION
STA. 20+94.45 "A" TO STA. 22+90 "A"
 Scale: 3/8" = 1'-0"



WEDGE AND RESURFACE DETAIL
STA. 25+50.00 "A" TO STA. 27+40.00 "A"
 NOT TO SCALE

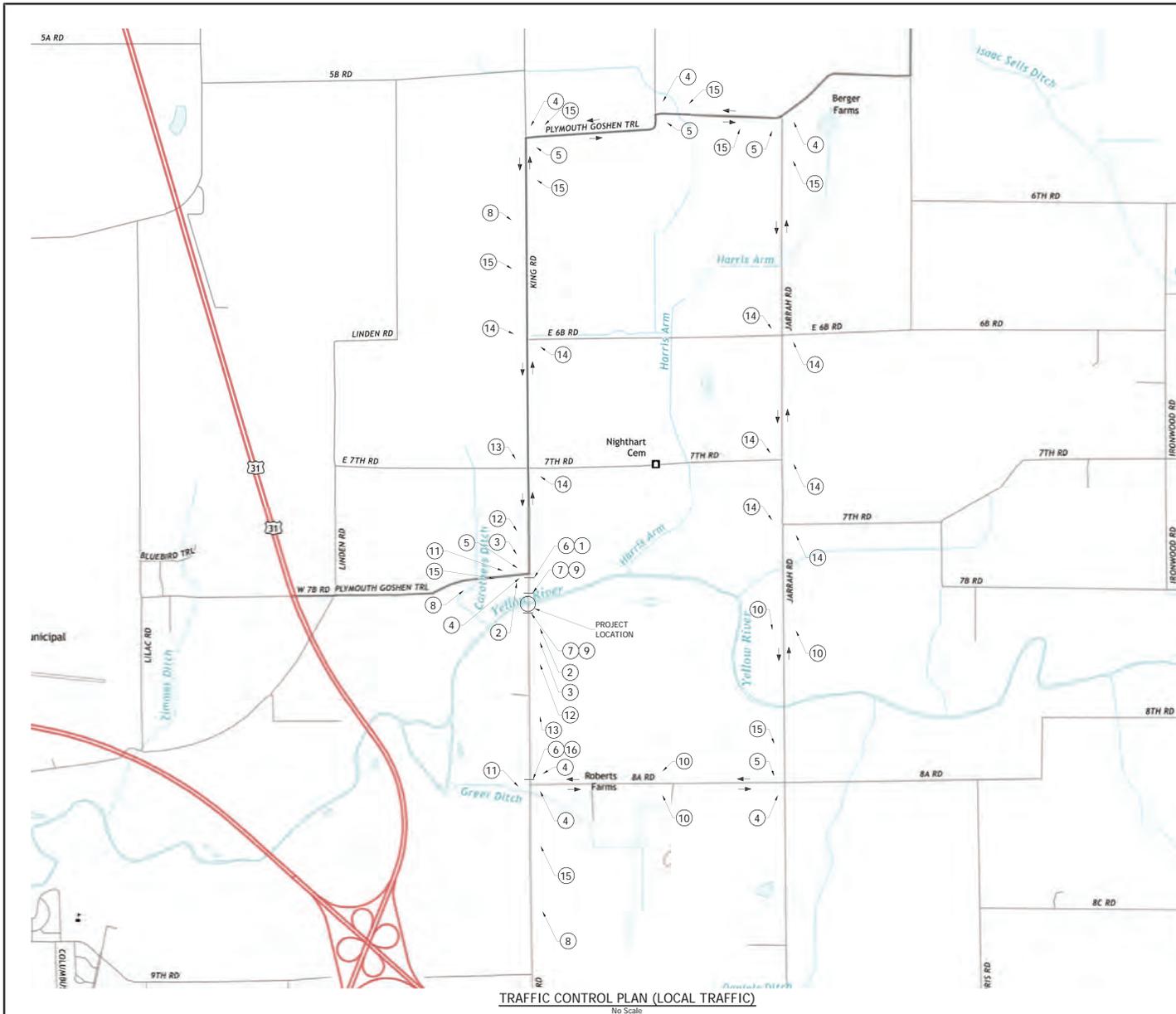


DETAIL "A"
 Scale: 3/8" = 1'-0"

NOTE:
 ≠ Wedge to be continuation of roadway profile grade
 # Taper wedge uniformly to meet existing roadway surface.

Assumed Pavement Design,
 Final Pavement Design to be
 provided by INDOT

NOT FOR CONSTRUCTION	DESIGNED: MKT DRAWN: BDC		INDIANA DEPARTMENT OF TRANSPORTATION		HORIZONTAL SCALE		BRIDGE FILE	
	CHECKED: BMA CHECKED: BMA		TYPICAL CROSS SECTION		AS NOTED		MARSHALL 73	
					AS NOTED		DESIGNATION	
					AS NOTED		1600931	
				SURVEY BOOK		SHEETS		
				CONTRACT		3		
				PROJECT		121		
				B 40720		1600931		



TRAFFIC CONTROL PLAN (LOCAL TRAFFIC)
No Scale

SIGN LEGEND				
SYMBOL	MESSAGE	NUMBER	TYPE	REQ'D.
1	KING ROAD CLOSED 0.0 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3	A	*1
	DETOUR(R or L)	XM4-10	B	*1
2	ROAD CLOSED 500 FT.	XW20-3	A	2
3	ROAD CLOSED 1000 FT.	XW20-3	A	2
4	DETOUR ROUTE MARKER ASSEMBLY (LEFT)			7
5	DETOUR ROUTE MARKER ASSEMBLY (RIGHT)			5
6	STANDARD BARRICADE TYPE III-B ROAD CLOSURE SIGN ASSEMBLY			48 LFL. 2
7	STANDARD BARRICADE TYPE III-A ROAD CLOSURE SIGN ASSEMBLY			48 LFL. 2
8	DETOUR AHEAD	XW20-2	A	3
9	ROAD CLOSED	R11-2	A	*2
10	DETOUR ROUTE MARKER ASSEMBLY (CONFIRMING)			4
11	END CONSTRUCTION	XG20-2	A	2
12	ROUTE CLOSURE NOTICE	XG20-5	A	2
13	ROAD CLOSED AHEAD	XG20-3	A	2
14	DETOUR ROUTE MARKER ASSEMBLY (STRAIGHT)			9
15	DETOUR ROUTE MARKER ASSEMBLY (ADVANCED TURN)			9
16	KING ROAD CLOSED 0.7 MILES AHEAD LOCAL TRAFFIC ONLY	R11-3	A	*1
	DETOUR(R or L)	XM4-10	B	*1

2-XG20-5 Signs to be placed at site a minimum of 10 business days prior to Road Closure.
(2-Type "A" Signs req'd.)

