

White, Evan

From: White, Evan
Sent: Thursday, June 22, 2023 1:52 PM
To: steve.johnson@wcunitedfund.org
Cc: St. Clair, Ross; David.D.Carr@usace.army.mil; McCloskey, Elizabeth
Subject: 2023-54-85-EJW-A, Wabash River Restoration Design - 401 Approval
Attachments: 401 WQC 2023-64-85-EJW-A, Wabash River Restoration Design.pdf

All,

Attached is the Section 401 Water Quality Certification for the Wabash River Restoration Design project in Wabash County.

IDEM ID: 2023-64-85-EJW-A
Latitude: 40.816374 Longitude: -85.775453
Wabash County

Let me know if you have any questions,



Evan White, Wetlands Project Manager
Wetlands and Stormwater Section, Office of Water Quality
100 North Senate Avenue, Room 1255
Indianapolis Indiana 46204
Phone: (317) 671-6698
EVWhite@idem.IN.gov

Section 401 Water Quality Certification and Isolated Wetlands Program: <http://www.in.gov/idem/wetlands>
Stormwater Program: <http://www.in.gov/idem/stormwater>
Indiana Stormwater Quality Manual: <http://www.in.gov/idem/stormwater/2363.htm>

Indiana Department of Environmental Management



IDEM values your feedback.

Learn how to make your voice heard and help us improve our services.





INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

Section 401 Water Quality Certification

VIA ELECTRONIC MAIL:

IDEM Number: 2023-64-85-EJW-A
USACE Number: LRL-2022-00975-DDC
Project Name: Wabash River Restoration Design
Authority: 327 IAC 2. CWA Sections: 301, 302, 303, 306, 307, & 401
Date of Issuance: June 22, 2023
Impacts must be completed by: June 22, 2025

Approved:

Brian Wolff, Branch Chief
Surface Water and Operations
Office of Water Quality

Applicant / Permittee: Wabash River Defenders
Attention: Steve Johnson
73 W. Canal Street
Wabash, IN 46992

Agent: Stantec
Attention: Ross St. Clair
708 Roosevelt Road
Walkerton, IN 46574

Project Location: Wabash County
Latitude: 40.816374 Longitude: -85.775453
Approximately 1.18 miles north of E Baumbauer Road
and S Riverwood Drive intersection near the city of
Wabash, Wabash County.

Project Description: Stabilize approximately 3,000 linear feet of the Wabash River utilizing rock and wood toe stabilization techniques and re-establishing a riparian buffer zone with native plantings, and bank grading. Project goals include:

- Tree rootballs will protrude from the toe of the bank to provide energy dissipation and aquatic habitat. Class 1 rip rap placed on the toe of the slope will maintain the rootballs' positioning below half bankfull elevation.
- Above half bankfull elevation, clean earthen backfill, coir mat, and seeding will be placed as well as a shrub and tree planted buffer beyond the top of the bank.

Authorized Impacts

STREAM IMPACT(S)	Length of Impact (linear feet)		
	Ephemeral	Intermittent	Perennial
Rootballs, Class 1 rip rap, and Clean Earthen Fill			3,000

Application Signed: December, 6, 2022

Application Received: January, 27, 2023

Based on available information, it is the judgment of this office that the impacts from the proposed project as outlined by this Section 401 Water Quality Certification and described in your application will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if you comply with the conditions set forth below. Therefore, subject to the following conditions, the Indiana Department of Environmental Management (IDEM) hereby grants Section 401 Water Quality Certification for the project described in your application. Any changes in project design or scope not detailed in the application described above or modified by this Section 401 Water Quality Certification are not authorized.

Failure to comply with the terms and conditions of this Section 401 Water Quality Certification may result in enforcement action against you. If an enforcement action is pursued, you could be assessed up to \$25,000 per day in civil penalties. You may also be subject to criminal liability if it is determined that the Section 401 Water Quality Certification was violated willfully or negligently.

Conditions of the Section 401 Water Quality Certification

1.0 General

- (a) Implement the project as depicted and described in the application for Section 401 Water Quality Certification as modified by the conditions of this certification.
- (b) Per 33 CFR 325.6(c), 327 IAC 5-2-6, IC 13-15-3-2 the federal license shall have an established timeframe. Therefore, all approved discharges must be completed within the term of the valid federal permit.
- (c) Per IC 13-14-2-2, the department may inspect public or private property to inspect for and investigate possible violations of environmental management laws. Therefore, the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials must be allowed:
 - (1) to enter your property, including impact and mitigation site(s);
 - (2) to have access to and copy at reasonable times any records that must be kept under the conditions of this certification;
 - (3) to inspect, at reasonable times, any monitoring or operational equipment or method; collection, treatment, pollution management or discharge facility or device; practices required by this certification; and any mitigation wetland site;
 - (4) to sample or monitor any discharge of pollutants or any mitigation site.

2.0 Erosion and Sediment Control

Per 40 CFR 122.26, 327 IAC 15; 327 IAC 2-1; 327 IAC 2-1.5, the use of appropriate stormwater control measures and maintenance thereof will prevent any sediment laden water from migrating off site and entering waterways and wetlands, potentially impairing water quality. Therefore, the following erosion and sediment control steps must be completed.

- (a) Designate on-site erosion and sediment control personnel that are trained and knowledgeable in storm water quality principles and practices to ensure that erosion and sediment control measures are installed at appropriate times and locations and are maintained to ensure compliance with this 401 WQC and, if applicable, the construction site run-off general permit.
- (b) Implement erosion and sediment control measures on the construction site prior to land disturbance to minimize soil from leaving the site or entering a

waterbody. Erosion and sediment control measures shall be implemented using an appropriate order of construction (sequencing) relative to the land-disturbing activities associated with the project. Appropriate measures include, but are not limited to, silt fence, diversions, and sediment traps.

- (c) Monitor and maintain erosion control measures and devices regularly, especially after rain events, until all soils disturbed by construction activities have been permanently stabilized.
- (d) Use run-off control measures, including but not limited to diversions and slope drains. These measures are effective for directing and managing run-off to sediment control measures and for preventing direct run-off into waterbodies.
- (e) Install and make appropriate modifications to erosion and sediment control measures based on current site conditions as construction progresses on the site. The Indiana Storm Water Quality Manual or similar guidance documents are available to assist in the selection of measures that are applicable to individual project sites.
- (f) Implement appropriate erosion and sediment control measures for all temporary run-arounds, cofferdams, temporary causeways, temporary crossings, or other such structures that are to be constructed within any waters of the state. Minimize disturbance to riparian areas when constructing these structures. Structures must be included in reviewed designs or approved by IDEM prior to use. Construct temporary run-arounds, temporary cofferdams, temporary causeways, temporary crossings, or other such structures of non-erodible materials. Temporary crossings and causeways must be completely removed upon completion of the project and the affected area restored to pre-construction contours, grades, and vegetative conditions.
- (f) Install stream pump-around operations in accordance with the plans and ensure in-stream component is constructed of non-sediment producing materials. The discharge at the outlet shall not cause erosion of the stream bottom and banks.
- (g) Direct cofferdam dewatering activities to an appropriate sediment control measure or a combination of measures prior to discharging into a water of the state to minimize the discharge of sediment-laden water.
- (h) Ensure cut and fill slopes located adjacent to wetlands and streams (including encapsulated streams) or that directly discharge to these aquatic features are stabilized using rapid/incremental seeding or other appropriate stabilization measures.

- (i) Stabilize and re-vegetate disturbed soils as final grades are achieved. Initiation of stabilization must occur immediately or, at a minimum, within the requirements of a construction site run-off permit after work is completed. Use a mixture of herbaceous species beneficial for wildlife or an emergent wetland seed mix wherever possible and appropriate. Tall fescue may only be planted in ditch bottoms and ditch side slopes and must be a low endophyte seed mix. Stabilize the channel before releasing stream flows into the channel.
- (j) As work progresses, re-vegetate areas void of protective ground cover. Areas that are to be re-vegetated shall use seeding and anchored mulch. **If alternative methods are required to ensure stabilization, erosion control blankets may be used that are biodegradable, that use loose-woven/leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation).**

Anchor mulch. Anchoring shall be appropriate for the site characteristics such as slope, slope length, and concentrated flows. **Anchoring methods may not include loose netting over straw, but can range from crimping of straw, erosion control blankets as specified above that minimize wildlife entrapment, or net free blankets.** Tackifiers with mulch and hydro-mulch are acceptable and shall be applied to the manufacturer specifications.

4.0 Construction

Per 327 IAC 2-1-6(b)(4) the protection of existing uses for aquatic life is required and, per 327 IAC 2-1.3-2 (4) the utilization of best management practices helps ensure the protection of existing uses. Therefore, the following best management practices are required.

- (a) Avoid in stream channel work during the fish spawning season (April 1 through June 30).
- (b) Clearly mark wetlands and streams that are to remain undisturbed on the project site.
- (c) Restrict channel work and vegetation clearing to the minimum necessary for the installation of any structures. Work from only one side of the stream, and, where possible, from the side of the stream which does not have adjacent wetlands. If no wetlands are present, work from the side with the fewest trees and woody vegetation.

- (d) Ensure permanent in-stream structures, including but not limited to culverts and other stream encapsulations, are embedded and sized appropriately so as not to impede surface flows or create abnormal impediments to aquatic life.
- (e) Deposit any dredged material in a contained upland (non-wetland) disposal area to prevent sediment run-off to any waterbody.
- (f) Create temporary structures constructed in streams such that near normal stream flows are maintained. (327 IAC definitions Stream Design Flow)

Other Applicable Permits

If the land disturbance for the overall project will disturb one (1) acre or more, a construction stormwater general permit is required for the project. Permit coverage must be obtained prior to the initiation of land-disturbing activities. Information related to obtaining permit coverage is available at www.in.gov/idem/stormwater or by contacting the IDEM, Stormwater Program at 317-233-1864 or via email at Stormwat@idem.IN.gov.

This certification does not relieve you of the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person. You may wish to contact the Indiana Department of Natural Resources at 317-232-4160 (toll free at 877-928-3755) concerning the possible requirement of natural freshwater lake or floodway permits.

This certification does not:

- (1) Authorize impacts or activities outside the scope of this certification;
- (2) Authorize any injury to persons or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations;
- (3) Convey any property rights of any sort, or any exclusive privileges;
- (4) Preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities; or
- (5) Authorize changes in the plan design detailed in the application.

Notice of Right to Administrative Review (Permits)

If you wish to challenge this permit, you must file a Petition for Administrative Review with the Office of Environmental Adjudication (OEA), and serve a copy of the petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM. Addresses are:

Director	Commissioner
Office of Environmental Adjudication	Indiana Dept. of Environmental Management
Indiana Government Center North	Indiana Government Center North
100 North Senate Avenue, Room N103	100 North Senate Avenue, Room 1301
Indianapolis, Indiana 46204	Indianapolis, Indiana 46204

The petition must contain the following information:

- (a) The name, address and telephone number of each petitioner.
- (b) A description of each petitioner's interest in the permit.
- (c) A statement of facts demonstrating that each petitioner is:
 - (1) a person to whom the order is directed;
 - (2) aggrieved or adversely affected by the permit; or
 - (3) entitled to administrative review under any law.
- (d) The reasons for the request for administrative review.
- (e) The particular legal issues proposed for review.
- (f) The alleged environmental concerns or technical deficiencies of the permit.
- (g) The permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
- (h) The identity of any persons represented by the petitioner.
- (i) The identity of the person against whom administrative review is sought.
- (j) A copy of the permit that is the basis of the petition.
- (k) A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the permit. Examples are:

- (a) Failure to file a Petition by the applicable deadline;
- (b) Failure to serve a copy of the Petition upon IDEM when it is filed; or
- (c) Failure to include the information required by law.

If you seek to have a permit stayed during the administrative review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OEA will provide all parties with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders

disposing of the review of this action without intervening in the proceeding you must submit a written request to OEA at the address above.

If you have procedural or scheduling questions regarding your Petition for Administrative Review, additional information on the review process is available at the website of the Office of Environmental Adjudication at <http://www.in.gov/oea>.

If you have any questions about this certification, please contact Evan White, Project Manager, by email at EVWhite@IDEM.IN.Gov or by phone at 317-671-6698.

Enclosure

cc: David Carr USACE – Louisville District
Liz McCloskey, USFWS
Ross St. Clair, Stantec



Indiana Department of Environmental Management
Office of Water Quality
Wetlands Section

Publication Date:
May 30, 2023

Closing Date:
June 20, 2023

IDEM ID Number:
2023-64-85-EJW-A

Corps of Engineers ID Number:
LRL-2022-00975-DDC

PUBLIC NOTICE

To all interested parties:

This letter shall serve as a formal notice of the receipt of an application for **Section 401 Water Quality Certification** by the Indiana Department of Environmental Management (IDEM). The purpose of the notice is to inform the public of active applications submitted for water quality certification under Section 401 of the Clean Water Act (33 U.S.C. § 1341) and to solicit comments and information on any impacts to water quality related to the proposed project. IDEM will evaluate whether the project complies with Indiana's water quality standards as set forth at 327 IAC 2.

