

**CONSERVATION PLAN
FOR INCIDENTAL TAKING OF
ILLINOIS-ENDANGERED
KENTUCKY CRAYFISH (*Orconectes kentuckiensis*)**

**Bassett School Road (TR 101C)
over Hosick Creek in Hardin County, Illinois
Section 12-01162-00-BR
Structure 035-3057
Job # C-99-507-17**

**Prepared by:
Brown & Roberts, Inc
1 Westridge Road
Harrisburg, IL 62946
February 13, 2018**

**Conservation Plan for the Illinois-endangered Kentucky crayfish
(*Orconectes kentuckiensis*) at Bassett School Road (TR 101C) over Hosick
Creek in Hardin County, Illinois**

1. Description of the impact likely to result from the proposed taking

A. Legal Description of the project area

Located in the Rosiclare, Quadrangle, Township 12 South, Range 8 East, Section 14, 3rd Principal Meridian approximately one mile northeast of Elizabethtown; Latitude 37.46701° North, Longitude 88.29514° West. The project is located within the existing Hardin County right-of-way of TR 101C in Hardin County. See Attachment 1, Location Map.

B. Biological Data on the Affected Species

The Kentucky crayfish (*Orconectes kentuckiensis*) has a limited range in the lower Ohio River Valley, where it occurs in southeastern Illinois and western Kentucky. It is found in shallow regions with gravel or cobble substrates in small to large creeks and small rivers.

Threats to the species' continued existence include habitat alterations such as gravel/cobble removal and the damming of flowing waters, and the introduction of non-native crayfish species.

The Illinois Natural History Survey (INHS) found this species during an on-site survey May 17, 2017. Seventeen individuals were collected from 5 yards upstream to 25 yards downstream of the existing bridge. Two additional crayfish species were collected. One Paintedhand Mudbug (*Cambarus polycromatus*) and nine Cavespring Crayfish (*cambarus tenebrosus*). Given the presence of Kentucky Crayfish and suitable habitat for species in Hosick Creek in the vicinity of Bassett School Road (TR 101C) bridge, and at history of collection of the Kentucky Crayfish in Hosick Creek, it is believed that a sustainable reproducing population occurs at this project site. As such, all efforts to reduce the input of siltation should be implemented. (See Attachment 2.)

C. Description of Incidental Taking

The proposed improvement will consist of bridge removal and reconstruction. Proposed work within the channel includes removal of existing structure, driving or setting piles for new abutments, placement

of riprap for scour protection, and incidental grading along the stream banks within the existing Hardin County right-of-way – see Attachment 3. All in-stream work will be done from the adjacent banks with excavators. Since the replacement structure will be a single span bridge with spillthrough abutments no cofferdams or causeways will be necessary.

D. Anticipated Adverse Effects on the Listed Species

Primary threats to the Kentucky Crayfish fall into two categories: habitat alteration and introduction of non-native species. Habitat alteration can consist of siltation, stream channelization, debris, debris removal or substrate removal.

For the purposes of this project, potential adverse effects consist mainly of excavation and placing of riprap around the bridge piers. Excavation could create minor, short term siltation in the area immediately downstream of the structure, while some crayfish could be covered or crushed during the excavation and placement of the riprap.

2. Measures to Minimize and Mitigate Impacts

A. Plans to minimize the affected area, the amount of individuals of the endangered species that will be taken and the habitat affected

The area of the work zone has been limited to the existing right-of-way. Total impacted area within the stream is 31' wide X 88' long or approximately 2728 square feet. The existing right-of-way line is 40' each way from roadway centerline. Riprap will be placed in the area of disturbed habitat and around the bridge abutments for erosion and scour prevention. The rock used for riprap will be RR4 without bedding stone or fabric. Ditch checks will be placed in roadside ditches to reduce potential siltation. The INHS found 17 individuals during their survey. This potentially could be a number of individuals taken.

B. Plans for management of the area affected by the proposed action that will allow continued use of the area by the species.

Similar habitat is located both upstream and downstream of the structure site. The streambed and habitats will be controlled by natural processes after construction activities are completed. Crayfish should move back into the area immediately adjacent to the bridge over time. Introduction of riprap within the channel and streambed at the bridge site may actually enhance the habitat characteristics within the immediate vicinity

of the structure, and the scour prevention afforded by the new bridge will protect habitat downstream of the site.

C. Description of measures to be implemented to minimize or mitigate the effects of the proposed action to the endangered species.

A Storm Water Pollution Prevention Plan (SWPPP) will be devised and implemented for the site. The SWPPP shall be coordinated with the Bureau of Design and Environment. The resident engineer will monitor the activities of the contractor for compliance with special provisions regarding mitigation and the use of best management practices (BMP's) to minimize erosion and siltation. Regular inspections will be made to ensure proper repair and maintenance of BMP's by the resident engineer, including weekly and immediately following significant rainfall events.

In order to minimize impacts to the Kentucky Crayfish, in stream work shall be prohibited from March 1 through May 15.