*Cost of Sign to be included in the cost of "Road Closure Sign Assembly"



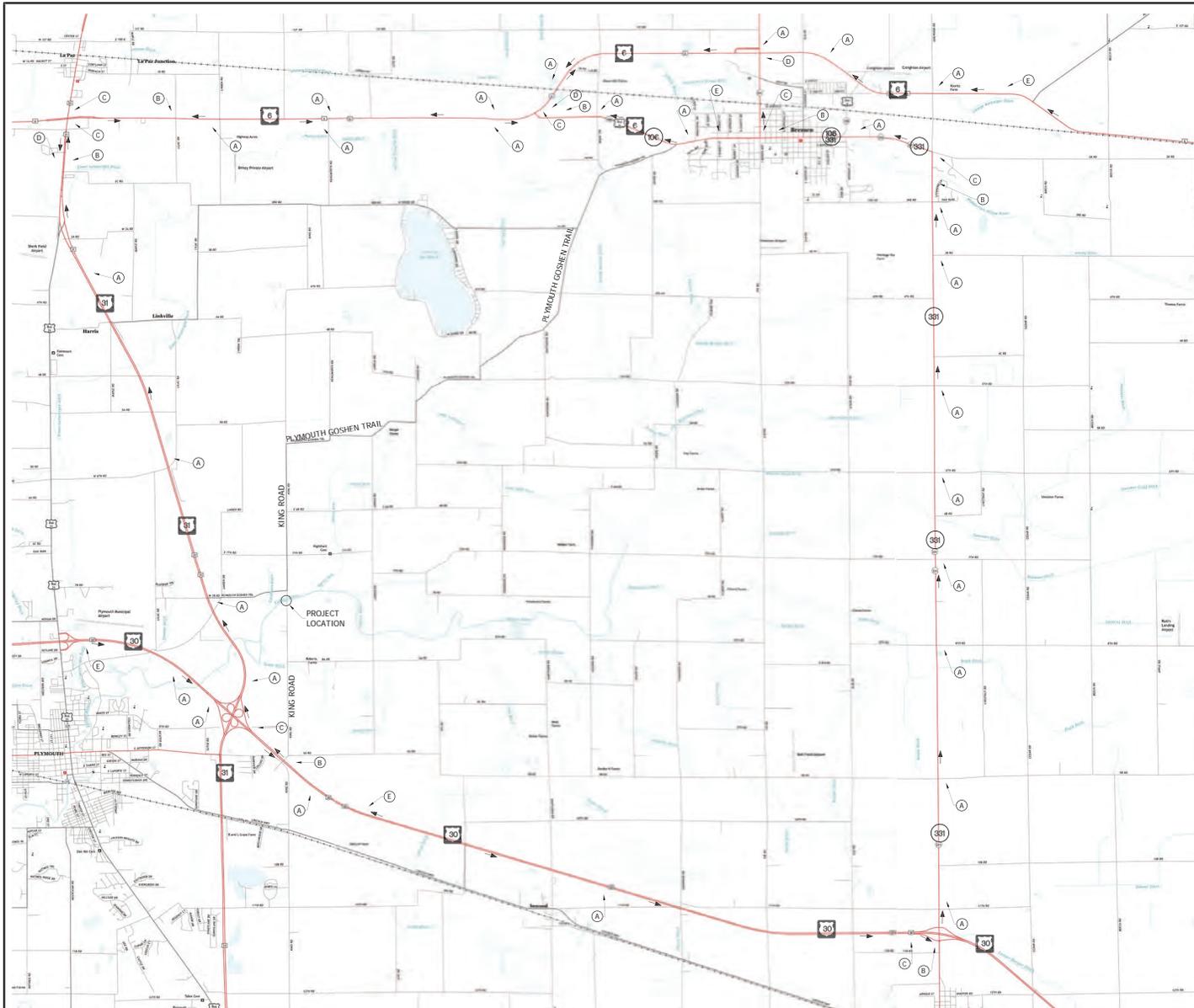
NOT FOR CONSTRUCTION

DESIGNED: MKT	DRAWN: BDC
CHECKED: BMA	CHECKED: BMA

INDIANA
DEPARTMENT OF TRANSPORTATION

DETOUR ROUTE

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	MARSHALL 73
VERTICAL SCALE	DESIGNATION
	1600931
SURVEY BOOK	SHEETS
	4 of 32
CONTRACT	PROJECT
B 40720	1600931



TRAFFIC CONTROL PLAN (TRUCK)
No Scale

LEGEND	DESCRIPTION	SIZE	TYPE	NO.	
A	DETOUR	X04-8	30" x 15"	Detour Route Assembly	28
	KING ROAD	M4-1 (Mod.)	30" x 30"		
	NORTH SOUTH	M3-1 or M3-3	30" x 15"		
	↑	M6-3	21" x 15"		
B	DETOUR	X04-8	30" x 15"	Detour Route Assembly	7
	KING ROAD	M4-1 (Mod.)	30" x 30"		
	NORTH SOUTH	M3-1 or M3-3	30" x 15"		
	←	M5-1 (L or R)	21" x 15"		
C	DETOUR	X04-8	30" x 15"	Detour Route Assembly	7
	KING ROAD	M4-1 (Mod.)	30" x 30"		
	NORTH SOUTH	M3-1 or M3-3	30" x 15"		
	→	M6-1 (L or R)	21" x 15"		
D	END	X04-6	30" x 15"	Detour Route Assembly	3
	DETOUR	X04-8	30" x 15"		
	KING ROAD	M4-1 (Mod.)	30" x 30"		
	NORTH SOUTH	M3-1 or M3-3	30" x 15"		
	↑	M6-3 or M5-1 (L or R)	21" x 15"		
E	KING ROAD CLOSED BETWEEN PLYMOUTH GOSHEN TRAIL AND 8A ROAD USE DETOUR	XG20-6 (Mod.)	60" x 42"	C	4