- 1. Applicant:** Steve Johnson
Wabash River Defenders
73 W. Canal Street
Wabash, IN 46992
- 2. Agent:** Ross St. Clair
Stantec
708 Roosevelt Road
Walkerton, IN 46574
- 3. Project location:** Latitude: 40.816374 Longitude: -85.775453
Approximately 1.18 miles north of E Baumbauer Road and S Riverwood Drive intersection near the city of Wabash, Wabash County.
- 4. Affected waterbody:** Approximately 3,000 linear feet of the Wabash River.
- 5. Project Description:** To prevent further erosion along this stretch of the Wabash River, the applicant proposes rock and wood toe stabilization, a re-established riparian buffer zone with native plantings, and bank grading. Tree rootballs will protrude from the toe of the bank to provide energy dissipation and aquatic habitat. Class 1 rip rap on the toe of the slope will maintain the rootballs' positioning below half bankfull elevation. Above half bankfull elevation, clean earthen backfill, coir mat, and seeding will be placed as well as a shrub and tree planted buffer beyond the top of the bank.
Additional information may be found online at <https://www.in.gov/idem/5474.htm>

Comment period: Any person or entity who wishes to submit comments or information relevant to the aforementioned project may do so by the closing date noted above. Only comments or information related to water quality or potential impacts of the project on water quality can be considered by IDEM in the water quality certification review process.

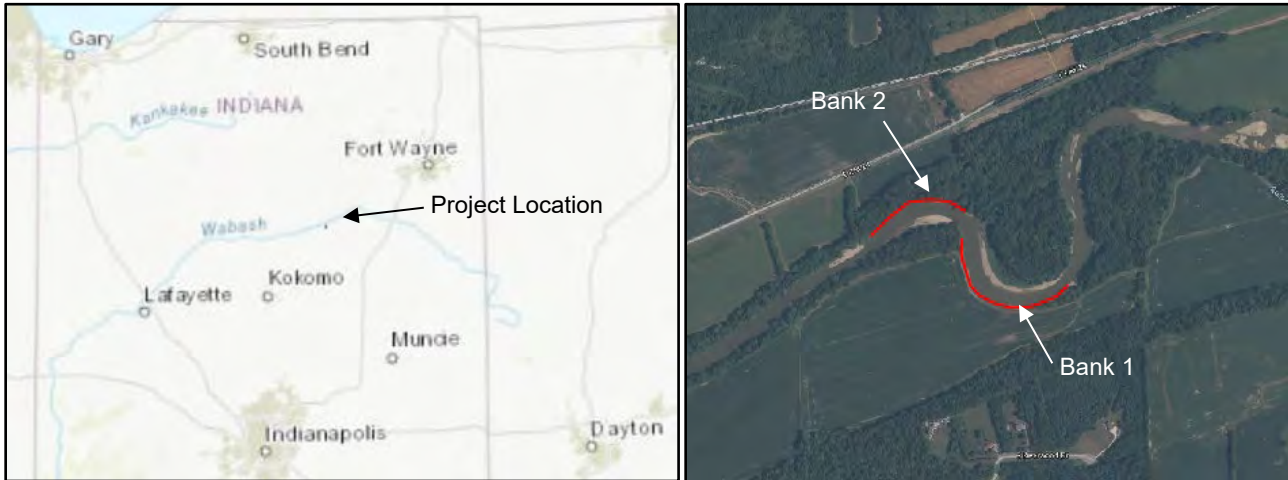
Public Hearing: Any person may submit a written request that a public hearing be held to consider issues related to water quality in connection with the project detailed in this notice. The request for a hearing should be submitted within the comment period to be considered timely. The request should also state the reason for the public hearing as specifically as possible to assist IDEM in determining whether a public hearing is warranted.

Questions? Additional information may be obtained from Evan White, Project Manager, by phone at 317-671-6698 or by e-mail at EVWhite@idem.in.gov. Please address all correspondence to the project manager and reference the IDEM project identification number listed on this notice. Indicate if you wish to receive a copy of IDEM's final decision. Written comments and inquiries may be forwarded to -

Indiana Department of Environmental Management
100 North Senate Avenue

MC65-42 WQS IGCN 1255
Indianapolis, Indiana 46204-2251 FAX: 317/232-8406

WABASH RIVER BANK STABILIZATION



Project Location and Site Map

PROJECT STATISTICS:

Site Information: Location: Wabash River, 2.75 miles NE of Wabash, IN, Wabash County
Project Length: 2,390 ft total (1,470 ft Bank 1, 970 ft Bank 2)
Drainage Area: 1,720 mi²
Bank Erosion in Last 25 years: ~3.2 acres, ~63,000 CY total

Project Information: Project Sponsor: Wabash River Defenders
Engineering Design: Cardno now Stantec
Construction Timeframe: TBD but dependent on funding
Estimated Cost: ~\$450,000-700,000



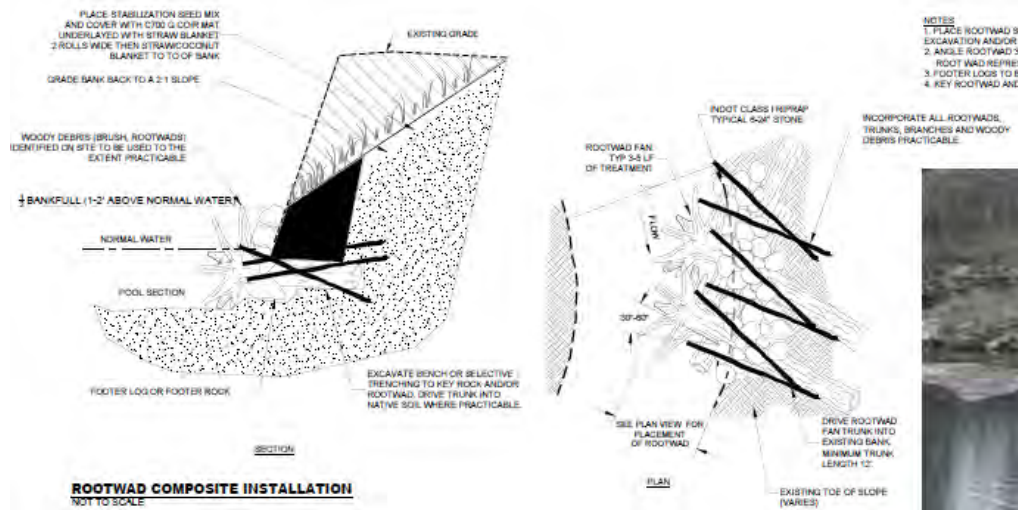
Wabash River, IN: Existing Bank Conditions

PROJECT OVERVIEW:

The two banks in the project area have experienced significant erosion over the last 20-30 years since the final stand of timber eroded into the river. The project looks to address 2,390 linear feet of actively eroding banks typically 10-13 feet in height. A lack of deep-rooted vegetation and high energy flow along the toe of the slope have led to accelerated erosion. Aerials dating back to 1998 indicate that approximately 3.2 acres of bank have been lost, which equates to approximately 62,500 tons of sediment from these two banks (2.2 acres/43,000 cubic yards from Bank 1 and 1 acre/19,500 cubic yards from Bank 2). It should be noted that while the outside of these meander bends have seen excessive erosion, the inside of the meander bends have been aggrading as sand bars form from deposited material. The average lateral erosion rate is 4-6 feet per year for Bank 1, and 2-4 feet per year for Bank 2 dating back a minimum of 20 years in which aerial imagery was reviewed. Lost ground is largely agricultural at Bank 1 and continues to down remaining tree buffer for Bank 2 which parallels a local asphalt biking trail.

PROJECT GOALS:

The project focuses on stabilization of approximately 2,400 of stream on the Wabash River between Lagro and Wabash with the overall goals of stopping excessive streambank erosion, reducing sediment supply downstream, and improving aquatic and riparian habitat.



Wood and Rock Composite Toe

DESIGN & TECHNIQUE:

Cardno-now Stantec is a professional stream restoration and engineering firm and are currently designing a long-term bank stabilization treatment to address the erosion concerns along these two banks. The proposed treatment includes bank grading and a wood and rock composite toe. We would utilize all of the tree rootballs, trunks and woody debris as the base of the toe stabilization and utilize Class I riprap as ballast and additional toe support up to the ½ bankfull elevation. Above this wood and rock composite toe we would seed, coir mat, and plant the bank for long term stability. A shrub and tree planted buffer is proposed along the bank and beyond the top of bank. We look to address the immediate toe failure, provide long term deep rooted vegetation, and also enhance aquatic and riparian conditions along the entire project reach.

WABASH RIVER RESTORATION DESIGN

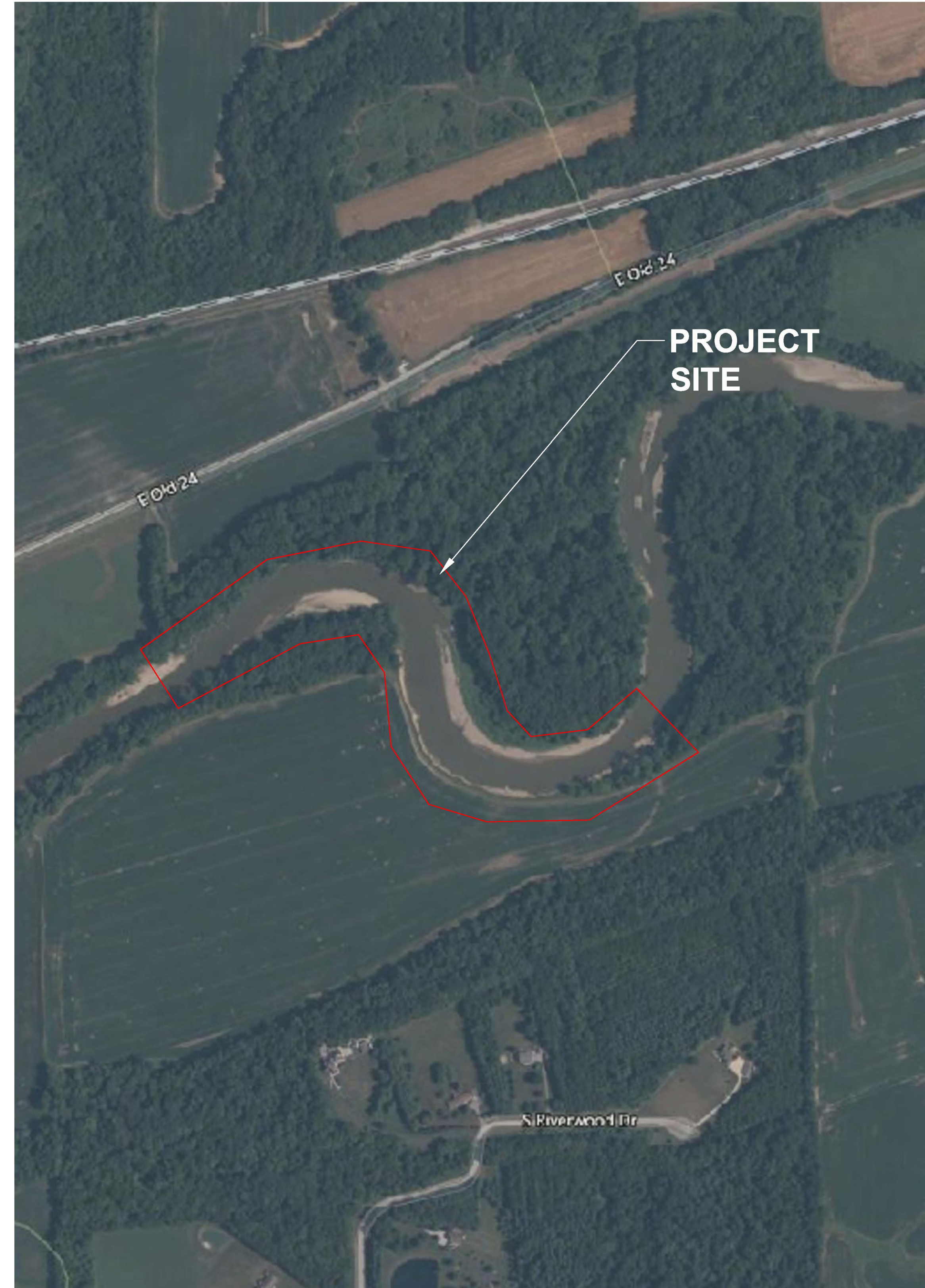
WABASH RIVER DEFENDERS

Sheet List Table

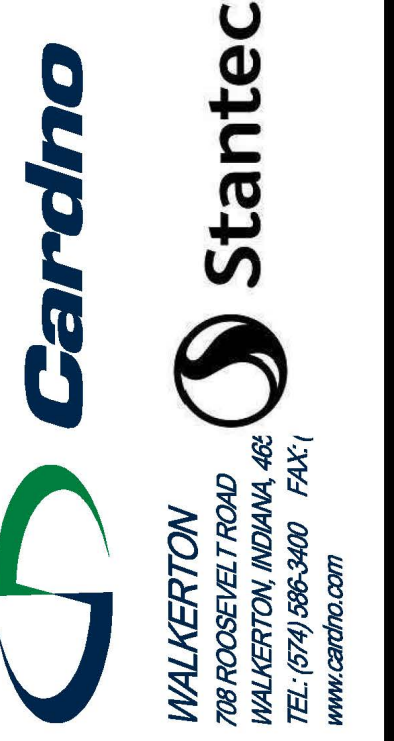
Sheet Number	Sheet Title
1	TITLE SHEET AND SHEET INDEX
2	SHEET INDEX OVERVIEW
3	PROPOSED FLECK PROPERTY
4	PROPOSED FLECK PROPERTY
5	PROPOSED FLECK PROPERTY
6	PROPOSED BEAUCHAMP PROPERTY
7	PROPOSED BEAUCHAMP PROPERTY
8	CROSS SECTIONS
9	DETAILS