Instream rock will be removed immediately prior to construction in the immediate vicinity of where instream construction activities will take place. The of moving the rocks is to take away the cover or habitat used by the crayfish. This measure will reduce the number of crayfish entering or occupying that part of the stream channel within the construction limits.

Four weeks prior to the start of instream work, the Hardin County Engineer will notify the Bureau of Design and Environment (BDE) of the date that instream work will begin. Within one week of receipt of notification, the BDE will task the Illinois Natural History Survey (INHS) to move by hand rocks up to 25 pounds within the stream to a location just outside and upstream of the limits of construction. The moving of the rocks will be completed before the start of construction which is anticipated to be May 16, 2018. The construction is estimated to take 35 working days and should be completed mid-August, 2018.

Proposed mitigation includes funding for the monitoring activities provided through the Intergovernmental Agreement for the Illinois Transportation Biological Survey Program between IDOT and the University of Illinois. This program is administered by the Bureau of Design and Environment in cooperation with the Illinois Natural History Survey at the University of Illinois.

Hardin County will pay \$5032 to the Illinois Wildlife Preservation Fund for compensatory mitigation of the approximate 2728 Sq Ft of instream impact.

D. Plans for monitoring the effects of the measures implemented.

The Hardin County Engineer will notify the BDE when the project reaches 100% completion. BDE will then task the INHS to perform monitoring surveys.

Post construction monitoring will be performed by INHS in years 2 and 4 following completion of the project.

E. Adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of the measures instituted.

The project sponsor will implement the Stormwater Pollution Prevention Plan. The IDOT will monitor the construction site for proper placement and function of the selected best management practices.

Despite the best intentions, there may be practices that are specified in the SWPPP that prove to be ineffective at controlling soil erosion and sedimentation. If this is the case, the IDOT Resident Engineer shall consult the IDOT Erosion and Sediment Control Field Guide for Construction Inspection 2010 or the Illinois Urban Manual for practices that might be more effective or better suited to the site environment than the specified ones. The IDOT district Landscape Architect may be of assistance to the Resident Engineer on matters concerning corrective measures for erosion and sediment control.

F. Verification that funding to support mitigation activities will be available for the life of the conservation plan.

The project estimated budget will include line items for implementation of BMP's included in the SWPPP, including seeding of all disturbed areas draining to the stream. Maintenance and repair of SWPPP items, and additional measures implemented during construction will be paid for by change order or force account. By law, the erosion and sediment control measures will remain in place for the life of the project.

Funding for the monitoring activities will be provided through the Intergovernmental Agreement for the Illinois Transportation Biological Survey Program between IDOT and the University of Illinois. This program is administered by the Bureau of Design and Environment in

cooperation with the Illinois Natural History Survey at the University of Illinois.

3. Analysis of Project Alternatives

There are four alternatives for this project and the reasoning why these alternatives are not being considered as a viable option.

A. No build

Currently, Bassett School Road is a bus route linking the northwest area of Hardin County to the Hardin County School facilities. The only alternative that does not result in a taking of the listed species is leaving the bridge as is. This would result in a structurally deficient bridge being left in place. Normal maintenance measures cannot correct the deficiencies, and the structure will continue to deteriorate. This alternative is neither prudent nor feasible, due to the unacceptable safety hazard it poses and the restrictions an eventual closure would place on local traffic.

B. Leave existing bridge in place and construct a new structure on an offset alignment.

This alternative is not considered feasible. It would eliminate taking of the species at the current bridge site, but would necessitate taking of the species at a location either immediately upstream or downstream of the structure at the site of new construction. This option would require the acquisition of additional right-of-way, and the disturbance of additional areas adjacent to the existing right-of-way.

C. Rehabilitate the existing structure.

Rehabilitation of the existing structure was considered previously and was determined not to be a viable alternative due to extremely high cost and constructability. Therefore this alternative is not considered feasible.

D. Construct a new structure on existing alignment.

This is the preferred alternative. Complete removal and replacement of the bridge will provide the maximum benefit to area residents. No additional right-of-way will be required to construct the new structure on the present alignment. Roadway approach, excavation and embankment work will be minimized. Work within the channel will also be minimized. This is the most practical and cost effective option for this project.

4. Data and information regarding survival of the species after the proposed take is complete.

The Kentucky crayfish occurs in shallow regions with large rock/cobble substrates in small to large streams. Given the collection of the species, the abundant presence of suitable habitat both up and downstream of the bridge, and the history of collection of the Kentucky crayfish in Hosick Creek, it is believed that a reproducing population in the immediate vicinity of the Bassett School Road bridge. Due to the small area affected by construction of the new bridge, it is expected that the species will continue to exist in this reach of Hosick Creek and the State of Illinois.

5. An implementing agreement, which shall include, but not be limited to:

A. Names of all participants in the execution of the conservation plan, including public bodies, corporations, organizations, and private individuals.

Justin Hastie
Hardin County Engineer



Keith Roberts
Acting Local Roads & Streets Engineer
Illinois Department of Transportation, District 9



B. The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities in the conservation plan and a schedule for preparation of progress report to be provided to the Department.