NOT FOR CONSTRUCTION

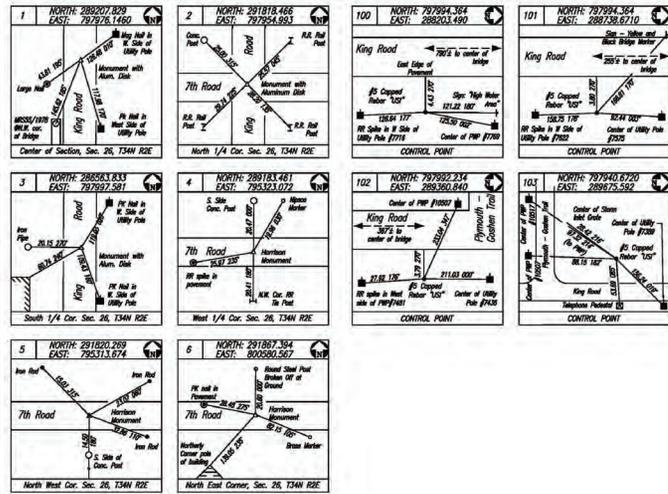
DESIGNED: MKT	DRAWN: BDC
CHECKED: BMA	CHECKED: BMA

INDIANA
DEPARTMENT OF TRANSPORTATION

DETOUR ROUTE

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	MARSHALL 73
VERTICAL SCALE	DESIGNATION
	1600931
SURVEY BOOK	SHEETS
	1 of 32
CONTRACT	PROJECT
B 40720	1600931

Section Corner and Control Point References



Vicinity Map (NTS)



Surveyor's Report

Located in Section 26 of Township 34 North, Range 2 East in Center Township, in Marshall County.

The purpose of this survey is to collect data for the preparation of construction and right of way plans. This is not a property retracement survey. Any apparent property, subdivision, or easement lines or corners are based on the last deeds of record obtained from the County Recorder's Office. These lines in no way represent property, subdivision, or easement lines that could be determined from a retracement property survey. They are preliminary and should not be used to represent a retracement property survey. No monuments were set to represent the same. In addition, any monuments depicted on this plat indicated as being found or set should be used only for the above stated purpose.

Field measurements for this survey were in accordance with the specifications outlined in IAC 805 1-14. Measurements are shown to the nearest 0.01 feet, coordinates to the nearest 0.0001 feet, and the bearings to the 0.0001 seconds, not to indicate the precision of the work, but to allow for closure and adjustment by other if desired. Units are US Survey Feet unless otherwise noted.

Horizontal Control

The horizontal control for this project is based on the Indiana Geospatial Coordinate System (INGCS), Marshall Zone, North American Datum of 1983 (NAD83) EPOCH 2010.0, US Survey Feet. Said system was ascertained by Real Time Kinematic (RTK) GPS observations from Trimble's VRS NOW Continuously Operating Reference System (www.vrsnow.us). The INGCS Zones are Low Distortion Projections (LDP) that minimize the differences between Grid and Ground distances. The latitudes, longitudes and ellipsoidal heights of project data points are identical for the INGCS and the State Plane Coordinate System (SPCS), regardless of projected grid coordinates (INGCS White Paper - <http://www.in.gov/indot/ingcs.htm>). This system will govern the project for design, right of way computations and layout. Geometric datum and map projection parameters for this INGCS Zone are as follows:

Coordinate System : INGCS
 Zone : Marshall
 Datum : NAD 83 (2011) EPOCH 2010.0
 Ellipsoid Name : GRS 80
 Geoid Model : Geoid12B

Local site settings
 Latitude of Grid Origin : 40°54'00"N
 Central Meridian : 86°18'00"W
 Central Meridian Scale : 1.000031
 False Northing offset : 138,110.00
 False Easting offset : 787,400.00

The Trimble VRS NOW's RTK Systems continuously operating reference stations (CORS) were used to measure dual RTK vectors on all control points and section corners. These dual vectors were compared and processed using Trimble Business Center Software.

Reference Monumentation:
 Control Points - See references and Point Data Table - Estimated relative positional accuracy of these points due to random errors in the measurement or staking of these monuments is +/- 0.10 feet.
 Section Corners - See Section Corner Detail and References - Estimated relative positional accuracy of these points due to random errors in the measurement of these monuments is +/- 0.10 feet.

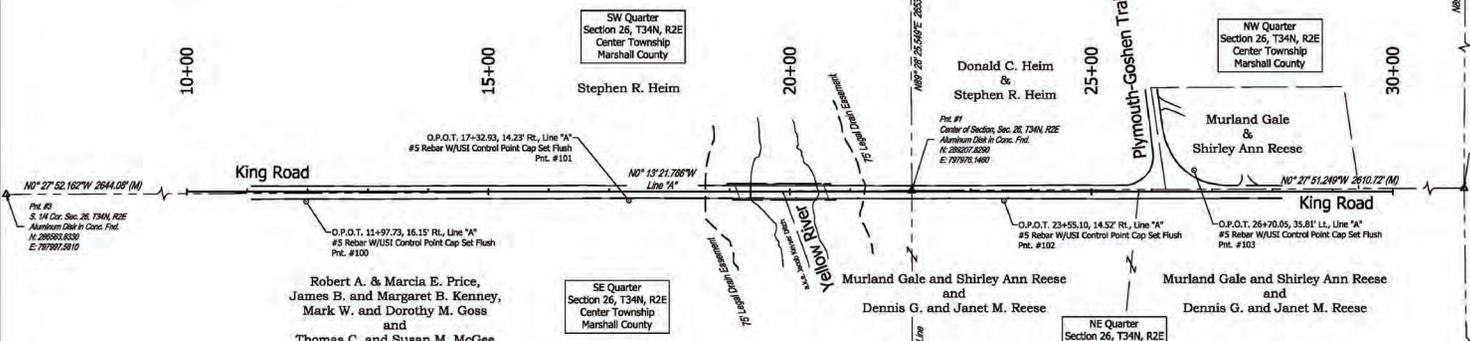
The following corners were found per information found in the Office of the County Surveyor. Lacking obvious evidence to the contrary, these monuments were held as prima facie evidence of the respective corners with negligible uncertainty.