LOCATION MAP
SCALE: 1" = 1000'



SITE MAP
SCALE: 1" = 300'



TITLE SHEET AND SHEET INDEX
WABASH RIVER RESTORATION DESIGN
WABASH RIVER DEFENDERS
WABASH COUNTY, INDIANA

DATE	DESCRIPTION

DRAFT

DATE	DECEMBER 2022
DRAWN	JLM
DESIGNED	RAS
CHECKED	
PROJECT #	J211003400

SHEET TITLE
TITLE SHEET

SHEET NUMBER
1

PERMIT PLANS

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- LEGEND**
- BENCHMARK
 - EXISTING GRADE 1' CONTOUR
 - EXISTING GRADE 5' CONTOUR
 - SHEET EXTENTS

- STREAM ALIGNMENT/THALWEG
- PROPERTY LINE
- FLOODWAY
- WETLAND DATA POINT

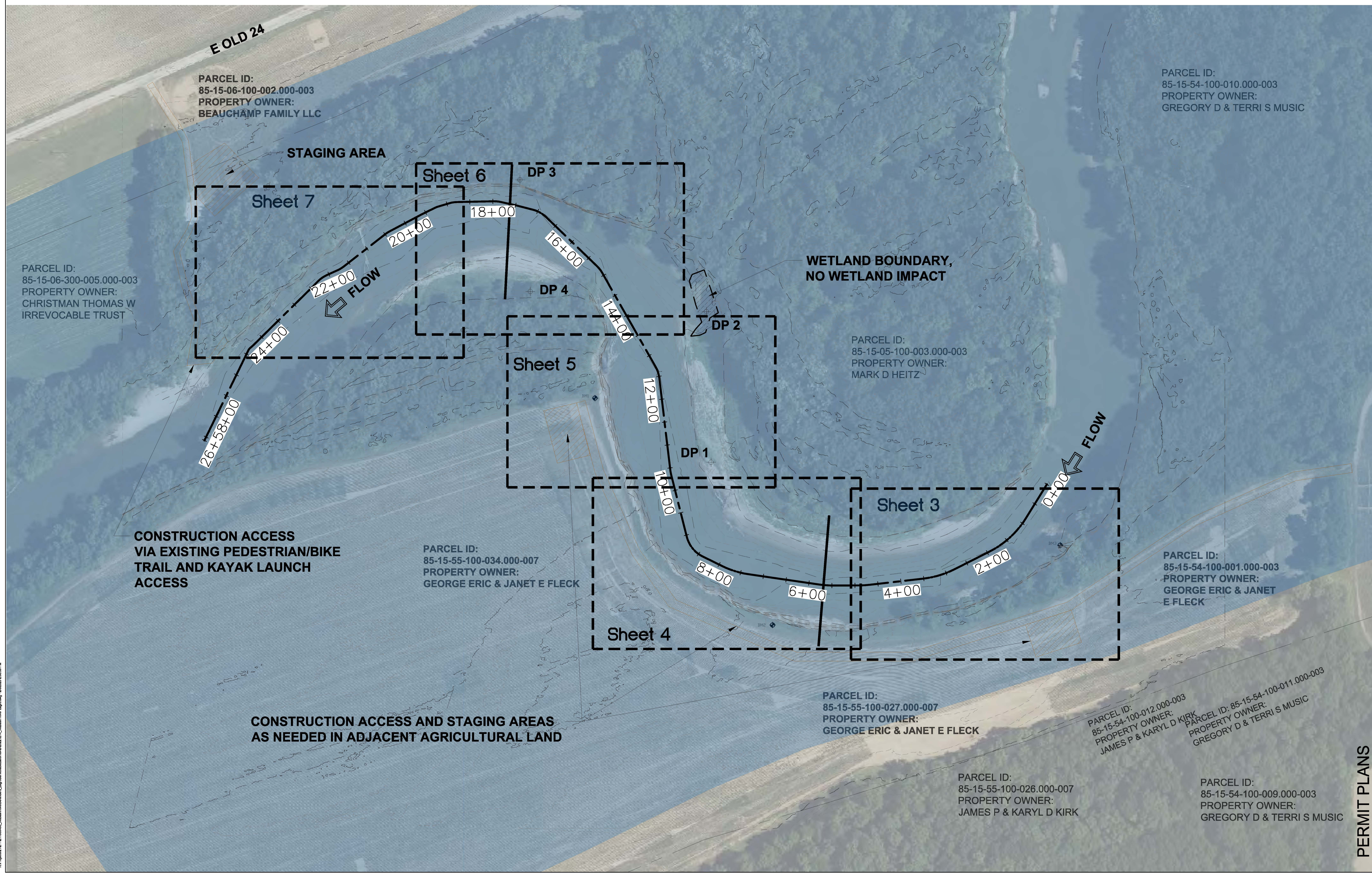
- CONSTRUCTION ACCESS
- CONSTRUCTION STAGING AREA

BENCHMARKS
 BENCHMARK 1 = REBAR 668.054
 BENCHMARK 2 = REBAR 666.648
 BENCHMARK 3 = REBAR 660.722

SCALE: 1" = 100'
 0 50 100 Feet

Cardno
 NOW **Stantec**

WALKERTON
 728 Riverfront Plaza
 Walkerton, IN 46784 USA
 TEL (717) 574-306-3400
 www.cardno.com



PARCEL ID:
 85-15-54-100-010.000-003
 PROPERTY OWNER:
 GREGORY D & TERRI S MUSIC

PARCEL ID:
 85-15-06-300-005.000-003
 PROPERTY OWNER:
 CHRISTMAN THOMAS W
 IRREVOCABLE TRUST

PARCEL ID:
 85-15-06-100-002.000-003
 PROPERTY OWNER:
 BEAUCHAMP FAMILY LLC

PARCEL ID:
 85-15-05-100-003.000-003
 PROPERTY OWNER:
 MARK D HEITZ

PARCEL ID:
 85-15-55-100-034.000-007
 PROPERTY OWNER:
 GEORGE ERIC & JANET E FLECK

PARCEL ID:
 85-15-54-100-001.000-003
 PROPERTY OWNER:
 GEORGE ERIC & JANET
 E FLECK

PARCEL ID:
 85-15-55-100-027.000-007
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 GEORGE ERIC & JANET E FLECK

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 PROPERTY OWNER:
 JAMES P & KARYL D KIRK

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 JAMES P & KARYL D KIRK

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 GREGORY D & TERRI S MUSIC

PARCEL ID:
 85-15-54-100-009.000-003
 PROPERTY OWNER:
 GREGORY D & TERRI S MUSIC

SHEET INDEX
 WABASH RIVER RESTORATION DESIGN
 WABASH RIVER DEFENDERS
 WABASH COUNTY, IN




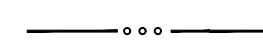



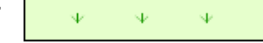
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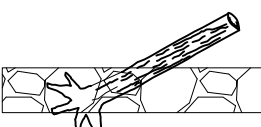


PERMIT PLANS

DATE	DECEMBER 2022
DRAWN	JJLM
DESIGNED	JRAS
CHECKED	JXXX
PROJECT #	J211003400
SHEET TITLE	PROPOSED
SHEET NUMBER	2
LAND USE #	XXX

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LEGEND

-  BENCHMARK
-  EXISTING TOB OF BANK
-  EXISTING GRADE 1' CONTOUR
-  EXISTING TOE OF SLOPE
-  EXISTING GRADE 5' CONTOUR
-  BANK GRADING & PLANTING ZONE 1
-  STREAM THALWEG/ALIGNMENT
-  PLANTING ZONE 2

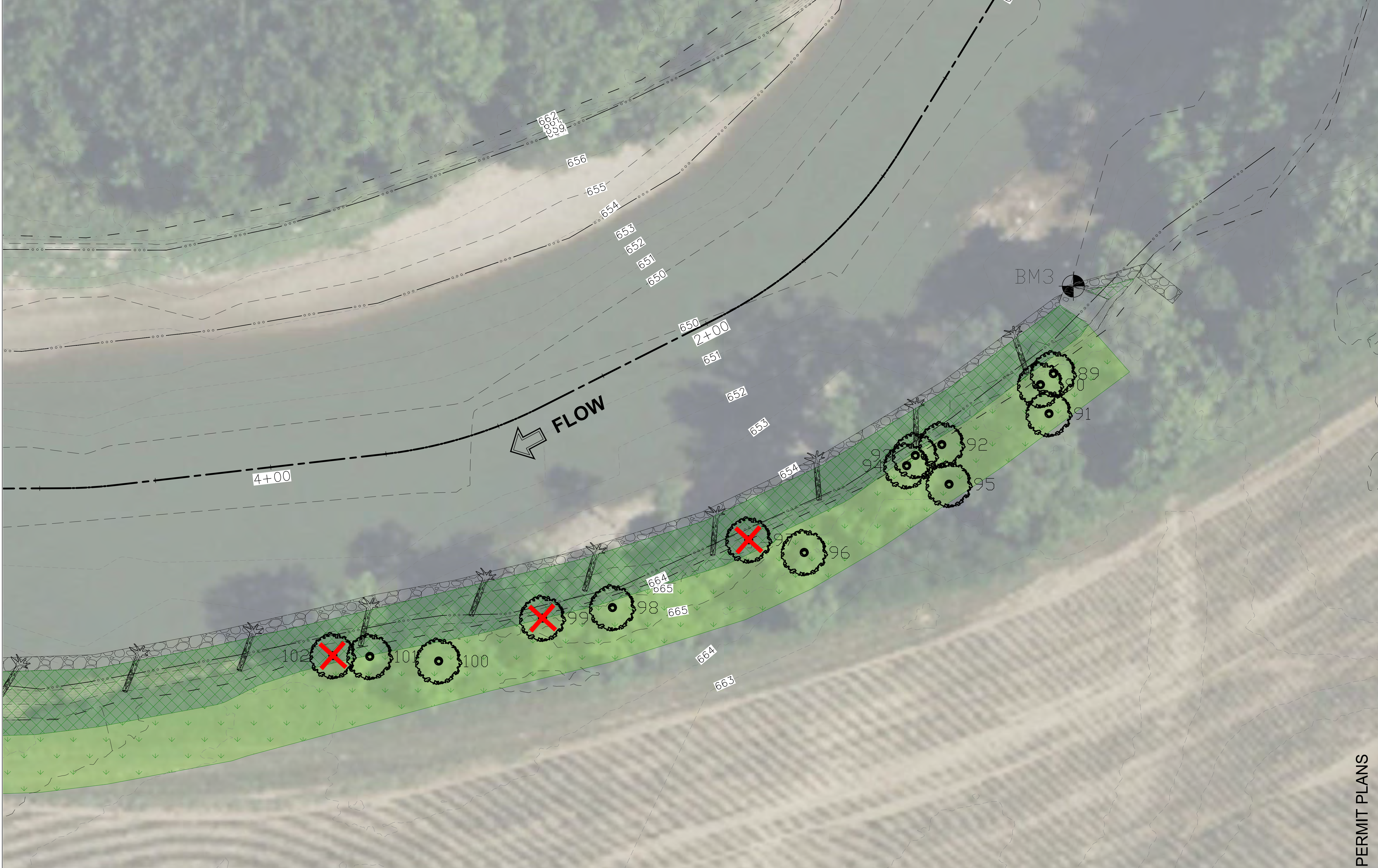
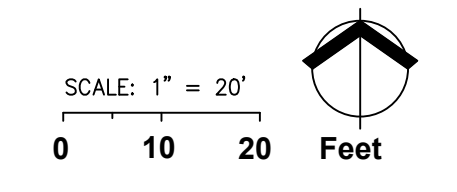
-  ROCK & WOOD TOE STABILIZATION
-  EXISTING TREE TO REMAIN
(SEE SHEET 10 FOR TREE DATA)
-  EXISTING TREE TO BE REMOVED
(SEE SHEET 10 FOR TREE DATA)

BENCHMARKS
BENCHMARK 2 = REBAR 666.648

NOTES

PLANTING ZONE 1:
TOP OF STONE (ELE 655') TO TOP OF BANK. BARE ROOT SHRUBS 10' ON CENTER AND SLOPE STABILIZATION SEED MIX WITH COIR MAT.