The Illinois Department of Natural Resources is responsible for the review of this conservation plan and for the subsequent issuance of the Incidental Take Authorization.

The Illinois Department of Transportation is responsible for all biological clearance coordination and recommendations related to the project. IDOT is also responsible for securing authorization for the incidental take; securing all permits, Section 404 and Office of Water Resources; inspection of the work and contractor compliance with the contract documents.

The activities in the conservation plan will be implemented concurrently with the contract for the highway work.

Post construction monitoring will be performed by INHS in years 2 and 4 following completion of the project. Monitoring reports will be prepared by the INHS and submitted to the BDE for review. Monitoring reports will be coordinated with the IDNR Division of Ecosystems and Environment, Transportation Review Program.

C. Assurances that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and responsibilities under the conservation plan.

IDOT is authorized by the Illinois Highway Code to carry out its duties of providing safe and efficient highways for Illinois citizens.

The Illinois Natural History Survey (INHS) has the E&T permits to perform this work.

D. Assurances of compliance with all other federal, state, and local regulations pertinent to the proposed action and to execution of the conservation plan.

The Illinois Department of Transportation exclusively abides by the National Environment Policy Act and all associated federal and state environmental laws in carrying out their mission of performing the most environmentally sensitive methods of transportation planning and engineering. The Kentucky crayfish is listed as endangered in Illinois and is covered by the Illinois Endangered Species Act of 1971 only. Therefore, compliance under the federal Endangered Species Act of 1973 is not required. No known local regulations are pertinent to this conservation plan.

E. Copies of any federal authorizations for taking already issued to the applicant.

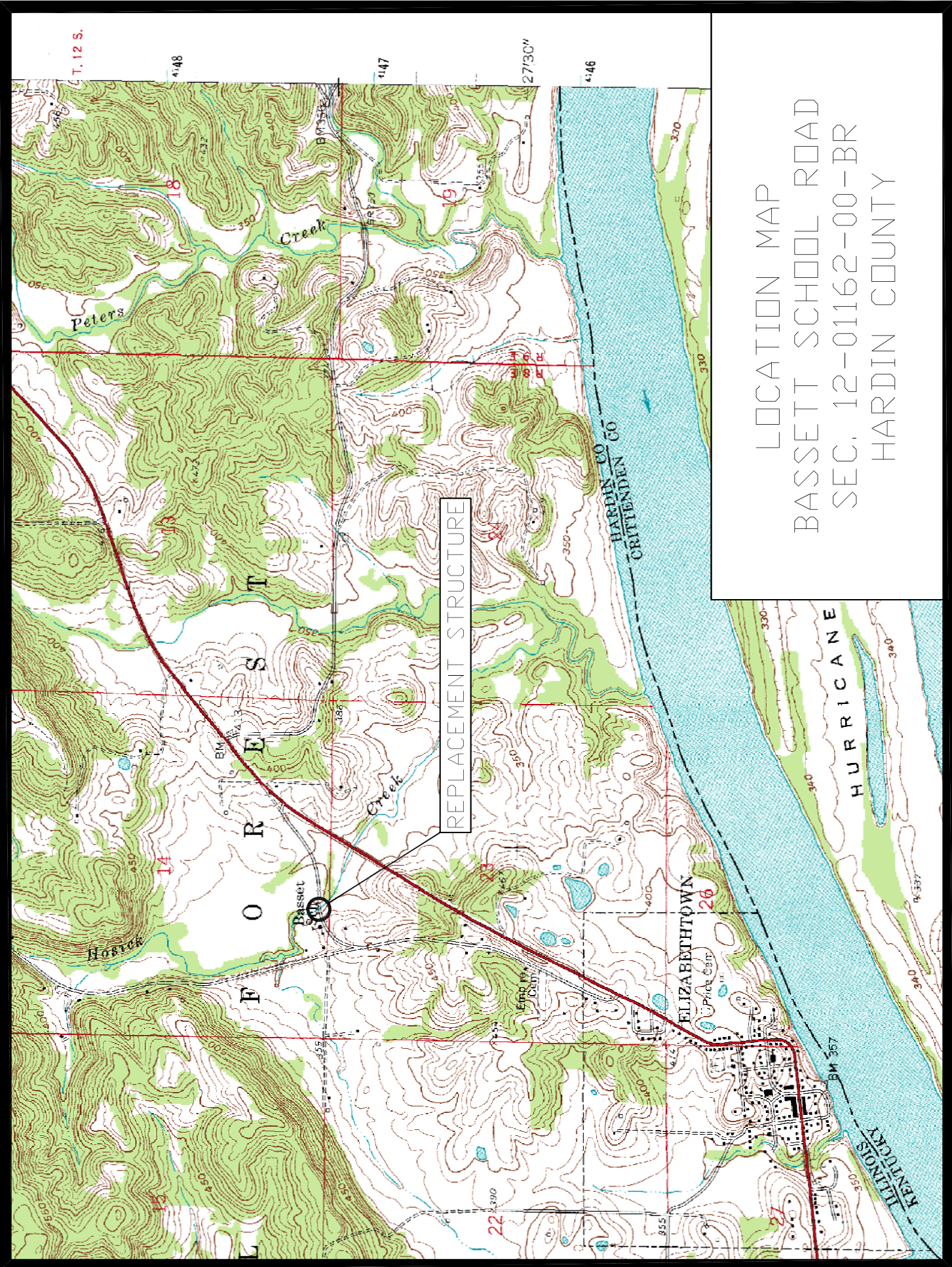
Not applicable since the Kentucky crayfish is not federally threatened or endangered.