- Center of Section 26, T34N R2E, Aluminum Disk set in Concrete Fld. per Co. Ties
- North 1/4 Cor. of Section 26, T34N R2E, Aluminum Disk set in Concrete Fld. per Co. Ties
- South 1/4 Cor. of Section 26, T34N R2E, Harrison Monument Disk set in Concrete Fld. per Co. Ties
- West 1/4 Cor. of Section 26, T34N R2E, Harrison Monument Fld. per Co. Ties
- North West Cor. of Section 26, T34N R2E, Harrison Monument Fld. per Co. Ties
- North East Cor. of Section 26, T34N R2E, Harrison Monument Fld. per Co. Ties

Alignments:
 Line "A" - Established by splitting the bridge deck.

Right of Way:
 There was no documented evidence of the existing right of way, therefore the edge of pavement is shown as a possible easement by prescription.

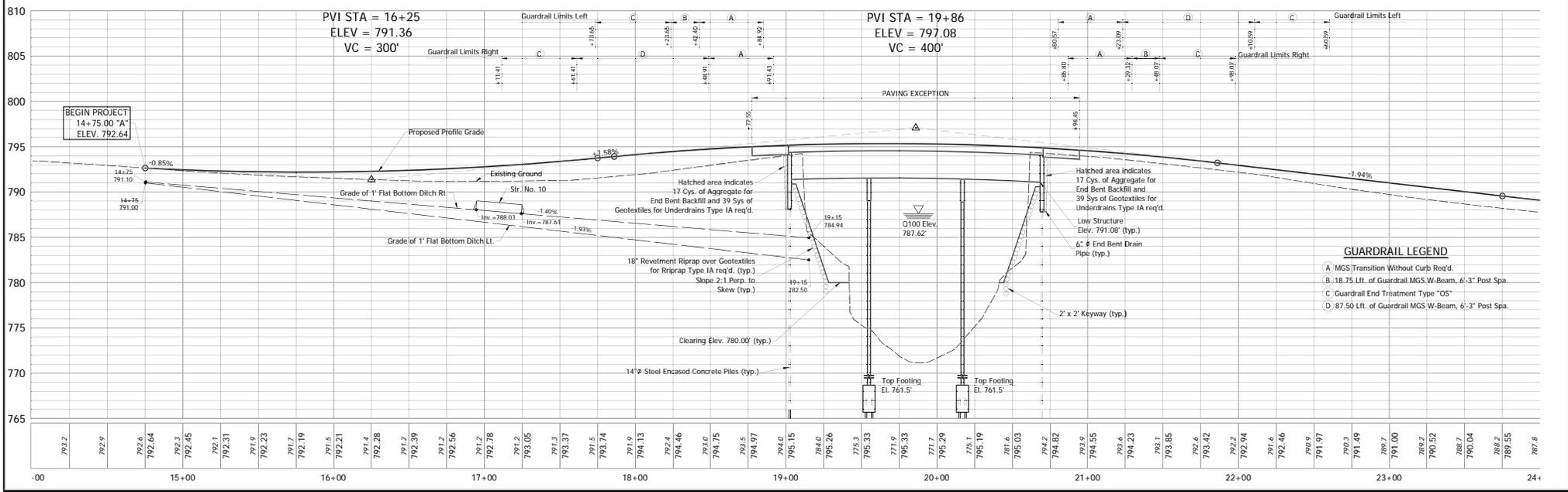
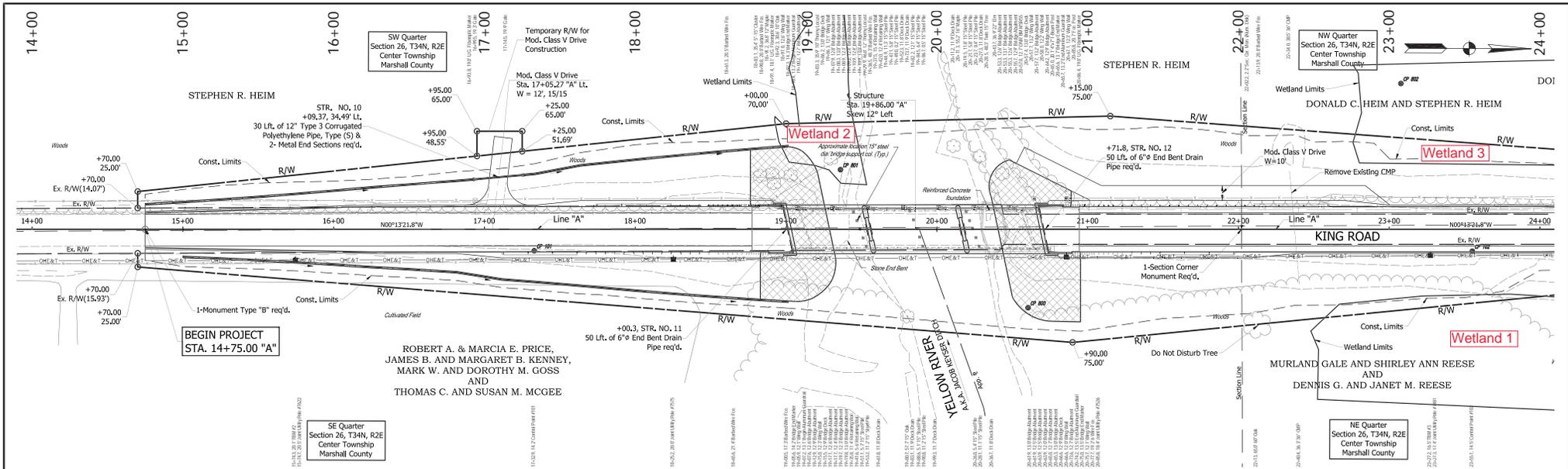
The right of way, parcel lines and ownership information shown on this plat is preliminary. This information is shown only to help orient the user of this plat as it relates to the centerlines. The source of this information is from the last deed of record obtained from the County Recorder's Office as well as the above-mentioned plans. The consultant responsible for the Right of Way Engineering will complete the final determination of this information.