PLANTING ZONE 2: FROM TOP OF BANK TO 25' BEYOND TOP OF PROPOSED BANK FOR FLECK PROPERTY AND 10' BEYOND TOP OF PROPOSED BANK FOR BEAUCHAMP PROPERTY SHRUBS AND TREES 10' ON CENTER. SLOPE STABILIZATION SEED MIX



Cardno
NOW **Stantec**

WALKERTON
788 Passavant Road
Walkerton, IN 46784 USA
TEL (717) 574-306-3400
www.cardno.com

PROPOSED FLECK PROPERTY
WABASH RIVER RESTORATION DESIGN
WABASH RIVER DEFENDERS
WABASH COUNTY, IN

#	DATE	DESCRIPTION

DATE	DECEMBER 2022
DRAWN	JJLM
DESIGNED	JRAS
CHECKED	JXXX
PROJECT #	J211003400

SHEET TITLE
PROPOSED








SHEET NUMBER
3

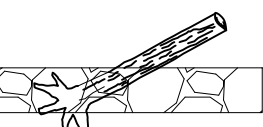


LAND USE # XXX

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PERMIT PLANS

LEGEND

-  BENCHMARK
-  EXISTING TOB OF BANK
-  EXISTING GRADE 1' CONTOUR
-  EXISTING TOE OF SLOPE
-  EXISTING GRADE 5' CONTOUR
-  BANK GRADING & PLANTING ZONE 1
-  STREAM THALWEG/ALIGNMENT
-  PLANTING ZONE 2

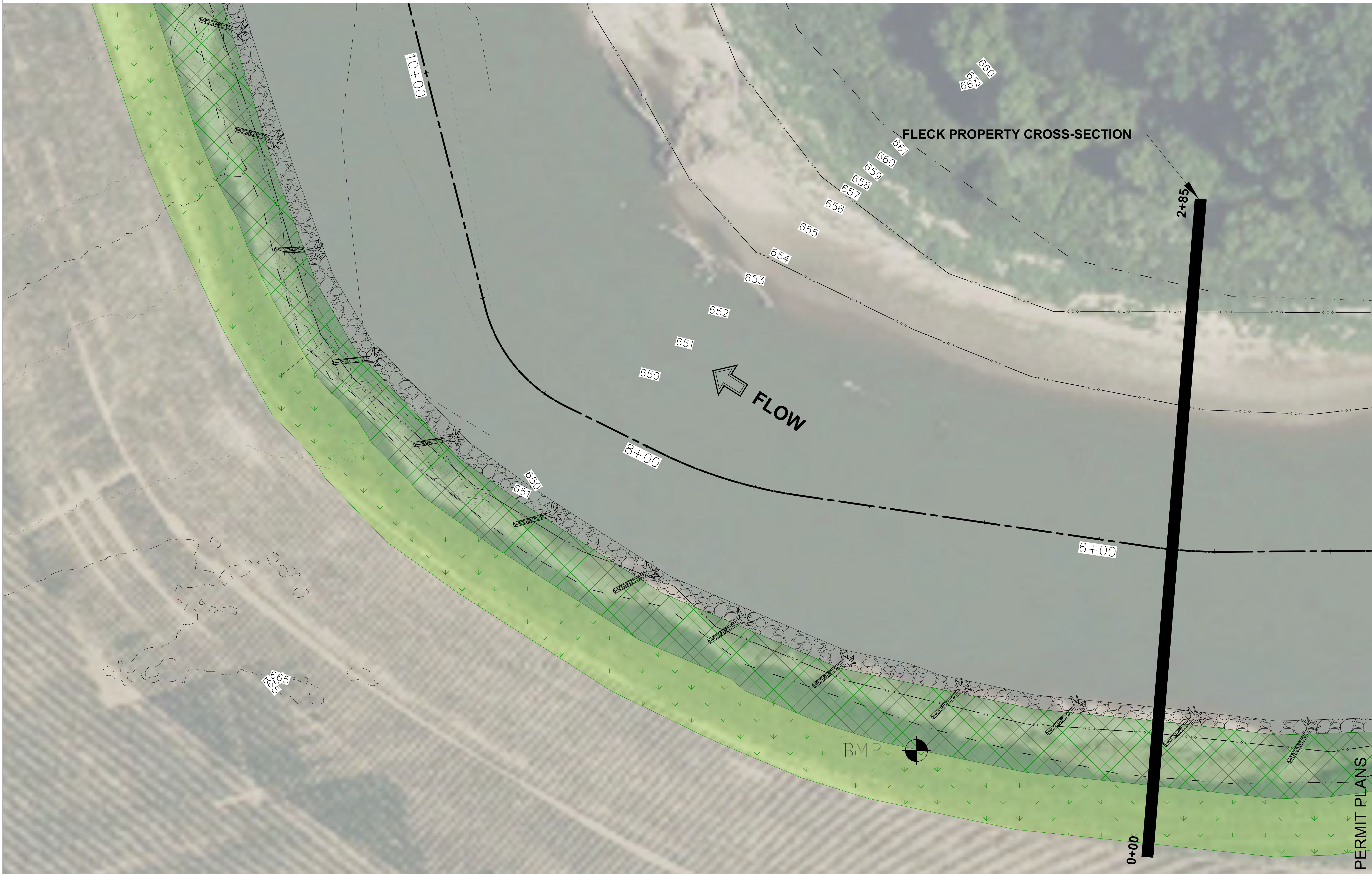
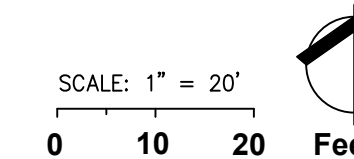
-  ROCK & WOOD TOE STABILIZATION
-  EXISTING TREE TO REMAIN
(SEE SHEET 10 FOR TREE DATA)
-  EXISTING TREE TO BE REMOVED
(SEE SHEET 10 FOR TREE DATA)

BENCHMARKS
BENCHMARK 2 = REBAR 666.648

NOTES

PLANTING ZONE 1:
TOP OF STONE (ELE 655') TO TOP OF BANK. BARE ROOT SHRUBS 10' ON CENTER AND SLOPE STABILIZATION SEED MIX WITH COIR MAT.

PLANTING ZONE 2: FROM TOP OF BANK TO 25' BEYOND TOP OF PROPOSED BANK FOR FLECK PROPERTY AND 10' BEYOND TOP OF PROPOSED BANK FOR BEAUCHAMP PROPERTY SHRUBS AND TREES 10' ON CENTER. SLOPE STABILIZATION SEED MIX



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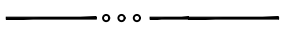






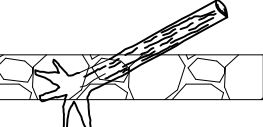


**PROPOSED FLECK PROPERTY
WABASH RIVER RESTORATION DESIGN
WABASH RIVER DEFENDERS
WABASH COUNTY, IN**

#	DATE	DESCRIPTION

DATE	DECEMBER 2022
DRAWN	JJLM
DESIGNED	JRAS
CHECKED	JXXX
PROJECT #	J2211003400
SHEET TITLE	PROPOSED
SHEET NUMBER	4
LAND USE #	XXX

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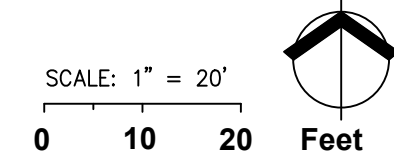
LEGEND

-  BENCHMARK
-  EXISTING TOB OF BANK
-  EXISTING TOE OF SLOPE
-  EXISTING GRADE 1' CONTOUR
-  EXISTING GRADE 5' CONTOUR
-  STREAM THALWEG/ALIGNMENT
-  BANK GRADING & PLANTING ZONE 1
-  PLANTING ZONE 2
-  FLOODPLAIN GRADING
-  ROCK & WOOD TOE STABILIZATION
-  EXISTING TREE TO REMAIN (SEE SHEET 10 FOR TREE DATA)
-  EXISTING TREE TO BE REMOVED (SEE SHEET 10 FOR TREE DATA)

BENCHMARKS
BENCHMARK 1 = REBAR 668.054

NOTES

- PLANTING ZONE 1:
TOP OF STONE (ELE 655') TO TOP OF BANK. BARE ROOT SHRUBS 10' ON CENTER AND SLOPE STABILIZATION SEED MIX WITH COIR MAT.
- PLANTING ZONE 2: FROM TOP OF BANK TO 25' BEYOND TOP OF PROPOSED BANK FOR FLECK PROPERTY AND 10' BEYOND TOP OF PROPOSED BANK FOR BEAUCHAMP PROPERTY SHRUBS AND TREES 10' ON CENTER. SLOPE STABILIZATION SEED MIX



**PROPOSED FLECK PROPERTY
WABASH RIVER RESTORATION DESIGN
WABASH RIVER DEFENDERS
WABASH COUNTY, IN**

#	DATE	DESCRIPTION

DATE	DECEMBER 2022
DRAWN	JJLM
DESIGNED	JRAS
CHECKED	JXXX
PROJECT #	J211003400
SHEET TITLE	PROPOSED
SHEET NUMBER	5
LAND USE #	XXX

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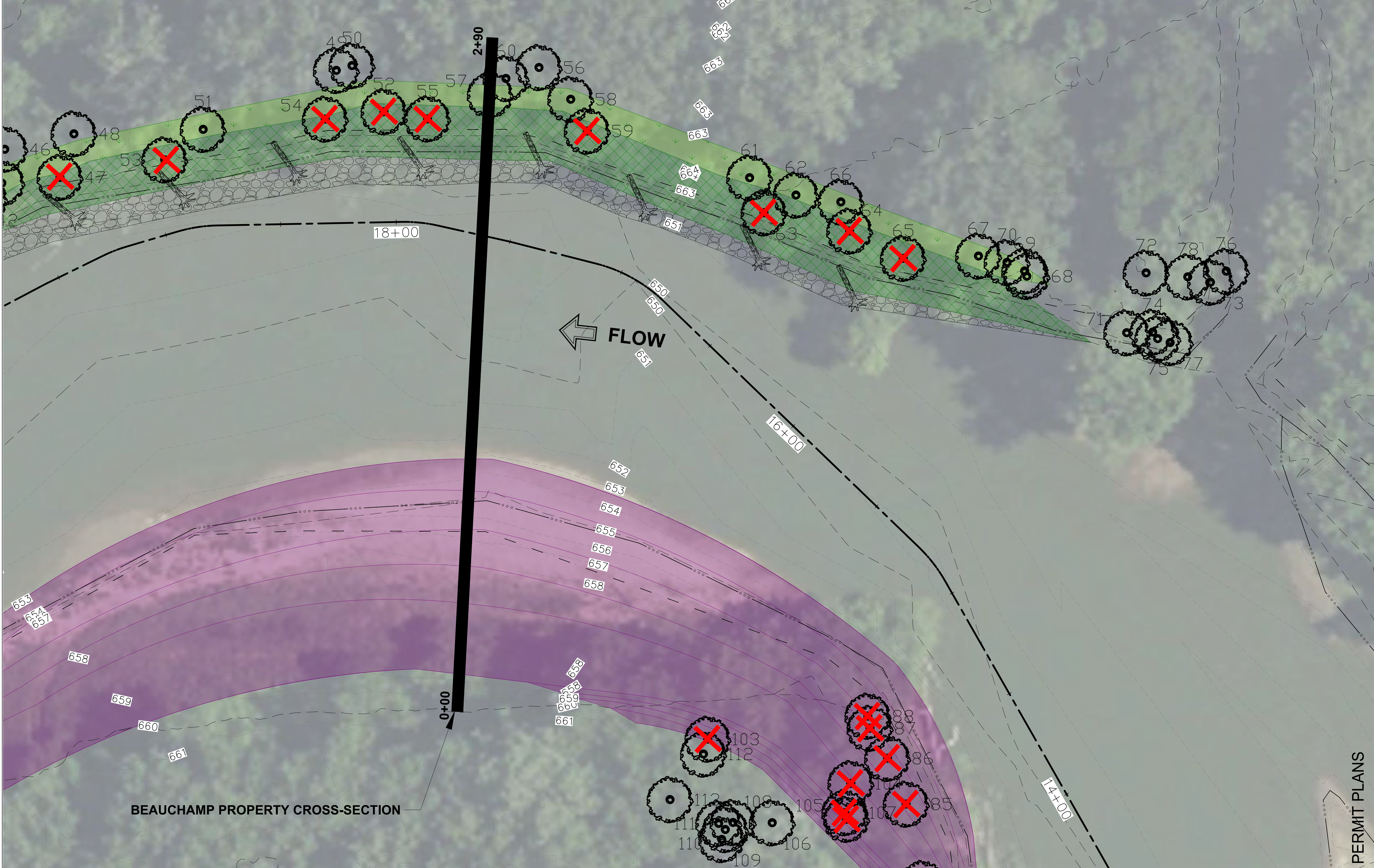
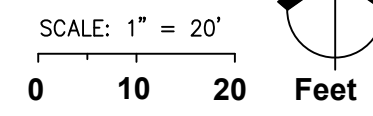
PERMIT PLANS