F. For projects that will result in the taking of endangered or threatened species of plant, copies of expressed written permission of the landowner.

Not applicable for the Kentucky crayfish.

6. Attachments

1. Location Map
2. All information regarding the Kentucky Crayfish was taken from Kentucky Crayfish Survey Memorandum dated 28 June 2011 and prepared by:
Christopher A. Taylor
Christopher J. Rice
Center for Biodiversity
Illinois Natural History Survey
607 Peabody Drive
Champaign, IL 61820
ctaylor@mail.inhs.uiuc.edu
3. Plan and profile drawing with proposed construction limits
4. Storm Water Pollution Prevention Plan
5. Photos of Existing Bridge and Stream
6. U.S. Army Corps of Engineers Letter



LOCATION MAP
BASSET SCHOOL ROAD
SEC. 12-01162-00-BR
HARDIN COUNTY



Survey for Kentucky Crayfish in Hosick Creek at the Bassett School Road, IDOT TR 101C bridge, Hardin County, Illinois

IDOT Sequence Numbers: 20299



Prepared by:
Christopher A. Taylor
Christopher J. Rice
INHS/IDOT Statewide Biological Survey & Assessment Program
Program Report 2017 (47)

12 June 2017



Project Summary

This report is submitted in response to a request from IDOT for INHS personnel to monitor Kentucky Crayfish in Hosick Creek (Ohio River drainage) in the immediate vicinity of the Bassett School Road (IDOT TR 101C) bridge, Hardin County, Illinois. The assessment was conducted on 17 May 2017. Nineteen Kentucky Crayfish individuals were captured during the survey.



Approved By: Kevin Cummings, Further Studies Aquatics
Group Coordinator-Malacologist

Surveys Conducted By: Christopher A. Taylor, Field Biologist
Christopher J. Rice, Field Assistant

GIS Layers: Janet Jarvis, Remote Sensing Specialist

University of Illinois
Prairie Research Institute
Illinois Natural History Survey
Statewide Biological Survey and Assessment Program
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TABLE OF CONTENTS

Project summary	1
Introduction.....	3
Project location	3
Habitat characterization.....	3
Background.....	3
Methods	4
Results and Discussion	4
Acknowledgements	5
Literature Cited	5
Figures	
Figure 1 – Aerial image of sampling corridor, Hosick Creek at TR 101C.....	6
Tables	
Table 1 – Crayfish collected by INHS personnel, Hosick Creek at TR 101C.....	7
Appendix cover page.	8

Cover photo: Hosick Creek just upstream of the TR 101C bridge, Hardin County, Illinois. Photograph is facing downstream (south) and was taken 17 May 2017 (C.A. Taylor photo).

INTRODUCTION

This memorandum is submitted in response to a request by Vincent Hamer of IDOT to Wendy Schelsky of INHS dated 9 November 2016 for a survey of crayfishes in Hosick Creek at the Bassett School Road (IDOT TR 101C) bridge, Hardin County, Illinois. Attention was to be focused on the presence of the state endangered Kentucky Crayfish, *Orconectes kentuckiensis*. IDOT proposes to remove and replace the existing bridge structure – a project that will require in-stream work.

PROJECT LOCATION

Sampling for crayfishes was conducted in Hosick Creek at the Bassett School Road (IDOT TR 101C) bridge, 1.0 mi NE Elizabethtown, Hardin County, Illinois (Second Principal Meridian: Township 12S, Range 8E, Section 14; Latitude: 37.46701° North, Longitude 88.29514° West) (**Figure 1**). Latitude and longitude coordinates for this site were taken from Acme Mapper 2.1 (<http://mapper.acme.com/>) using a point centered on the Bassett School Road (IDOT TR 101C) bridge, (**Figure 1**). **Appendix 1** references a shapefile with sampling point information for Hosick Creek at the Bassett School Road (IDOT TR 101C) bridge project site as discussed in this report.

HABITAT CHARACTERIZATION

Hosick Creek at the Bassett School Road (IDOT TR 101C) bridge averaged 5 yards in width (range 4-6 yards) both up and downstream from the bridge. Water depth in Hosick Creek was estimated to be 0.1-0.5 yards deep immediately upstream from the bridge and also at a point approximately 10 yards downstream from the bridge. Water depth was estimated to be between 4-8" in riffles immediately under the bridge. The predominant substrate under and immediately downstream of the bridge was rip-rap, fractured bedrock, and large cobble. Fractured bedrock and large cobble were the predominant substrate types 10 yards downstream from the bridge. All stream banks were tree-lined, and the primary land cover type within the immediate vicinity of the bridge site was pasture.