Point Data Table

Point #	Station	Type	INGCS Northing	INGCS Easting	Latitude	Longitude
1	Center of Section, Sec. 26, T34N R2E	Aluminum Disk in Conc.	288207.8200	797976.1480	41°52'10.4384"	-86°19'41.2908"
2	N. 1/4 Cor. Sec. 26, T34N R2E	Aluminum Disk in Conc.	291616.4880	797954.9800	41°52'36.2500"	-86°19'41.5559"
3	S. 1/4 Cor. Sec. 26, T34N R2E	Aluminum Disk in Conc.	288603.8380	797997.5910	41°52'14.3165"	-86°19'41.0280"
4	West 1/4 Cor. Sec. 26, T34N R2E	Harrison Monument	289163.4910	798233.0720	41°52'10.2079"	-86°19'19.0689"
5	N.W. Cor. Sec. 26, T34N R2E	Harrison Monument	291620.2980	798215.6740	41°52'36.2507"	-86°19'19.2008"
6	N.E. Cor. Sec. 26, T34N R2E	Harrison Monument	291687.3940	800200.5870	41°52'36.7012"	-86°19'01.1127"
100	O.P.O.T. 11+97.73, 16.15' RL, Line "A"	#5 Rebar WJUSI Control Point Cap Set Flush Pnt. #101	288203.4900	797998.3570	41°52'30.8158"	-86°19'41.0082"
101	O.P.O.T. 17+02.83, 14.23' RL, Line "A"	#5 Rebar WJUSI Control Point Cap Set Flush Pnt. #102	288708.6710	797994.3840	41°52'05.8032"	-86°19'41.0679"
102	O.P.O.T. 23+55.10, 14.52' RL, Line "A"	#5 Rebar WJUSI Control Point Cap Set Flush Pnt. #103	288360.0400	797982.2340	41°52'11.8811"	-86°19'41.0819"
103	O.P.O.T. 29+70.05, 33.81' RL, Line "A"	#5 Rebar WJUSI Control Point Cap Set Flush Pnt. #104	288675.5820	797940.6720	41°52'15.0607"	-86°19'41.7822"

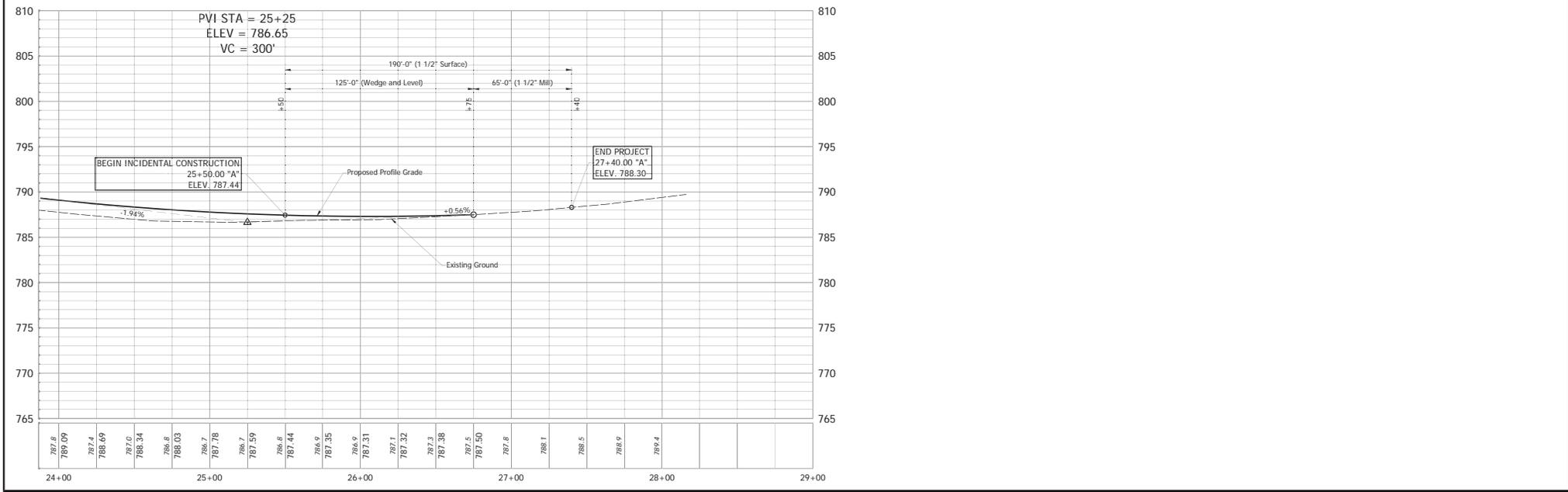
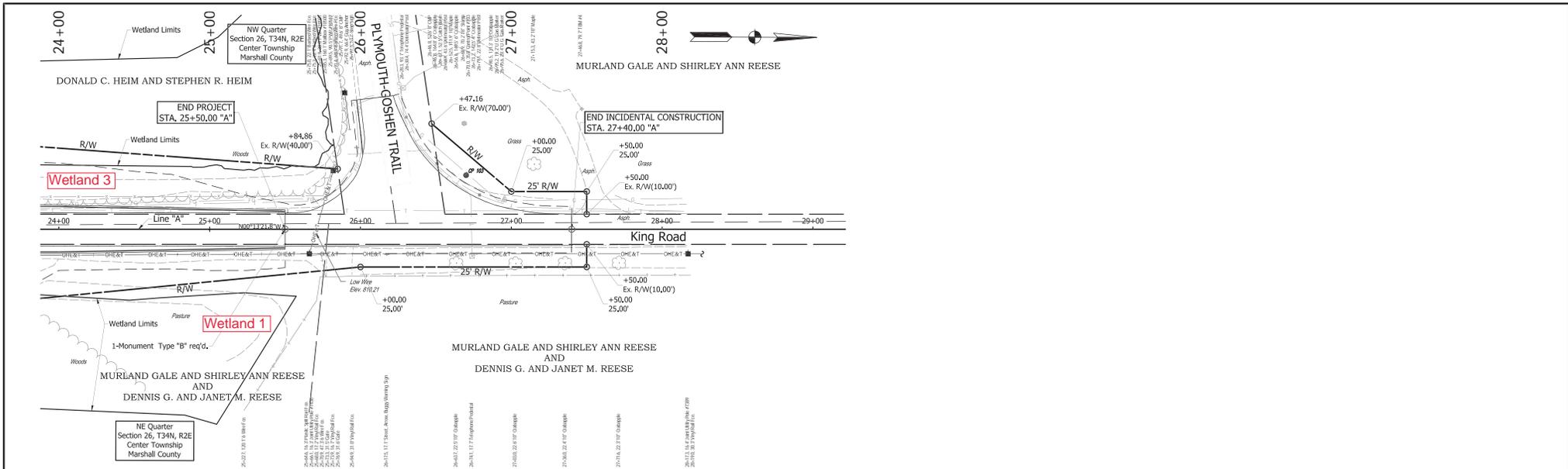
SURVEY STARTED 2/6/2018 SURVEY COMPLETED 3/15/2018 ROUTE PLAT SHEETS 1 OF 1	MARSHALL COUNTY RECORDER'S OFFICE 201801869 MARLENE MAHLER 4/30/2018 10:57AM	SURVEYOR STATEMENT This survey, to the best of my knowledge and belief, is executed according to the provisions of Title 865 IAC 1-12-20 through 1-12-26 regarding Route Surveys, except that any data shown regarding the location or description of the existing parcels is not a part of this survey.	AFFIRMATION STATEMENT I affirm, under the penalties for perjury, that I have taken reasonable care to detect each Social Security number in this document, unless required by law. By: Mark A. Schepers RECOMMENDED FOR APPROVAL AND PREPARED BY: SIGNATURE: <i>Mark A. Schepers</i> DATE: 03/30/2018	MARSHALL COUNTY BRIDGE # 73 KING ROAD OVER YELLOW RIVER LOCATION CONTROL ROUTE SURVEY	HORIZONTAL SCALE 1" = 100' COUNTY DESIGNATION MARSHALL SURVEY BOOK 6 OF 32 CONTRACT PROJECT B 40720 1600931			
								BRIDGE FILE MARSHALL 73 DESIGNATION 1600931 PLAN SHEETS 6 OF 32 PROJECT 1600931
						STATE OF INDIANA LICENSE NO. 1740 SURVEYOR	8415 East 59th St. Indianapolis, IN 46215 PH. 317.544.4896 FAX 317.544.4897	LISI #2017-163
						SURVEYOR'S SIGNATURE: <i>Mark A. Schepers</i> DATE: 03/30/2018		