LEGEND

- BENCHMARK
- EXISTING GRADE 1' CONTOUR
- EXISTING GRADE 5' CONTOUR
- STREAM THALWEG/ALIGNMENT
- EXISTING TOB OF BANK
- EXISTING TOE OF SLOPE
- BANK GRADING & PLANTING ZONE 1
- PLANTING ZONE 2
- FLOODPLAIN GRADING
- ROCK & WOOD TOE STABILIZATION
- EXISTING TREE TO REMAIN (SEE SHEET 10 FOR TREE DATA)
- EXISTING TREE TO BE REMOVED (SEE SHEET 10 FOR TREE DATA)

NOTES

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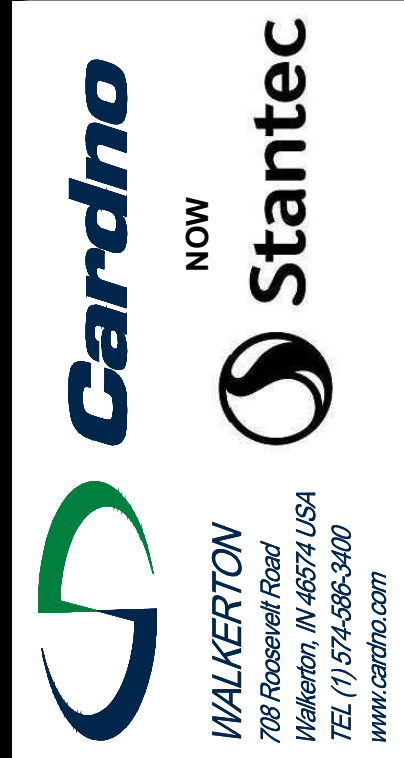
**PROPOSED BEAUCHAMP PROPERTY
WABASH RIVER RESTORATION DESIGN
WABASH RIVER DEFENDERS
WABASH COUNTY, IN**

#	DATE	DESCRIPTION

PERMIT PLANS

DATE | DECEMBER 2022
 DRAWN | JLM
 DESIGNED | JRS
 CHECKED | JXX
 PROJECT # | J211003400

SHEET TITLE | PROPOSED
 SHEET NUMBER | **6**
 LAND USE # | XXX



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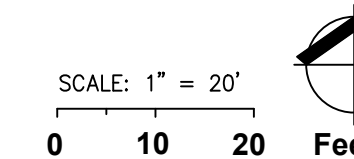
LEGEND

- BENCHMARK
- EXISTING TOB OF BANK
- EXISTING GRADE 1' CONTOUR
- EXISTING GRADE 5' CONTOUR
- STREAM THALWEG/ALIGNMENT
- ROCK & WOOD TOE STABILIZATION
- EXISTING TREE TO REMAIN (SEE SHEET 10 FOR TREE DATA)
- EXISTING TREE TO BE REMOVED (SEE SHEET 10 FOR TREE DATA)
- BANK GRADING & PLANTING ZONE 1
- PLANTING ZONE 2
- FLOODPLAIN GRADING

NOTES

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 TOP OF STONE (ELE 655') TO TOP OF BANK. BARE ROOT SHRUBS 10' ON CENTER AND SLOPE STABILIZATION SEED MIX WITH COIR MAT.

PLANTING ZONE 2: FROM TOP OF BANK TO 25' BEYOND TOP OF PROPOSED BANK FOR FLECK PROPERTY AND 10' BEYOND TOP OF PROPOSED BANK FOR BEAUCHAMP PROPERTY SHRUBS AND TREES 10' ON CENTER. SLOPE STABILIZATION SEED MIX



PROPOSED BEAUCHAMP PROPERTY
 WABASH RIVER BANK STABILIZATION DESIGN
 WABASH RIVER DEFENDERS
 WABASH COUNTY, IN

#	DATE	DESCRIPTION

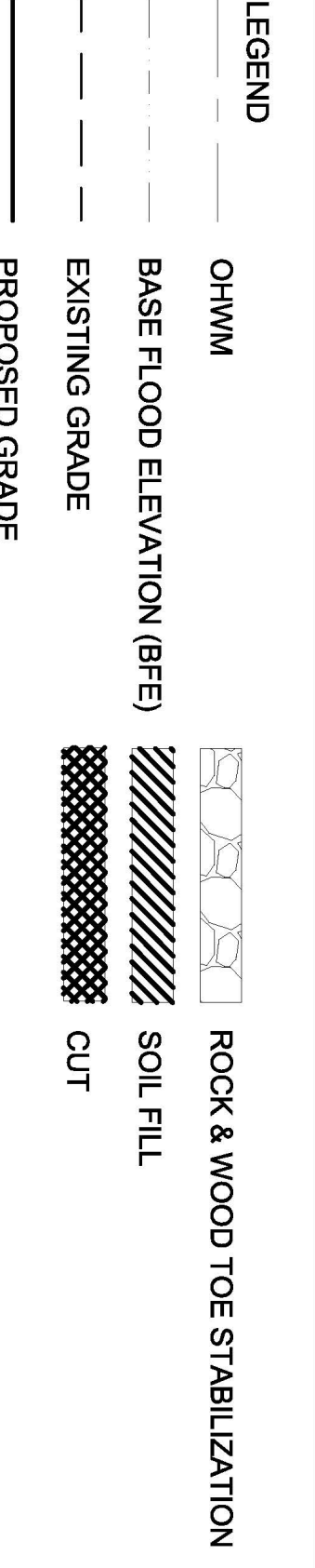
DATE	DECEMBER 2022
DRAWN	JJLM
DESIGNED	JRAS
CHECKED	JXXX
PROJECT #	IJ211003400
SHEET TITLE	PROPOSED
SHEET NUMBER	7
LAND USE #	XXX

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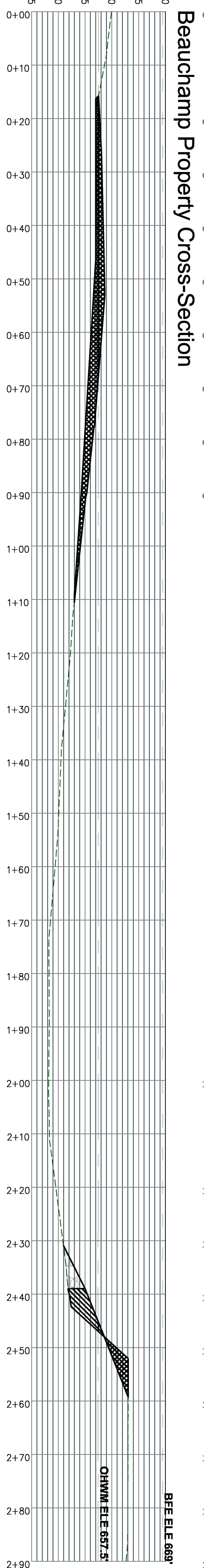
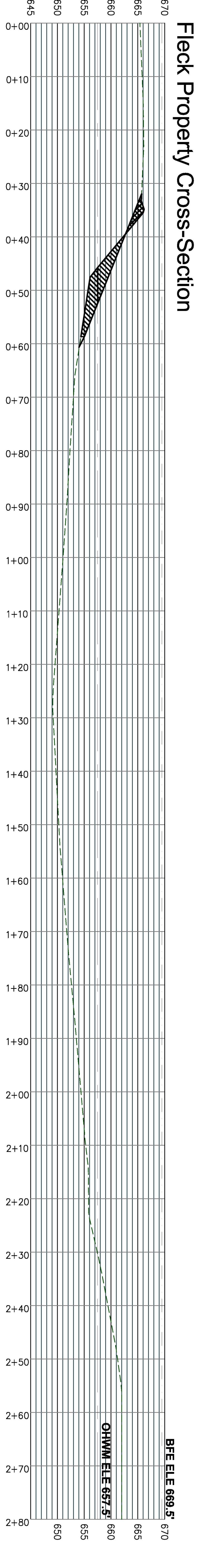
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PERMIT PLANS



SCALE: 1" = 10'

0 5 10



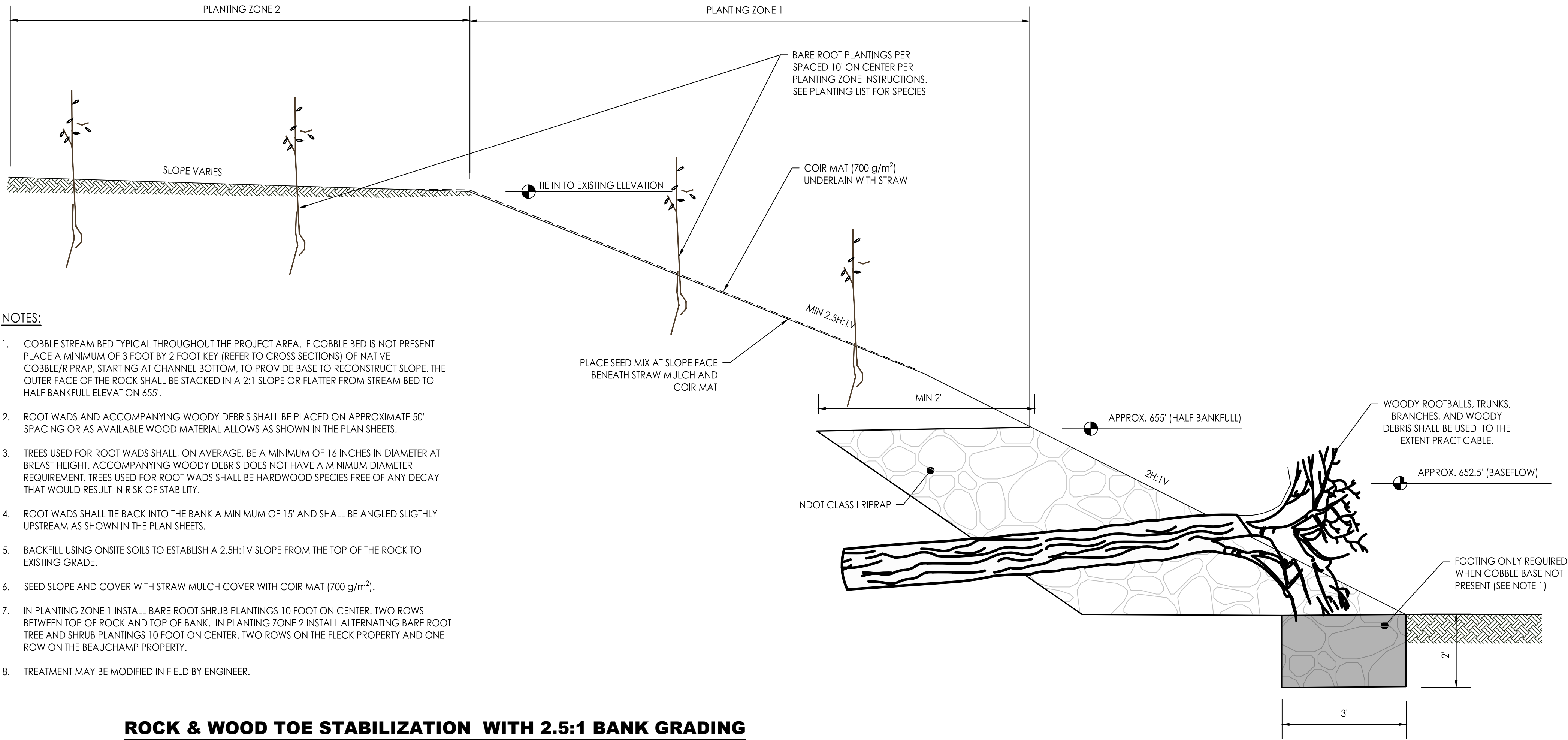
PERMIT PLANS

DATE	1 DECEMBER 2022
DRAWN	1 JLM
DESIGNED	1 RAS
CHECKED	1 XXX
PROJECT #	1.2711003400
SHEET TITLE	CROSS-SECTIONS
SHEET NUMBER	8
LANDUSE #	XXX

#	DATE	DESCRIPTION	BY

CROSS-SECTIONS
WABASH RIVER RESTORATION DESIGN
WABASH RIVER DEFENDERS
WABASH COUNTY, IN





NOTES:

1. COBBLE STREAM BED TYPICAL THROUGHOUT THE PROJECT AREA. IF COBBLE BED IS NOT PRESENT PLACE A MINIMUM OF 3 FOOT BY 2 FOOT KEY (REFER TO CROSS SECTIONS) OF NATIVE COBBLE/RIPRAP, STARTING AT CHANNEL BOTTOM, TO PROVIDE BASE TO RECONSTRUCT SLOPE. THE OUTER FACE OF THE ROCK SHALL BE STACKED IN A 2:1 SLOPE OR FLATTER FROM STREAM BED TO HALF BANKFULL ELEVATION 65%.
2. ROOT WADS AND ACCOMPANYING WOODY DEBRIS SHALL BE PLACED ON APPROXIMATE 50' SPACING OR AS AVAILABLE WOOD MATERIAL ALLOWS AS SHOWN IN THE PLAN SHEETS.
3. TREES USED FOR ROOT WADS SHALL, ON AVERAGE, BE A MINIMUM OF 16 INCHES IN DIAMETER AT BREAMT HEIGHT. ACCOMPANYING WOODY DEBRIS DOES NOT HAVE A MINIMUM DIAMETER REQUIREMENT. TREES USED FOR ROOT WADS SHALL BE HARDWOOD SPECIES FREE OF ANY DECAY THAT WOULD RESULT IN RISK OF STABILITY.
4. ROOT WADS SHALL TIE BACK INTO THE BANK A MINIMUM OF 15' AND SHALL BE ANGLED SLIGHTLY UPSTREAM AS SHOWN IN THE PLAN SHEETS.
5. BACKFILL USING ONSITE SOILS TO ESTABLISH A 2.5H:1V SLOPE FROM THE TOP OF THE ROCK TO EXISTING GRADE.
6. SEED SLOPE AND COVER WITH STRAW MULCH COVER WITH COIR MAT (700 g/m²).
7. IN PLANTING ZONE 1 INSTALL BARE ROOT SHRUB PLANTINGS 10 FOOT ON CENTER, TWO ROWS BETWEEN TOP OF ROCK AND TOP OF BANK. IN PLANTING ZONE 2 INSTALL ALTERNATING BARE ROOT TREE AND SHRUB PLANTINGS 10 FOOT ON CENTER, TWO ROWS ON THE FLECK PROPERTY AND ONE ROW ON THE BEAUCHAMP PROPERTY.
8. TREATMENT MAY BE MODIFIED IN FIELD BY ENGINEER.