BACKGROUND

Hosick Creek drains to the southeast from the Bassett School Road (IDOT TR 101C) bridge site, directly into the Ohio River. Records from the INHS Crustacean Collection indicate that the Devil Crayfish (*Cambarus diogenes*), the Calico Crayfish (*Orconectes immunis*), and the Kentucky Crayfish (*Orconectes kentuckiensis*) are historically known to occur in Hosick Creek. The state endangered Kentucky Crayfish has only been collected from Big Creek, Peters Creek, Hosick Creek, and their tributaries in Illinois. Big Creek, Peters Creek, and, Hosick Creek are direct tributaries to the Ohio River in Hardin County, Illinois. The most recent collection of the Kentucky Crayfish in Hosick Creek was at the Bassett School Road (IDOT TR 101C) bridge site in 2005 by INHS staff.

The Kentucky Crayfish is most common in shallow, rocky pools of small, direct tributaries to the

Ohio River in southern Illinois (Page 1985). The Kentucky Crayfish utilizes large rocks for cover (Page 1985), although Rhoades (1944a) reported collecting Kentucky Crayfish individuals in accumulations of woody debris over mud. Mating in Kentucky Crayfish can occur from late fall until March, and female Kentucky Crayfish have been observed carrying eggs in Illinois from March through July (Page 1985). The current status of threatened and endangered species of crayfishes discussed in this memorandum is taken from Illinois Endangered Species Protection Board (IESPB) (2010). Nomenclature used for crayfishes follows Hobbs (1989).

METHODS

INHS personnel C. A. Taylor and C. J. Rice surveyed Hosick Creek at the Bassett School Road (IDOT TR 101C) bridge for crayfishes on 17 May 2017. Crayfishes were captured using a 10 ft, 1/8 in mesh seine in an area ranging from 5 yards upstream to 25 yards downstream from the bridge. Voucher specimens were retained and placed into the INHS Crustacean Collection.

RESULTS AND DISCUSSION

We collected three crayfish species from Hosick Creek during our 17 May 2017 visit. Four individuals of the state endangered Kentucky Crayfish were collected approximately 25 yards downstream from the bridge, eight individuals were collected immediately under the bridge, and five individuals were collected within five yards upstream from the bridge. The rip-rap, large cobble, and fractured bedrock found under and immediately up and downstream of the Bassett School Road (IDOT TR 101C) bridge represent suitable habitat for the species.

We collected two additional crayfish species not previously recorded from Hosick Creek. We collected one Paintedhand Mudbug (*Cambarus polychromatus*) individual from a burrow adjacent to the upstream foundation of the Bassett School Road (IDOT TR 101C) bridge. We collected nine Cavespring Crayfish (*Cambarus tenebrosus*) individuals from the riffles immediately under the bridge. Both of these species are within their assumed native ranges and should not represent a significant threat to Kentucky Crayfishes.

Given the presence of Kentucky Crayfish and suitable habitat for the species in Hosick Creek in the vicinity of the Bassett School Road (IDOT TR 101C) bridge, and the history of collection of the Kentucky Crayfish in Hosick Creek, we believe that a sustainable reproducing population occurs at this project site. As such, all efforts to reduce the input of siltation should be implemented given that high levels of siltation can fill in the interstitial spaces found under rocks that are used as refugia by Kentucky Crayfish.

LITERATURE CITED

- Hobbs, H. H. Jr. 1989. An illustrated checklist of the American crayfishes (Decapoda: Astacidae, Cambaridae, and Parastacidae). *Smithsonian Contributions to Zoology*. 480: 1-236.
- Illinois Endangered Species Protection Board (IESPB). 2010. *Checklist of Endangered and Threatened Animals and Plants of Illinois* < [http://dnr.state.il.us/ESPB/2010 Checklist FINAL for webpage 082010.pdf](http://dnr.state.il.us/ESPB/2010%20Checklist%20FINAL%20for%20webpage%20082010.pdf) > [effective 20 August; accessed: 25 September 2010].
- Page, L. M. 1985. The crayfishes and shrimps (Decapoda) of Illinois. *Illinois Natural History Survey Bulletin* 33: 335-448.

ACKNOWLEDGMENTS

J.L. Jarvis (INHS) assisted in preparing the map in **Figure 1** and the associated shape file referenced in **Appendix 1**.



Crayfish survey location on Hosick Creek at Bassett School Road (Seq no. 20299) Hardin County, Illinois.



Figure 1. The TR 101C bridge over Hosick Creek (Hardin County, Illinois) where a crayfish monitoring survey was conducted by INHS personnel on 17 May 2017. Area in green indicates the stretch of Hosick Creek in which the crayfish survey was conducted. Map created by J. L. Jarvis (INHS).