GUARDRAIL LEGEND

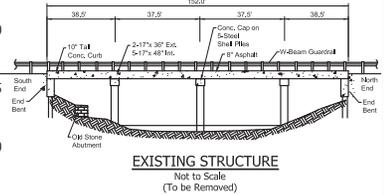
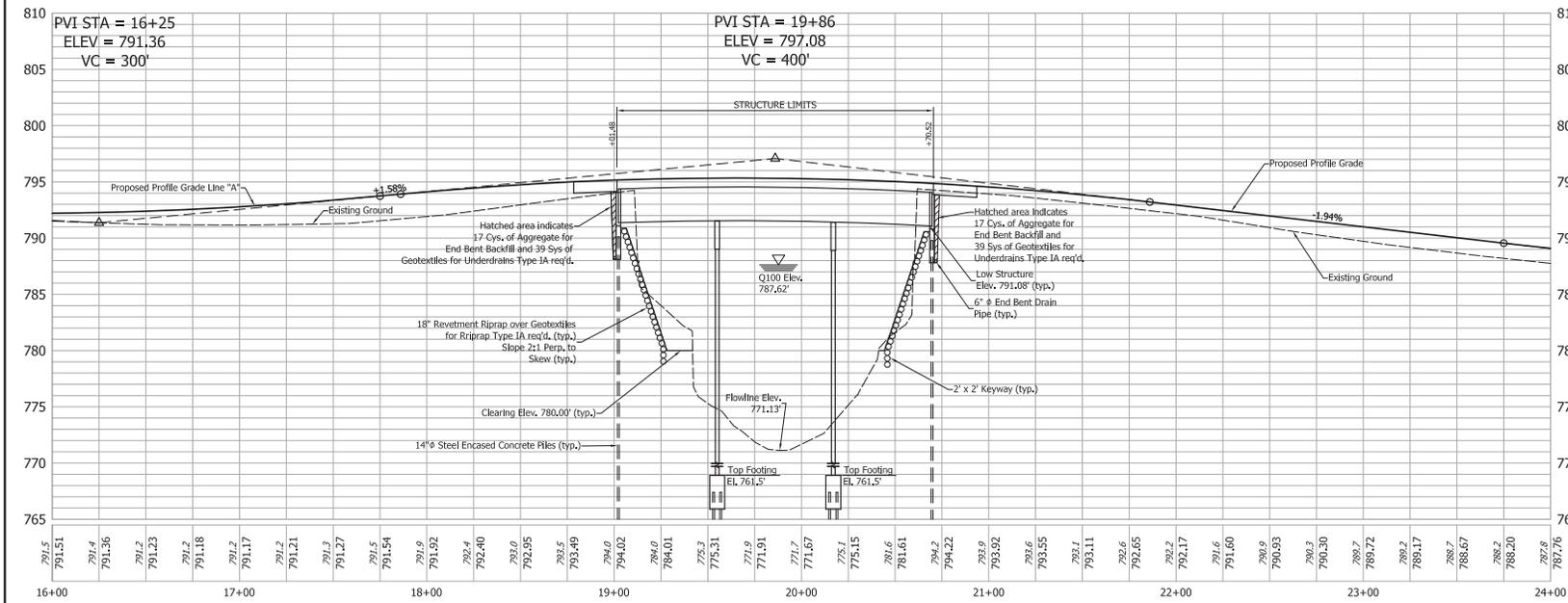
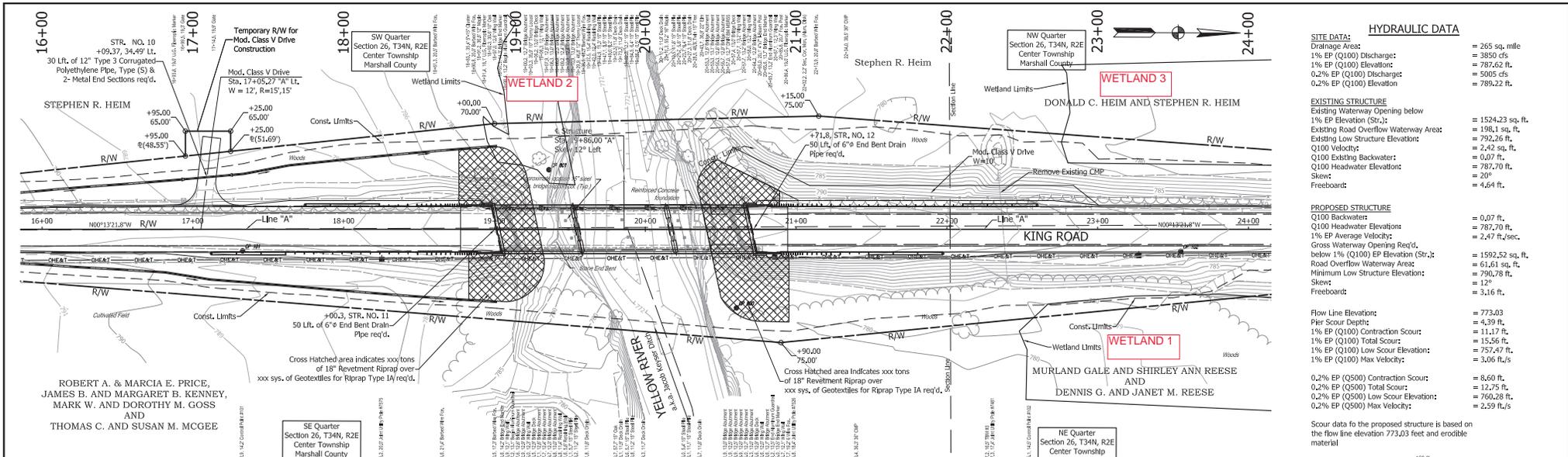
- A. MGS Transition Without Curb Req'd
- B. 18.75 Lft. of Guardrail MGS W-Beam, 6'-3" Post Spa.
- C. Guardrail End Treatment Type "OS"
- D. 87.50 Lft. of Guardrail MGS W-Beam, 6'-3" Post Spa.