ROCK & WOOD TOE STABILIZATION WITH 2.5:1 BANK GRADING
NOT TO SCALE

BARE ROOT PLANTINGS

Scientific Name	Common Name	Quantity
Trees		
Acer saccharinum	Sugar Maple	50
Carya cordiformis	Bitternut hickory	50
Celtis occidentalis	Hackberry	50
Juglans nigra	Black Walnut	50
Platanus occidentalis	Sycamore	50
Shrubs/Understory Trees		
Cercis canadensis	Eastern Redbud	100
Prunus virginiana	Black chokecherry	100
Lindera Thunb.	Spicebush	100
Physocarpus	Ninebark	100
Cornus sericea	Red Twig dogwood	100
Sambucus	Elderberry	100
Viburnum prunifolium	Blackhaw Viburnum	100
Total		950

SLOPE STABILIZATION SEED MIX
PLANTING ZONE 1 AND 2

Slope Stabilization Seed Mix		
Botanical Name	Common Name	PLS Ounces/Acre
Permanent Grasses:		
Andropogon gerardii	Big Bluestem	48
Bouteloua curtipendula	Side-Oats Grama	16
Carex spp.	Prairie Sedge Species	4
Elymus canadensis	Canada Wild Rye	32
Elymus virginicus	Virginia Wild Rye	24
Panicum virgatum	Switch Grass	12
Schizachyrium scoparium	Little Bluestem	32
Sorghastrum nutans	Indian Grass	32
Total		200
Temporary Cover:		
Avena sativa	Common Oat	640
Lolium multiflorum	Annual Rye	120
Total		760

TREE TABLES

TREE ID	DBH (in)	SPECIES	TO BE REMOVED (=X)	TREE ID	DBH (in)	SPECIES	TO BE REMOVED (=X)
1	10	Silver maple		77	24	Silver maple	
2	26	Silver maple		78	30, 20	Silver maple	
3	36	Silver maple		79	18	Elm	
4	26	Silver maple		80	25	Hackberry	
5	10	Box elder		81	8	Walnut	X
6	14	Silver maple		82	8	Elm	X
7	15, 24	Silver maple		83	30	Red oak	X
8	15	Silver maple		84	30, 8	Silver maple	X
9	10	Silver maple		85	20, 10	Silver maple	X
10	20	Silver maple	X	86	24	Sycamore	X
11	20, 18	Sycamore		87	30	Silver maple	X
12	20	Silver maple	X	88	22	Silver maple	X
13	20	Silver maple		89	26	Walnut	
14	14	Silver maple		90	30	Walnut	
15	18	Silver maple		91	15	Cottonwood	
16	26	Sycamore		92	15	Cottonwood	
17	26	Silver maple		93	10	Sycamore	
18	10, 14	Sycamore	X	94	14	Walnut	
19	24	Sycamore	X	95	24	Cottonwood	
20	20	Silver maple		96	16	Elm	
21	15, 20	Silver maple		97	10	Walnut	X
22	15	Sycamore		98	18	Walnut	
23	28	Silver maple		99	16	Walnut	X
24	14	Silver maple		100	14	Walnut	
25	34	Cottonwood		101	11	Walnut	
26	16	Silver maple		102	11	Elm	X
27	12	Silver maple		103	16	Silver maple	X
28	10	Sycamore		104	30, 16	Silver maple	X
29	20	Silver maple	X	105	33	Cottonwood, dead	X
30	26	Sycamore		106	15	Silver maple	
31	20	Sycamore		107	10	Silver maple	X
32	8	Silver maple		108	16	Silver maple	
33	20	Sycamore		109	30	Silver maple	
34	12	Sycamore		110	16	Silver maple	
35	18, 6	Silver maple 10		111	14	Silver maple	
36	10	Box elder		112	18, 18, 18	Silver maple	
37	15, 8	Sycamore		113	10, 10	Silver maple	
38	24	Sycamore			18	Silver maple	
39	16	Silver maple	X			Silver Maple,	
40	18	Box elder		114	12	Dead, Bat Tree	
41	15	Sycamore					
42		Silver maple	X				
43	30, 30	Cottonwood					
44	12, 12	Silver maple					
45	18, 24, 28	Sycamore					
46	28	Sycamore					
47	24	Silver maple	X				
48	18	Silver maple					
49	34	Cottonwood					
50	38, 30	Cottonwood					
51	18, 18	Sycamore					
52	10	Hackberry	X				
53	38	Cottonwood	X				
54	8	Hackberry	X				
55	45	Cottonwood	X				
56	36	Cottonwood					
57	8	Box elder					
58	20	Box elder					
59	15	Box elder	X				
60	15, 18, 10	Silver maple					
61	14	Box elder					
62	10	Box elder					
63	8	Silver maple	X				
64	14	Hackberry	X				
65	30	Hackberry	X				
66	14	Hackberry					
67	15	Hackberry					
68	22	Hackberry					
69	10, 8, 8	Hackberry					
70	14, 10	Basswood					
71	12, 18	Silver maple					
72	28	Sycamore					
73	15, 12	Boxelder					
74	10	Box elder					
75	10	Silver maple					
76	8, 6	Hackberry					

1. TOTAL TREES REMOVED 10" OR GREATER DBH WITHIN FLOODWAY = 28

DETAILS
WABASH RIVER BANK STABILIZATION DESIGN
WABASH RIVER DEFENDERS
WABASH COUNTY, IN

#	DATE	DESCRIPTION

DATE	DECEMBER 2022
DRAWN	JLM
DESIGNED	JAS
CHECKED	XXX
PROJECT #	J211003400

SHEET TITLE
DETAILS

SHEET NUMBER
9

LAND USE # XXX





APPLICATION FOR AUTHORIZATION TO DISCHARGE DREDGED OR FILL MATERIAL TO ISOLATED WETLANDS AND/OR WATERS OF THE STATE

State Form 51821 (R2 / 11-15)

Indiana Department of Environmental Management

- INSTRUCTIONS:** 1. Read the instruction sheet before filling out this form.
2. You must complete all applicable sections of this form

1. Applicant Information		2. Agent Information	
Name of Applicant Wabash River Defenders		Name of Agent Stantec	
Mailing address (Street/ PO Box/ Rural Route, City, State, ZIP Code) 73 W. Canal St. Wabash, IN 46992		Mailing address (Street/ PO Box/ Rural Route, City, State, ZIP Code) 708 Roosevelt Road Walkerton, IN 46574	
Daytime Telephone Number 260-563-6726		Daytime Telephone Number 574-586-3400	
Fax Number		Fax Number 574-586-3446	
E-mail address (optional) steve.johnson@wcunitedfund.org		E-mail address (optional) ross.st.clair@stantec.com	
Contact person (required) Steve Johnson		Contact person Ross St. Clair	
3. Project / Tract Location			
County Wabash		Nearest city or town Wabash	
U.S.G.S. Quadrangle map name (Topographic map) Wabash		Project street address (if applicable) No address, the project is just south and west of 1250 E OLD 24 Wabash, IN 46992	
Quarter SW	Section 6	Township 27N	Range 7E
Type of aquatic resource(s) to be impacted (Attach Worksheet One.) Stream		Project name or title (if applicable) Wabash River Restoration Design	
Other location descriptions or driving directions Latitude: 40.81607 Longitude: -85.7752. Starting at the intersection of US 24 and IN 524 travel southeast for 1.6 miles, turn right to continue on IN-524 traveling south for 0.6 miles, travel southwest on E Durbaugh Rd for 1.9 miles, travel another 1.3 miles northwest on private property through fields to arrive at the LDB project site. RDB project is just to the north, access off Old US 24.			
4. Project Purpose and Description (Use additional sheet(s) if required.)			
Has any construction been started? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Anticipated start date (month, day, year) June 2024	
If yes, how much work is completed? N/A			
Purpose of project and overview of activities The two banks in the project area have experienced significant erosion over recent decades since the final stand of timber was harvested and/or eroded into the river exposing highly erodible soils. The project looks to address 2,400 linear feet (1,400 LF of LDB/US and 1000 LF of RDB/DS) of actively eroding banks typically 10-13 feet in height and 600 LF of inside floodplain grading LDB. A lack of deep-rooted vegetation and high energy flow along the toe of the slope have led to accelerated erosion. Aerials dating back to 1998 indicate that approximately 3.2 acres of land have been lost, which equates to approximately 62,500 tons of sediment from these two banks. The project focuses on river restoration utilizing rock and wood toe stabilization to prevent toe erosion and reestablishing a riparian buffer zone. Floodplain grading will restore an inner berm and flood bench to alleviate outside bank shear stress, support appropriate sediment transport and flood capacity. Wood reincorporated into the toe stabilization will provide habitat diversity, channel roughness to dissipate energy, and a trap for aquatic food sources like small sticks and leaves. The restoration components include rock and wood toe stabilization, bank grading, and native planting. The rock and wood toe stabilization will use 825 CY of rock, 90 CY of wood, and 2625 CY of soil below the OHWM.			

5. Avoidance, Minimization, and Mitigation Information: Applicants must answer all of the following questions
(Use additional sheet(s) if necessary - provide a detailed response to all applicable questions.)

A. For projects with Class II isolated wetlands –

1. Is there a reasonable alternative to the proposed activity?
NA

2. Is the proposed activity reasonably necessary or appropriate?

B. For projects with Class III wetlands, adjacent wetlands, and/or streams, rivers, lakes or other water bodies –

1. Is there a practicable alternative to the proposed activity?
Alternatives include extensive rock placement from toe of slope to top of bank, the installation of stream barbs to redirect the internal flow of the river, or sheet piling to stabilize the bank in place. Though multiple alternatives are viable the selected alternative is the most cost effective alternative that meets the project goals and prioritizes ecological lift. The selected alternative is lower impact and lower risk than the other alternatives.

2. Have practicable and appropriate steps to minimize impacts to water resources been taken?
Yes - Native seed and 950 native bare root shrub and tree plantings will be applied to the bank and top of bank to support vegetation growth, provide a more natural function to the bank, and add habitat value for wildlife. Construction will be completed from the top of the bank to minimize in stream impacts. Additionally the rock and wood used to stabilize the bank has voids that create shelter for aquatic and terrestrial organisms, provides a surface for the establishment of periphyton, the basis of the aquatic food chain, and traps leaf and branch litter providing more habitat for aquatic organisms. Furthermore the rock and wood will provide channel roughness to help dissipate energy.

Describe all compensatory mitigation required for unavoidable impacts.
None

6. Drawing / Plan Requirements (Applicants must provide the following.)

- a. Top/aerial/overhead views of the project site showing existing conditions and proposed construction.
- b. Cross sectional view of areas of fill or alterations to streams and other waters.
- c. North arrow, scale, property boundaries.
- d. Include wetland delineation boundary (if applicable). Label all wetlands (jurisdictional, isolated and exempt) as I-1, I-2, I-3, etc. and the mitigation areas as M-1, M-2, etc.
- e. Location of all surface waters, including wetlands, erosion control measures, existing and proposed structures, fill and excavation locations, disposal area for excavated material, including quantities, and wetland mitigation site (if applicable).
- f. Approximate water depths and bottom configurations (if applicable).

7. Supplemental Application Materials (Applicants must provide the following.)

- a. A wetland delineation of all wetlands on the project site (for projects with wetland impacts).
- b. At least three photographs of the project site. Indicate the photo locations on the project plans.
- c. If isolated wetlands are present, a letter from the Corps of Engineers verifying this statement.
- d. Wetland mitigation plan and monitoring report.
- e. Classification of all isolated wetlands on the tract (if isolated wetlands are present onsite).
- f. Copies of all applicable local permits and/or resolutions pertaining to the project or tract.
- g. Tract history (see instructions).

8. Additional information that MAY be required (IDEM will notify you if needed.)

- a. Erosion control and/or storm water management plans.
- b. Sediment analysis.
- c. Species surveys for fish, mussels, plants and threatened or endangered species.
- d. Stream habitat assessment.
- e. Any other information IDEM deems necessary to review the proposed project.