Table 1. Crayfishes collected by INHS personnel C.A. Taylor and C. J. Rice on 17 May 2017 from Hosick Creek at the TR 101C bridge, Hardin County, Illinois. # = number of individuals collected (SE=State Endangered).

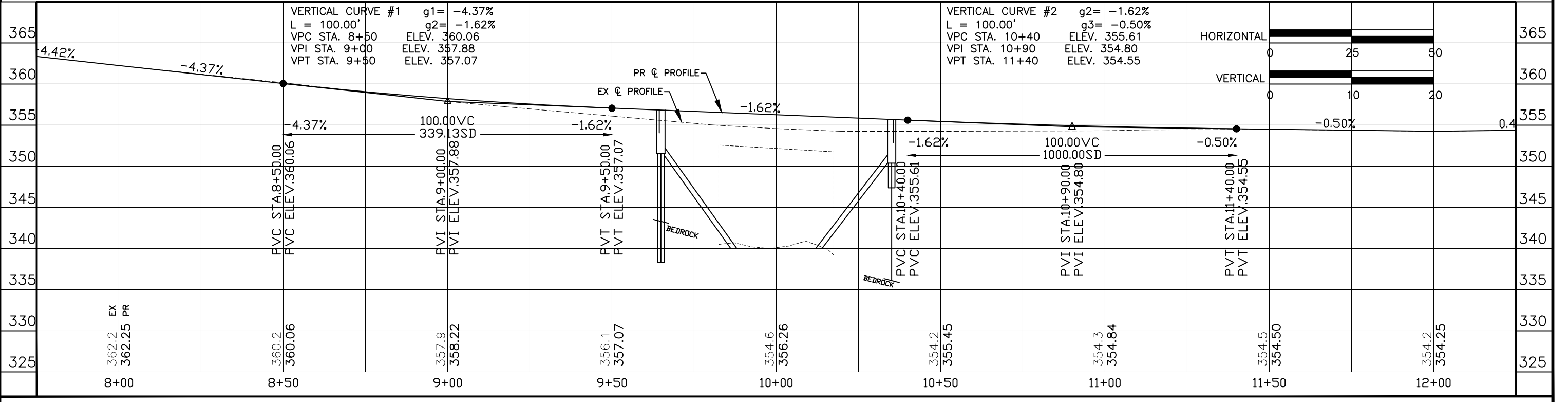
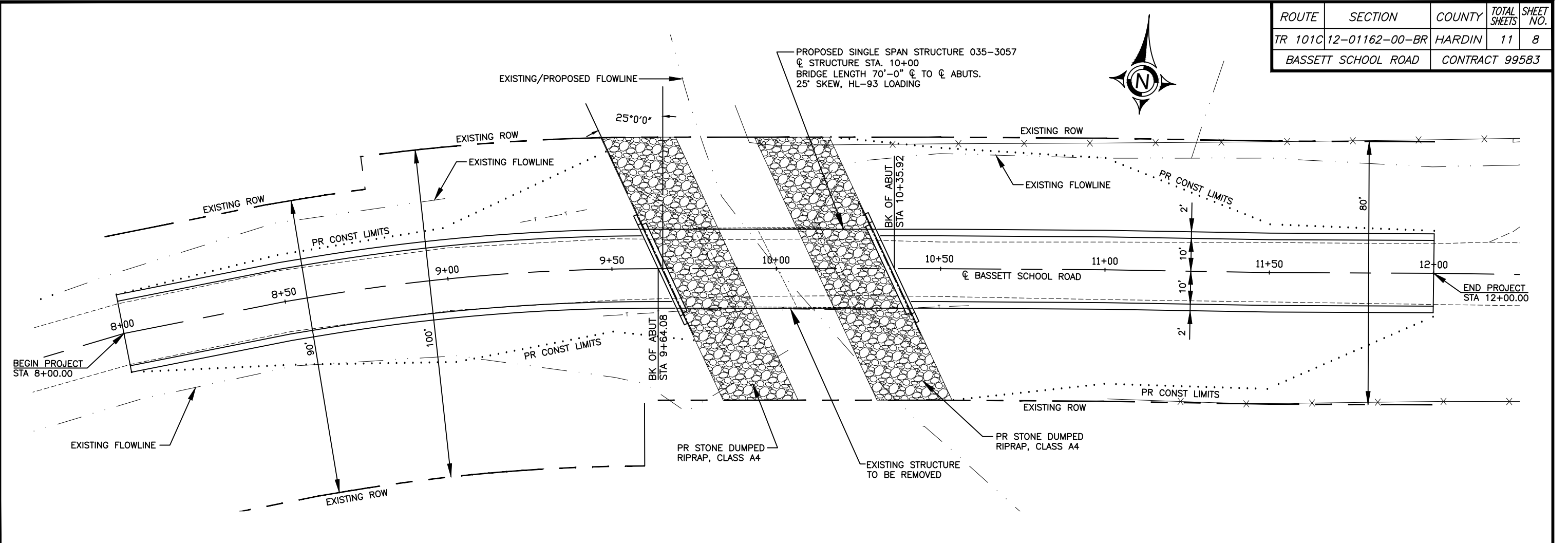
Family	Scientific name	Common name	#
Cambaridae	<i>Cambarus polychromatus</i>	Paintedhand Mudbug	1
	<i>Cambarus tenebrosus</i>	Cavespring Crayfish	9
	<i>Orconectes kentuckiensis</i> ^{SE}	Kentucky Crayfish	19

Appendix 1

This Project Location section references <20299_Crayfish_survey_Area_GIS.zip> – containing an ArcGIS shapefile with sampling point information for the Hosick Creek site discussed in this report where a survey for crayfish was conducted by INHS personnel on 17 May 2017.