NOT FOR CONSTRUCTION	DESIGNED: MKT	DRAWN: BDC	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
	CHECKED: BMA	CHECKED: BMA		VERTICAL SCALE	DESIGNATION
PLAN AND PROFILE LINE "A"				SURVEY BOOK	SHEETS
				CONTRACT PROJECT	7 32
				B 40720	1600931



NOT FOR CONSTRUCTION

DESIGNED: MKT	DRAWN: BDC	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
CHECKED: BMA	CHECKED: BMA		1"=30'	MARSHALL 73
		PLAN AND PROFILE LINE "A"	VERTICAL SCALE	DESIGNATION
			1"=5'	1600931
			SURVEY BOOK	SHEETS
			8	1 of 32
			CONTRACT	PROJECT
			B 40720	1600931



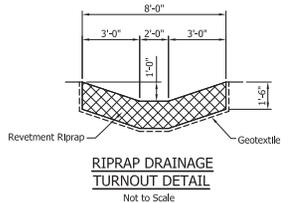
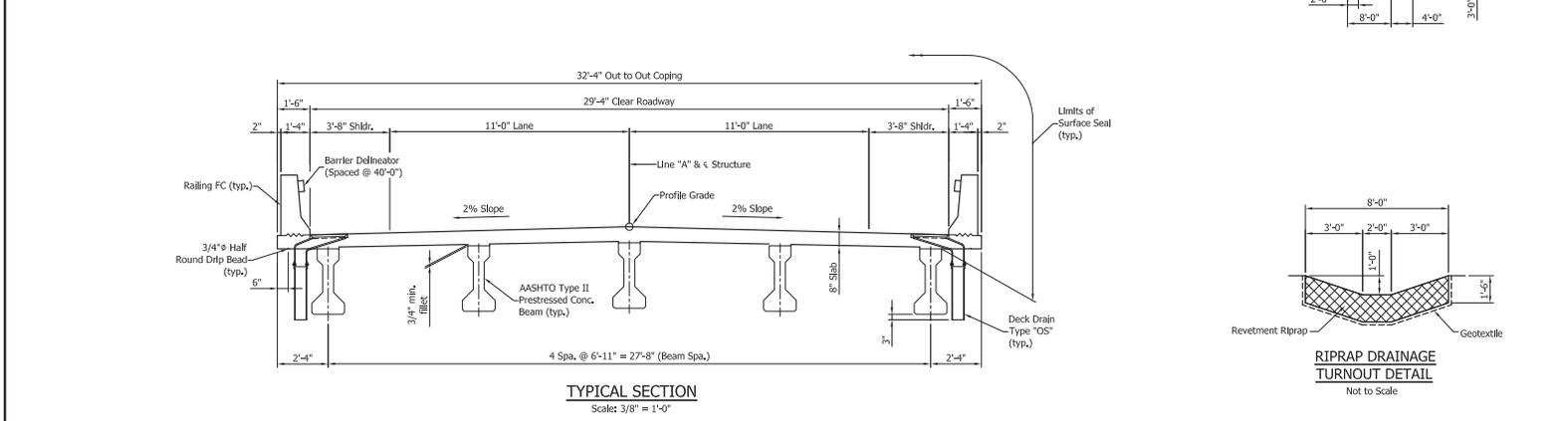
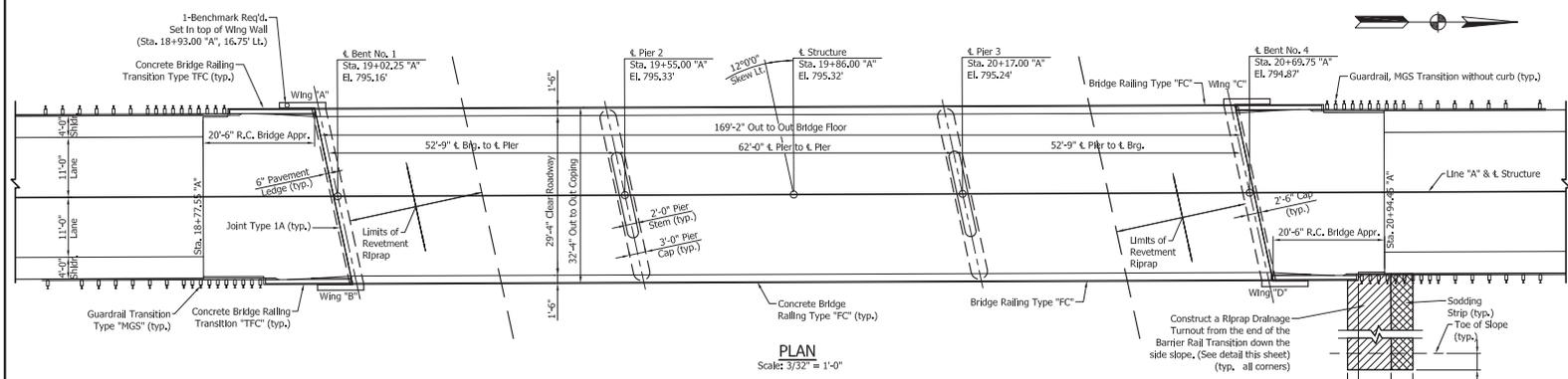
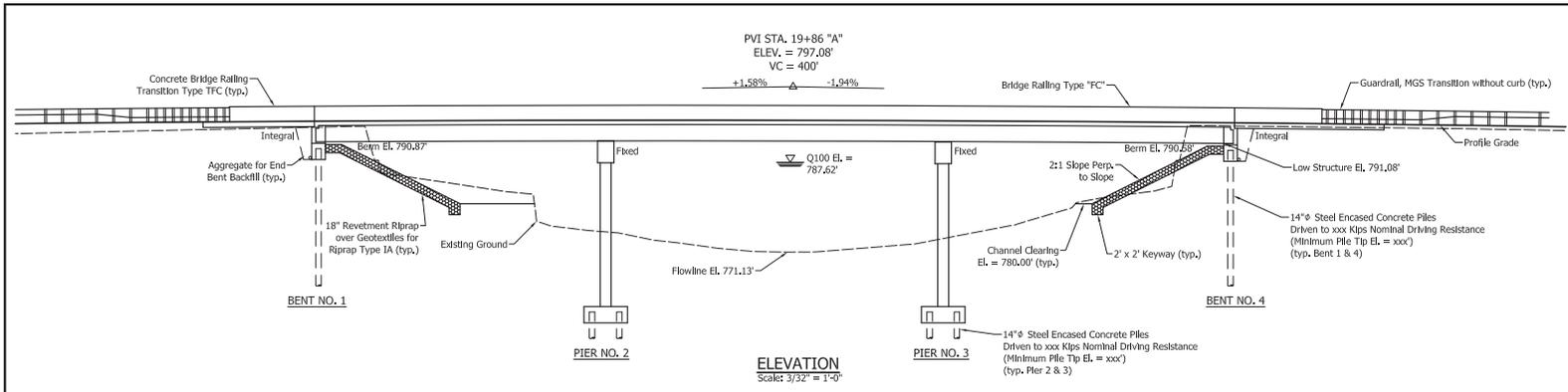
EARTHWORK SUMMARY