9. Permitting Requirements

a. Does this project require the issuance of a Department of the Army Section 404 Permit from the US Army Corps of Engineers? Yes No
 If no, you do not need to answer Part b.

b. Have you applied for an Army Corps of Engineers Section 404 permit? Yes No
 If yes, please supply the Corps of Engineers ID Number, the Corps of Engineers District, the project manager, and a copy of any correspondence with the Corps. **If no, contact** the Army Corps of Engineers regarding the possible need for a permit application.
 Concurrent application

c. Have you applied for, received, or been denied a permit from the Department of Natural Resources for this project? Yes No
 Please give the permit name, permit number, and date of application, issuance or denial.
 Concurrent application

d. Have you applied for, received, or been denied any other federal, state, or local permits, variances, licenses, or certifications for this project?
 Yes No
 Please give the permit name, agency from which it was obtained, permit number, and date of issuance or denial.

10. Adjoining Property Owners and Addresses

List the names and addresses of landowners adjacent to the property on which your project is located and the names and addresses of other persons (or entities) potentially affected by your project. Use additional sheet(s) if required.

Name See Attached List Address (number and street) City State ZIP Code	Name Address (number and street) City State ZIP Code
Name Address (number and street) City State ZIP Code	Name Address (number and street) City State ZIP Code
Name Address (number and street) City State ZIP Code	Name Address (number and street) City State ZIP Code
Name Address (number and street) City State ZIP Code	Name Address (number and street) City State ZIP Code
Name Address (number and street) City State ZIP Code	Name Address (number and street) City State ZIP Code
Name Address (number and street) City State ZIP Code	Name Address (number and street) City State ZIP Code

11. Signature - Statement of Affirmation

I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true and accurate. I certify that I have the authority to undertake and will undertake the activities as described in this application. I am aware that there are penalties for submitting false information. I understand that any changes in project design subsequent to IDEM's granting of authorization to discharge to a water of the state are not authorized and I may be subject to civil and criminal penalties for proceeding without proper authorization. I agree to allow representatives of the IDEM to enter and inspect the project site. I understand that the granting of other permits by local, state, or federal agencies does not release me from the requirement of obtaining the authorization requested herein before commencing the project.

Applicant's Signature: Steve Johnson

Date: 12/6/22
(mm/dd/yyyy)

Print Name: Steve Johnson

Title: Treasurer

Worksheet – Summary of Onsite Water Resources and Project Impacts

A. Jurisdictional Wetlands (Existing Conditions)			Jurisdictional Wetlands (Proposed Impacts)		
Wetland Type	Size of wetland (acreage)	To be Impacted?	Acreage	Fill quantity (cys)	ATF
<input checked="" type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO	0.11	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0	0	
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			

Describe the type and composition of fill material to be placed in wetlands on the project site:

Describe the type and composition and quantity (*cubic yards*) of material proposed to be dredged or excavated from wetlands on the project site:

B. Isolated Wetlands (Existing Conditions)			Isolated Wetlands (Proposed Impacts)			
Wetland Class	Type	Size of wetland (acreage)	To be Impacted?	Acreage	Fill quantity (cys)	ATF
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			

Describe the type and composition of fill material to be placed in isolated wetlands on the project site:

Describe the type and composition and quantity (*cubic yards*) of material proposed to be dredged or excavated from isolated wetlands on the project site:

C. Bridges and Stream Crossings - provide the following information for EACH structure (Use additional sheet(s) if required.)

Stream name _____

Description of impacts _____

Length of upstream bank impacts: Left side: _____ Right side: _____

Length of downstream bank impacts: Left side: _____ Right side: _____

Bank protection fill placed below the Ordinary High Water Mark: Volume per running foot: _____

Bank protection fill placed below the Ordinary High Water Mark: Area of coverage: _____

D. Bank Stabilization – provide the following information for EACH segment (Use additional sheet(s) if required.)

Water body name Wabash River
Description of impacts Soil, wood, and rock fill will be used to install the rock and wood toe stabilization treatment. This treatment will stabilize the toe of the slope and restore a consistent toe of slope.
Length of shoreline or bank protection 3,000 LF
Volume (<i>cubic yards</i>) of bank protection fill placed below the Ordinary High Water Mark per running foot 1.18 CY/LF
Area (<i>square feet</i>) of bank protection fill placed below the Ordinary High Water Mark 32,000

E. Stream Relocation

Water body name	
Description of impacts	
Length of existing channel to be relocated (<i>linear feet</i>)	
Length of new channel to be constructed (<i>linear feet</i>)	
Existing channel to be backfilled? <input type="checkbox"/> Yes <input type="checkbox"/> No	Type of relocation <input type="checkbox"/> Piping <input type="checkbox"/> Open <input type="checkbox"/> Channel <input type="checkbox"/> Other: _____
Type of fill and volume (<i>cubic yards</i>)	

F. Open Water Fill

Water body name
Description of impacts
Area of water body to be filled (<i>acres</i>)
Type of fill and volume (<i>cubic yards</i>)

Notes and Instructions for Authorization to Discharge Dredged or Fill Material to a State Regulated Wetland and/or Waters of the State Permit Application Form and Worksheet

Note to applicants:

This form is to be used by all persons who intend to discharge dredged or fill materials into wetlands, isolated wetlands, or any other water body regulated under state and federal law. Specifically, this form is to be used for the following:

1. Application for Section 401 Water Quality Certification for any project not covered by the Indiana Regional General Permit
2. Application for a State Regulated Wetland Permit authorized under HEA 1798 and HEA 1277, excluding any activities authorized under any of the State Regulated Wetland General Permits

Consult the Office of Water Quality Web site for information on the types of authorizations and requirements for projects regulated under these laws.

<http://www.in.gov/ideM/wetlands/index.htm>

Do not submit this form until you are familiar with the various authorizations and proper forms for obtaining these authorizations. An application submitted on the incorrect form may result in delays in processing.

Applicants should also contact the Indiana Department of Natural Resources (DNR) regarding potential permit requirements associated with construction in a floodway or a public freshwater lake. You can reach the DNR Division of Water at (317) 232-4160 or toll free at (877) WATER-55.

Instructions for Completing the Application and Worksheet

Address all applications or questions to:

Indiana Department of Environmental Management
Office of Water Quality
Section 401 Water Quality Certification/State Isolated Wetlands Program
100 North Senate Ave.
Indianapolis, Indiana 46204

Telephone: (800) 451-6027 or (317) 233-8488

Print clearly or type.

Attach additional 8.5" x 11" sheets as necessary.

APPLICATION

Note: Some wetland activities may impact both U.S. navigable waters and state regulated isolated wetlands. In those situations, the project will require a Section 401 Water Quality Certification and Section 404 U.S. Corps of Engineers permit AND approval under the new State Isolated Wetland Regulatory Program. When IDEM receives an application that involves an activity that may impact both intrastate navigable waters and a state regulated wetland, current state law requires that we evaluate each activity using different authorities. IDEM will, at the request of an applicant, evaluate a project with multi-jurisdictional wetlands under the Section 401 certification framework and will provide one authorization for the project, applying the state regulated isolated wetlands law and federal Clean Water Act Section 401 authorities. If an applicant prefers that all IDEM approvals occur within one streamlined review process, a separate letter specifically requesting a combined review of the entire project should be submitted concurrently with the application.

Block 1 - Applicant Information

Provide your name, address, and telephone number. You MUST provide a contact name. For complex projects or projects with multiple contractors and responsible parties, designation of a single point of contact will speed up the review process and enable more timely responses to requests for information.

Block 2 - Agent Information

If you choose to be represented by an agent, provide the agent's address and telephone information. You are not required to have an agent.

Block 3 - Project Location

Provide specific information relating to the location of your proposed project. Provide accurate maps depicting the project location. Try to keep detail on maps to a minimum, focusing instead on the location of structures and associated water bodies. Consult the USGS Quadrangle maps for information on the quarter, section, township and range of the project. IDEM may require that you submit full size plans to supplement the 8 1/2" by 11" map sheets if the project is large or complex.

Block 4 - Project Purpose and Description

Provide the proposed or actual start date and the anticipated completion date. If you have started your project before obtaining authorization, you may be in violation of federal and/or state law. Give a narrative description of the proposed project. You should include any supplemental environmental reports, assessments, or other documents that explain or justify the proposed configuration of the project. Describe the purpose of the project (that is, what goal outcome will be met by the construction of the project).

Block 5 - Avoidance, Minimization, and Mitigation Information

You must describe possible alternatives to the proposed project that would avoid impacts to the aquatic resource that were considered during the project planning process. You must also describe ways to minimize impacts considered during the project planning process, including a description of how you plan to contain any dredged/excavated material to prevent re-entry into waterways or wetlands. Examples of alternatives include construction on the upland portions of the property; rerouting a roadway to avoid a wetland; or alternate design plans. Minimization of the impacts may decrease any mitigation requirements that might otherwise apply. Minimization may include reduction of the amount of dredging, filling, or vegetative clearing. For isolated wetlands only, enclosure of a copy of (1) a resolution of the executive of the county or municipality in which the wetland is located or (2) a permit or other approval from a local government entity having authority over the proposed use of the property on which the wetland is located; that includes a specific finding that the wetland activity is part of a legitimate use proposed by the applicant on the property, substitutes for the information required on avoidance and minimization.

Answer all the questions in detail, providing example, drawings, or other supporting information to illustrate the steps taken to consider alternatives. Provide reasons why various alternatives were or were not considered.

In general, all impacts to wetlands or other waters that require the use of this form will require some form of compensatory mitigation. A detailed description of the mitigation plan must be provided, including: the location of the mitigation site, the size and type of mitigation to be performed, the construction sequence, timing of the mitigation, information on post construction monitoring, mitigation techniques, and success criteria of the mitigation site. A mitigation plan, with overview drawings, planting lists, cross sectional views, and other relevant information is recommended as a supplement to answer this question.

Block 6 - Drawing/Plan Requirements

You must submit drawings/plans that are on 8 1/2 by 11 inch sheets. Your project will be delayed if these materials are not submitted in the formats specified in the application.

Block 7 - Supplemental Application Materials

All projects involving impacts to wetlands must be accompanied by a wetland delineation using the procedures established in the U.S. Army Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1 (January 1987). This delineation must be approved or reviewed by the Corps of Engineers in order for IDEM to determine the impacts to water bodies associated with the project. DO NOT submit an application involving impacts to wetlands without a wetland delineation. For projects that involve impacts to isolated wetlands, a letter from the Corps of Engineers that specifically makes this determination must be provided or the application will not be processed. Submittal of photographs depicting the project site is highly encouraged. Photos must be clearly labeled with the direction of the shot, the area depicted, and notes on relevant features. A map depicting the location of photos on the project site is also useful and should be included whenever photos are submitted.

For project sites with isolated wetlands, a tract history is also required. This history provides information on all the wetlands on the site prior to January 1, 2004, and describes any and all activities within these wetlands, including impacts allowed to wetlands exempt from regulation under the various provisions of federal and state law. Direct questions regarding this requirement to IDEM staff for clarification.

Block 8 - Additional Information That May Be Required

You are not required to submit the information specified in this section unless directed to do so by IDEM. However, you may submit the information if you anticipate that such information will be required. For example, if you are aware of issues on the proposed project site which may impact water resources, such as the presence of contaminated soils or sediments, endangered species, well field protection areas, or previously permitted activities on the project site, information regarding these points must be submitted with the certification application.

Block 9 - Permitting Requirements

Provide information regarding your application to the Corps of Engineers. If you have not yet contacted the Corps of Engineers, you must do so as soon as possible (SEE BLOCK 7). Provide information regarding any other federal, state, or local permits, variances, licenses, or certifications required for your project. Please indicate whether they were approved, denied, or are pending.

Block 10 - Adjoining Property Owners and Addresses

List the names and addresses of landowners adjacent to the property on which your project is located. Adjacent property owners are persons who share property lines with your property. Inclusion of names and addresses of other persons (or entities) potentially affected by your project must include persons within your neighborhood, lake association, or in the general vicinity that may have an interest in your project. Consult with IDEM for further clarification.

Block 11 - Signature - Statement of Affirmation

You must sign and date the application. If the applicant is a corporation, a responsible person from that corporation must sign. No other signatures will be accepted. The application will not be processed without the appropriate signature.

WORKSHEET

Note: When calculating any type of impact, all areas that are affected by placement of fill, bank armoring, culverting, excavation, or any other activity must be counted. When calculating open water impact, all areas within lakes, rivers, streams and the like must be counted. This includes areas under new bridge piers, beaches, and boat ramps, as examples. The Ordinary High Water Mark means that line on the shore of a water body established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, natural destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

- Fill out only the sections of this worksheet that apply to your project. -

Section A - Wetlands

This section is for wetlands determined to be under the jurisdiction of the U.S. Army Corps of Engineers (Corps) and that require a Section 404 permit as well as a Section 401 Water Quality Certification from IDEM. List the type of wetland as Emergent (EM), Scrub shrub (SS), or Forested (FO). "Emergent wetland" means a wetland characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. "Scrub shrub wetland" means a wetland dominated by woody vegetation having a height greater than three and two-tenths (3.2) feet, and a stem diameter less than three (3) inches. This includes true shrubs, young trees, and trees and shrubs stunted by environmental conditions. "Forested wetland" means a wetland dominated by woody vegetation that has a diameter, at breast height, greater than three (3) inches, regardless of total height. The size of the wetland must be determined by conducting a wetland delineation consistent with the protocols established in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual. The applicant must list whether or not the wetland will be impacted, the acreage of the impact, and the quantity of fill to be discharged into the wetland. The applicant must identify whether or not this is an after-the-fact (ATF) permit. An ATF permit is for impacts to wetlands or other water bodies under the jurisdiction of IDEM that did not receive authorization before the impacts occurred. Additionally, the applicant must describe the type and composition of material proposed to be discharged or removed from the wetland.