The ArcGIS shapefile and this report were both submitted to IDOT via the IDOT Site Assessment Tracking System extranet website (Frostycap) on 12 June 2017.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 101C	12-01162-00-BR	HARDIN	11	8
BASSETT SCHOOL ROAD			CONTRACT 99583	



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STORM WATER POLLUTION PREVENTION PLAN

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 1010	12-01162-00-BR	HARDIN	1	2
BASSETT SCHOOL RD				

AREA OF CONSTRUCTION SITE

1. The total area of the construction site is estimated to be 0.78 Acres of which approximately 0.50 Acres will be disturbed.

OTHER REPORTS, STUDIES AND PLANS WHICH AID IN THE DEVELOPMENT OF THE SWPPP AS REFERENCED DOCUMENTS.

1. Information of the terrain was obtained from topographic maps.
2. Project plan documents, specifications and special provisions and plan drawings indicating the drainage patterns and location of existing drainage features were utilized in the preparation of the proposed placement of temporary erosion control systems.

DRAINAGE TRIBUTARIES AND SENSITIVE AREAS RECEIVING RUNOFF

1. No new discharge points will be constructed.

CONTROLS - EROSION CONTROLS AND SEDIMENT CONTROLS

1. Existing vegetation will be preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices will include temporary seeding, permanent seeding, mulching, protection of trees, preservation of mature vegetation and other appropriate measures as directed by the Engineer. Stabilization measures shall be initiated as soon as practical in those areas of the site where construction activities have ceased, but in no case more than 7 days after the construction activity for an area has temporarily or permanently ceased.
2. Areas outside the construction limits shall be protected from construction activities.
3. Dead, diseased or unsuitable vegetation within the site shall be removed as directed by the Engineer.
4. As soon as is reasonable, the temporary erosion control system shall be installed as indicated in the plans or as directed by the engineer.

This plan has been prepared with the intent to comply with the provisions of the NPDES Permit Number ILR10, issued by the Illinois Environmental Protection Agency for storm water discharges from construction site activities.

I certify under penalty of law that this plan was prepared at my direction in accordance with a system that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

JUSTIN HASTIE, COUNTY ENGINEER

DATE:

The following Plan is established and incorporated in the project to direct the Contractor in the placement of temporary erosion control systems and to provide a storm water pollution prevention plan for compliance under NPDES.

The purpose of this plan is to minimize erosion within the construction site and to limit sediments leaving the construction site by utilizing proper temporary erosion control systems and providing ground cover within a reasonable amount of time.

Certain erosion control facilities shall be installed by the Contractor at the beginning of construction. Other items shall be installed as directed by the Engineer on a case by case situation depending on the Contractor's sequence of activities, time of year and expected weather conditions.

The Contractor shall construct permanent erosion control systems and seeding within a time frame specified herein and as directed by the Engineer, therefore minimizing the amount of area susceptible to erosion and reducing the amount of temporary seeding. The engineer will determine if any temporary erosion control systems shown in the plans can be deleted and if any additional temporary erosion control systems, which are not included in the plans, shall be added. The contractor shall perform all work as directed by the Engineer and as shown in STANDARD 280001.

Section 280, Temporary Erosion Control, of the Standard Specifications additionally supplements this plan.

DESCRIPTION OF CONSTRUCTION ACTIVITIES

1. Temporary ditch checks shall be located at every 1.5 feet of fall/rise in ditch grade.

INTENDED SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES

1. Brush removal. Trees to remain will be protected against damage.
2. Remove Existing Bridge.
3. Construct Abutments.
4. Place new Riprap.
5. Construct New Bridge Deck.
6. Construct roadway transitions and side slopes.
7. Seeding and permanent erosion control systems.