Common Excavation	= 637 Cys
Fill + 20%	= 4368 Cys
Waterway Excavation	= 426 Cys
Usable Waterway Excavation	= 333 Cys
Borrow	= 3398 Cys
Foundation Excavation	= 47 Cys.

No direct payment for Benching.

PRESTRESSED CONCRETE I-BEAM BRIDGE
 THREE SPANS @ 52'-9", 62'-0", 52'-9", SKEW 12° LT.
 29'-4" CLEAR ROADWAY WIDTH
 KING ROAD OVER YELLOW RIVER
 MARSHALL COUNTY, INDIANA

NOT FOR CONSTRUCTION	INDIANA DEPARTMENT OF TRANSPORTATION		BRIDGE FILE MARSHALL 73	
	BRIDGE LAYOUT		DESIGNATION 1600931	
DESIGNED: MKT	DRAWN: BDC	SURVEY BOOK		SHEETS
CHECKED: BMA	CHECKED: BMA	CONTRACT		PROJECT
		B 40720		121 32
		1600931		



GENERAL NOTES:

All dimensions are in feet and inches and all elevations are in feet unless otherwise noted.

Reinforcing steel covering to be 2.5" in top and 1" min. in bottom of floor slabs, 2" in footings except bottom steel to be 4", and 2" in all other parts, unless noted.

Concrete in end bents, floor slab, wingwalls and concrete barrier railings is to be Class "C".

Concrete shall be Class "A" unless noted above.

Surface Seal exposed surfaces of wingwalls, face of deck coping, underside of bridge floor from coping to face of outside beams, bridge deck, all faces of concrete barrier railing and approach slabs, Estimated Quantity = 11,215 Sft.

DESIGN DATA

Superstructure and Substructure designed for HL-93 loading, in accordance with AASHTO LRFD Bridge Design Specifications, 6th Edition, 2012 and subsequent interims.

Designed for actual dead load plus 35 #/sft, future wearing surface, and 15 #/sft, additional to permit use of Permanent Metal Deck Forms.

Slab designed with 1/2" wearing surface.

UNIT STRESSES:
 Class "C" Concrete F_c = 4000 p.s.i.
 Class "A" Concrete F_c = 3500 p.s.i.
 Reinforcing Steel (Grade 60) F_y = 60,000 p.s.i.

CONSTRUCTION LOADING

The exterior beam 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 beam. The finishing machine was assumed to be supported 6 inches outside the vertical coping form. The top overhang brackets were assumed to be located 6 inches past the edge of vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the beam bottom flange web.

Deck Falsework Load:
 Designed for the 15 lb/sft for permanent metal stay-in-place deck forms, removable deck forms, and 2 feet exterior walkway.

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

Finishing Machine Load: 4500 lb. distributed over 10 feet along coping.

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

- NOTES:**
1. For Railing FC Details, see Standard Drawing E 706-BRSF-01.
 2. For Concrete Bridge Railing Transition TFC, see Standard Drawing E 706-TTFC-01 thru E 706-TTFC-03.
 3. For MGS-A Guardrail Transition without curb, see Standard Drawing E 601-MGS-A-12.

PRESTRESSED CONCRETE I-BEAM BRIDGE
 THREE SPANS @ 52'-9", 62'-0", 52'-9" SKEW 12° LT.
 29'-4" CLEAR ROADWAY WIDTH
 KING ROAD OVER YELLOW RIVER
 MARSHALL COUNTY, INDIANA

NOT FOR CONSTRUCTION	INDIANA DEPARTMENT OF TRANSPORTATION		BRIDGE FILE MARSHALL 73	
	GENERAL PLAN		DESIGNATION 1600931	
DESIGNED: MKT	DRAWN: BDC	SURVEY BOOK		SHEETS
CHECKED: BMA	CHECKED: BMA	CONTRACT		PROJECT
		B 40720		1600931