Section B - Isolated Wetlands

This section is for wetlands the Corps has determined to be isolated and no longer under their jurisdiction. The Corps jurisdictional determination letter must be included with the application. Isolated wetlands are considered State Regulated Wetlands and proposed impacts to these wetlands will be reviewed pursuant to IC 13-18-22. The class of wetland must be determined by the definitions outlined in IC-13-11-2-25.8. This is determined by assessing the vegetation type,

hydrologic function, habitat functions, values of the wetland, and disturbances to the wetland. The applicant must determine the type of wetland by designating the wetland as either Non-Forested (NF) or Forested (F). The size of the wetland must be determined by conducting a wetland delineation consistent with the protocols established in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual. The applicant must list whether or not the wetland will be impacted, the acreage of the impact, and the quantity of fill to be discharged into the wetland. The applicant must identify whether or not this is an after-the- fact (ATF) permit. An ATF permit is for impacts to wetlands or other water bodies under the jurisdiction of IDEM that did not receive authorization before the impacts occurred. Additionally, the applicant must describe the type and composition of material proposed to be discharged or removed from the wetland.

Section C - Bridges and Stream Crossings

This section is for projects that impact streams in order to construct, maintain, or protect structures used to cross the stream. The applicant must list the name of the stream to be impacted by the proposed project. The stream name can be found on the USGS Topographic map. If the stream does not have a name, identify it as a tributary to the next stream or water body with a name. Describe the proposed impacts in detail. Include the lengths of bank impacts to both banks upstream and downstream. Determination of left and right banks is made in the following manner- at the point furthest upstream on the project site, face downstream - the left bank is on your left and the right bank is on your right. Identify the volume per running foot of material to be discharged below the Ordinary High Water Mark (OHWM). Identify the total area below the OHWM to receive a discharge of fill material.

Section D - Bank Stabilization

This section is for projects that discharge fill material in order to stabilize eroding land along streams, lakes, or other water bodies. The applicant must list the name of the water body to be impacted by the proposed project. The name of the water body can be found on the USGS Topographic map. If the water body does not have a name, identify it as a tributary to the next stream or water body with a name. Provide the length of shoreline or bank impact. Identify the volume per running foot of material to be discharged below the Ordinary High Water Mark (OHWM). Identify the total area below the OHWM to receive a discharge of fill material.

Section E - Stream Relocation

This section is for projects that propose to relocate a stream from its existing banks either by open channel construction or by stream piping. The applicant must list the name of the stream to be impacted by the proposed project. The stream name can be found on the USGS Topographic map. If the stream does not have a name, identify it as a tributary to the next stream or water body with a name. Describe the impacts to the stream. Provide the linear feet of existing channel to be relocated and the length of new channel to be constructed. The applicant must state whether the old channel is proposed to be filled and describe the type and quantity of fill to be used to fill the old channel. The applicant must also provide the type of relocation, new channel or piping.

Section F - Open Water Fill

This is for projects where the fill material extends beyond the edge of the shoreline into open water. Some examples include the filling of pit mines, borrow pits, and other land reclamation projects. Provide the name of the water body to be impacted. If the water body does not have a name, identify it as unnamed open water body. Describe the impacts to the water body including the area to be filled and the type and quantity of fill material to be discharged.

WABASH RIVER BANK STABILIZATION



Project Location and Site Map

PROJECT STATISTICS:

Site Information: Location: Wabash River, 2.75 miles NE of Wabash, IN, Wabash County
Project Length: 2,390 ft total (1,470 ft Bank 1, 970 ft Bank 2)
Drainage Area: 1,720 mi²
Bank Erosion in Last 25 years: ~3.2 acres, ~63,000 CY total

Project Information: Project Sponsor: Wabash River Defenders
Engineering Design: Cardno now Stantec
Construction Timeframe: TBD but dependent on funding
Estimated Cost: ~\$450,000-700,000



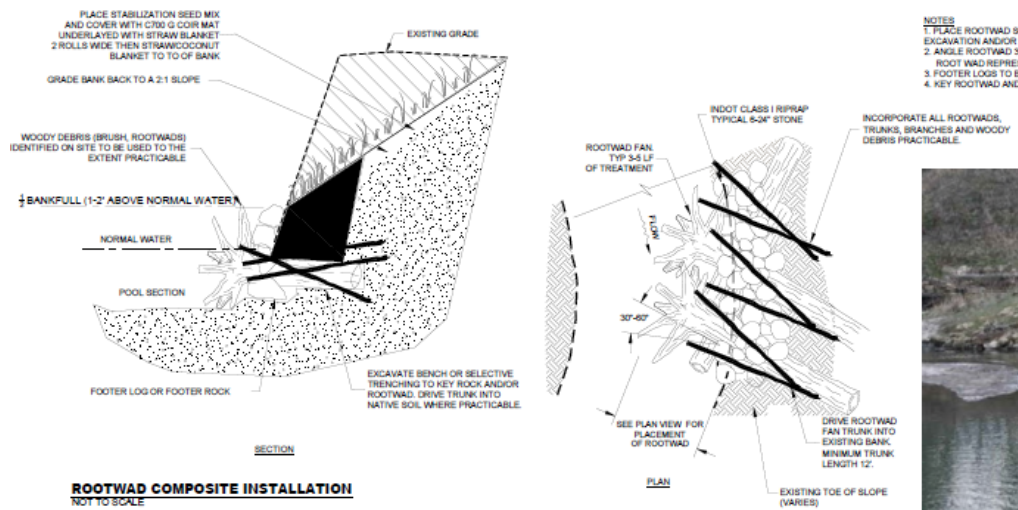
Wabash River, IN: Existing Bank Conditions

PROJECT OVERVIEW:

The two banks in the project area have experienced significant erosion over the last 20-30 years since the final stand of timber eroded into the river. The project looks to address 2,390 linear feet of actively eroding banks typically 10-13 feet in height. A lack of deep-rooted vegetation and high energy flow along the toe of the slope have led to accelerated erosion. Aerials dating back to 1998 indicate that approximately 3.2 acres of bank have been lost, which equates to approximately 62,500 tons of sediment from these two banks (2.2 acres/43,000 cubic yards from Bank 1 and 1 acre/19,500 cubic yards from Bank 2). It should be noted that while the outside of these meander bends have seen excessive erosion, the inside of the meander bends have been aggrading as sand bars form from deposited material. The average lateral erosion rate is 4-6 feet per year for Bank 1, and 2-4 feet per year for Bank 2 dating back a minimum of 20 years in which aerial imagery was reviewed. Lost ground is largely agricultural at Bank 1 and continues to down remaining tree buffer for Bank 2 which parallels a local asphalt biking trail.

PROJECT GOALS:

The project focuses on stabilization of approximately 2,400 of stream on the Wabash River between Lagro and Wabash with the overall goals of stopping excessive streambank erosion, reducing sediment supply downstream, and improving aquatic and riparian habitat.



Wood and Rock Composite Toe

DESIGN & TECHNIQUE:

Cardno-now Stantec is a professional stream restoration and engineering firm and are currently designing a long-term bank stabilization treatment to address the erosion concerns along these two banks. The proposed treatment includes bank grading and a wood and rock composite toe. We would utilize all of the tree rootballs, trunks and woody debris as the base of the toe stabilization and utilize Class I riprap as ballast and additional toe support up to the ½ bankfull elevation. Above this wood and rock composite toe we would seed, coir mat, and plant the bank for long term stability. A shrub and tree planted buffer is proposed along the bank and beyond the top of bank. We look to address the immediate toe failure, provide long term deep rooted vegetation, and also enhance aquatic and riparian conditions along the entire project reach.



United States Department of the Interior Fish and Wildlife Service



Indiana Field Office (ES)
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

February 21, 2023

Mr. David Carr
U.S. Army Corps of Engineers
Louisville District, Indianapolis Regulatory Office
8902 Otis Avenue, Suite S106B
Indianapolis, Indiana 46216

Dear Mr. Carr:

This responds to your email of February 9, 2023, requesting our comments on a proposed bank stabilization project along both banks of the Wabash River in Wabash County, Indiana (File No. LRL-2022-00975-DDC).

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

The Wabash River Defenders are proposing to install bank protection measures consisting of logs and riprap along 2,400 linear feet of actively eroding riverbanks at a hairpin turn about mid-way between Lagro and Wabash. The banks would be graded as necessary and select trees would be removed prior to the installation of the logs and riprap. A sand and gravel point along the left descending bank would be graded on the inside of a 90-degree bend in order to lessen erosive impacts against the right bank; the left bank upstream of the point will receive protection, as will the right bank opposite the point.

We are concerned that the tie-back riprap at the upstream ends of each protective measure may move the erosion upstream, thus undermining those locations. We suggest that logs angled downstream be secured in the river at those two sites in order to provide more protection and divert the current away from the bank.

ENDANGERED SPECIES

The proposed project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*); the candidate Monarch butterfly

(Danaus plexippus) may also to be present. As a candidate species, the Monarch butterfly is not afforded legal protection under the authorities of the Endangered Species Act, and we have no specific comments/recommendations concerning this species at this time.

The FWS has no records of either Indiana bats or northern long-eared bats at or near the project site. Therefore, the FWS believes that neither Indiana bats nor northern long-eared bats are likely to be present within the current project area. No tree cutting time restrictions are necessary; the project may proceed at any time. We concur with your determination that the proposed project is not likely to adversely affect these endangered bat species.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. However, should new information arise pertaining to project plans or a revised species list be published, please contact us for further consultation.

We appreciate the opportunity to comment on this proposed project. If project plans change, please re-coordinate with our office as soon as possible. For further discussion, please contact Elizabeth McCloskey at elizabeth_mccloskey@fws.gov.

Sincerely yours,

/s/ *Elizabeth S. McCloskey*

for Patrice Ashfield
Acting Supervisor

Sent via email February 21, 2023; no hard copy to follow.



Division of Nature Preserves
402 W. Washington St., Rm W267
Indianapolis, IN 46204-2739

October 3, 2022

Jenna Meert
Cardno now Stantec
708 Roosevelt Road
Walkerton, IN 46574

Dear Jenna Meert:

I am responding to your request for information on the threatened or endangered (T&E) species, high quality natural communities, and natural areas for the Wabash River Bank Stabilization Project located within Wabash County, Indiana. The Indiana Natural Heritage Data Center has been checked and included you will find a datasheet with information on the T&E species and significant area documented within 0.5 mile of the project area.

Within the 0.5 mile search radius of the project site is the State dedicated Hathaway Preserve at Ross Run Nature Preserve which is a property that is owned and managed by ACRES Land Trust. Due to the proximity of the project site to the protected natural area, it is expected that all precautions are taken to not impact the systems and features protected therein. For more information concerning this property and any further coordination, contact ACRES Land Trust (260)637-2273.

Within the 0.5 mile search radius of the project area there is an occurrence of a remnant forest community that is of high natural quality. It appears that if project activities and all project impacts are limited to only within the proposed project area, no impacts are expected on this habitat occurrence.

The T&E vascular plant occurrence is historical and does not occur precisely at the project site. Therefore, if project activities are limited to only within the proposed project area and no additional individuals are observed in appropriate habitat within the project area, no impacts are expected on this occurrence.

If you need a review of the impacts to the animal species mentioned or a general environmental review, you can submit the project information to Christie Stanifer, DNR Environmental Coordinator, at environmentalreview@dnr.in.gov (preferred), or send to the street address below. For more help or guidance contact Christie Stanifer at cstanifer@dnr.in.gov.

Department of Natural Resources
Environmental Review
Division of Fish and Wildlife
402 W. Washington Street, Room W273
Indianapolis, IN 46204

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. If you have concerns about potential Endangered Species Act issues you should contact the Service at their Bloomington, Indiana office.

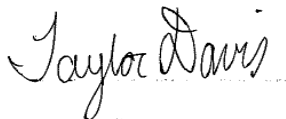
U.S. Fish and Wildlife Service
620 South Walker St.
Bloomington, Indiana 47403-2121
(812)334-4261

Please note that the Indiana Natural Heritage Data Center relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was originally intended. It may be necessary for you to request updated material from us in order to base your planning decisions on the most current information.

Thank you for contacting the Indiana Natural Heritage Data Center. You may reach me at (317)233-2558 if you have any questions or need additional information.

Sincerely,

A handwritten signature in cursive script that reads "Taylor Davis". The signature is written in black ink on a white background.

Taylor Davis
Indiana Natural Heritage Data Center

Enclosure: datasheet