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ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 1010	12-01162-00-BR	HARDIN	2	2
BASSETT SCHOOL ROAD				

DESCRIPTION OF STABILIZATION PRACTICES
DURING CONSTRUCTION

1. During construction, areas outside the construction limits shall be protected.
2. Within the construction limits, areas which may be susceptible to erosion as determined by the Engineer shall remain undisturbed until full scale construction is underway.
3. Earth stockpiles shall be temporary seeded if they are to remain unused for more than 14 days.
4. As soon as construction proceeds, the contractor shall institute the following as directed by the Engineer:
 - A) Place temporary erosion control facilities at locations shown in the plans.
 - B) Temporarily seed erodable bare earth on a weekly basis to minimize the amount of erodable surface area within the contract limits.
 - C) Construct roadside ditches and provide temporary erosion control systems.
 - D) Temporarily divert water around proposed culvert locations.
5. Excavated areas shall be permanently seeded immediately after final grading. If not, they shall be temporarily seeded if no construction in the area is planned for 7 days.
6. All necessary measures shall be taken by the contractor to contain any fuel or pollutant in accordance with EPA water quality regulations. Leaking equipment or supplies shall be immediately repaired or removed from the site.
7. The Resident Engineer shall inspect the project daily during construction activities. Inspection shall also be done weekly and after rains of 0.5 inches or greater or equivalent snowfall and during any winter shutdown period.
8. Sediment collected during the construction by the various temporary erosion control systems shall be disposed of on site on a regular basis as directed by the Resident Engineer. The cost of this maintenance shall be considered incidental to the erosion control system.
9. The temporary erosion control systems shall be removed as directed by the Engineer after use is no longer needed or no longer functioning. The cost of removal shall be included in the unit bid price for various temporary erosion control pay items.

DESCRIPTION OF STRUCTURAL PRACTICES
AFTER FINAL GRADING

1. Temporary seeding shall be left in place with proper maintenance until permanent erosion control and all proposed turf areas seeded and established.
2. Once permanent erosion control systems as proposed in the plans are functional and established, temporary items shall be removed, cleaned up and disturbed turf areas reseeded.

MAINTENANCE AFTER CONSTRUCTION

1. Construction is complete after FINAL acceptance by I.D.O.T. final inspection. Maintenance up to this date will be by the contractor.

MISCELLANEOUS

1. Temporary ditch checks shall be located at every 1.5 feet of fall/rise in ditch grade.
2. Temporary erosion control seeding shall be applied at the rate of 100 lbs/acre.
3. Straw bales, hay bales, perimeter erosion control barrier and silt fences will not be permitted for temporary or permanent ditch checks. Ditch checks shall be composed of aggregate, silt panels, rolled excelsior, urethane foam geotextile (silt wedges) and/or other material approved by the erosion and sediment control coordinator.
4. All erosion control products furnished shall be specifically recommended by the manufacturer for the use specified in the erosion control plan. Prior to the approval and use of the product, the contractor shall submit to the Engineer a notarized certification by the producer stating the intended use of the product and the physical properties required for this application are met or exceeded. The contractor shall provide manufacturer installation procedures to facilitate the Engineer in construction inspection.
5. All items shall be constructed as shown on STANDARD 280001 and as directed by the Engineer. Maintenance and cleaning of erosion control items shall be considered part of the respective erosion control pay item.



















DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE KY 40201-0059
FAX: (502) 315-6677

June 19, 2017

Regulatory Division
South Branch
ID No. LRL-2017-264-cat

Mr. Justin Hastie
Hardin County Engineer
P.O. Box 216
Elizabethtown, Illinois 62931

Dear Mr. Hastie:

This is in regard to your request for authorization to replace a bridge over Hosick Creek on Bassett School Road in Hardin County, Illinois (N37.46702, W88.29507). The bridge replacement would impact 75 linear feet of Hosick Creek (0.04 acre) and require the discharge of 50 cubic yards of riprap. The information supplied by you was reviewed to determine whether a Department of the Army (DA) permit will be required under the provisions of Section 404 of the Clean Water Act.

A review of the proposal indicates the work would be authorized under the provisions of 33 CFR 330 A. Nationwide Permit (NWP) No. 14, Linear Transportation Projects, as published in the Federal Register January 6, 2017. Under the provisions of this authorization, you must comply with the enclosed Terms and General Conditions for Nationwide Permit No. 14.

You must also comply with the enclosed Water Quality Certification (WQC) Conditions for Nationwide Permit No. 14, dated February 27, 2017, issued by the Illinois Environmental Protection Agency (ILEPA). Once you obtain your certification, or if no application was required, you may proceed with the project without further contact or verification from us.

This verification is valid until March 18, 2022. The enclosed Compliance Certification must be submitted to the District Engineer within **30 days** of completion of the authorized activity. Please note that we also perform periodic inspections to ensure compliance with our permit conditions and applicable Federal laws. A copy of this letter is being sent to the ILEPA and to your agent (see enclosure for addresses).

If you have any questions, please contact this office by writing to the above address, ATTN: CELRL-RDS, or by calling me at 502-315-6690. All correspondence pertaining to this matter should refer to our ID No. LRL-2017-264-cat.

Sincerely,

Original Signed

Cody Thayer
Project Manager, South Branch
Regulatory Division

Enclosures

ADDRESS FOR COORDINATING AGENCY

Mr. Bernard Killian
Illinois Environmental Protection Agency
Bureau of Water - Watershed Management Section #15
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

ADDRESS FOR AGENT

Mr. Michael Roberts
Brown & Roberts, Inc.
1 Westridge Road
Harrisburg, Illinois 62946