Incidental Take Submittal
For the State Threatened Species
Blanding's Turtle (*Emydoidea blandingii*)

Conservation Plan

1) Description of the Impact likely to result in the proposed taking

A) Introduction and Legal Description of Project Area

The project is for the reconstruction of the Piscasaw Creek Overflow Structure (Old Structure No. 056-0027 / New Structure No. 056-0089) located in McHenry County, approximately 1.88 miles east of the Boone County Line, just outside of the corporate limits of the Village of Chemung. The structure is located on Illinois Route 173 in the southeast quarter of Section 32 of T46N, R5E at latitude 42°-24'-56" N, longitude 88°-40'-30" W. Illinois Route 173 is part of FAP 303. A U.S.G.S. topographic map indicating the project location is attached. An aerial photograph with overlaid construction plans and the Blanding's turtle habitat location is also attached.

The legal description of the property is:
That part of the Southeast Quarter of the Southeast Quarter of Section 32, Township 46 North, Range 5 East, of the Third Principal Meridian, and also, that part of Lot 23 in County Clerk's Plat of Sections 32 and 33, Township 46 North, Range 5 East, of the Third Principal Meridian, according to the plat thereof recorded March 20, 1901 in Book 2 of Plats, Page 19 in McHenry County, Illinois.

The project is for the removal and replacement of the existing structure over the Piscasaw Creek floodplain. The existing Piscasaw Creek Overflow Structure is a bridge containing precast reinforced concrete channel beams and consists of three spans and two piers. The structure is 78 feet from back to back of the abutments, and 41.24 feet in width. The bridge has two 12-foot wide lanes of traffic, one in each direction. The bridge was constructed in 1929 at a width of 24 feet and widened in 1971 to its current size. The overall superstructure is in good condition but does not meet the current standards; the substructure is in fair condition.

The new Overflow Structure will consist of a two span concrete/steel girder bridge. The profile of the new bridge will be raised 2.5 feet and will provide a larger waterway opening, which will reduce the collection of debris and reduce scour. Riprap will be added to the embankment under the bridge. Temporary easements will be required from adjacent properties. Erosion and sediment control

technologies will be used during construction. Construction is expected to last 1.5 years and is planned to begin in the summer of 2007.

Work within the wetland that is located adjacent to the Overflow Structure will be required for the removal of the two piers and construction of one new pier. The two piers will not be completely removed but will instead be sawed off above their footings, leaving the below streambed portions of the piers in place. This will reduce the amount of subsurface disturbance and minimize impacts to water quality. The construction of the new pier will take place within a floating cofferdam. It is anticipated that a temporary haul road will not be required for construction since a floating cofferdam will be used to install the bridge pier.

The Piscasaw Creek Overflow Structure is located approximately 875 feet west of the Piscasaw Creek, within the floodplain of that waterway. The primary interest location of the Blanding's turtle is on the north side of the Piscasaw Creek Overflow Structure immediately adjacent to the existing structure and extending north to the Union Pacific Railroad tracks. This part of the floodwater overflow channel contains standing water and emergent aquatic vegetation. The channel on the south side of the existing overflow structure contains a well-developed sedge meadow community, which may be seasonally flooded and thereby provide additional habitat for the Blanding's turtle.

The project area was visited in September 2006 by the Illinois Natural History Survey (INHS) and suitable habitat was located (as described above). The wetland was not trapped because Blanding's turtles do not respond strongly to traps outside of May and June. One Blanding's turtle was observed in the project area in June 2001 by McHenry County Conservation District (MCCD) staff. Mr. Ed Collins of MCCD advised that Blanding's turtles are known to utilize nearby Piscasaw Creek as a travel corridor (personal communication). It is not known if Blanding's turtles are located in the habitat associated with the overflow structure. For the purposes of this Incidental Take permit application, it is assumed that the turtles are present because suitable habitat is present.

The property located within the road and bridge right-of-way is owned by the Illinois Department of Transportation (IDOT). The adjacent property, where the Blanding's turtle habitat is found, is within Beck's Woods and is owned by the MCCD.

B) Biological Data on the Species

Blanding's turtle (*Emydoidea blandingii*) was listed as a State Threatened Species by the Illinois Department of Natural Resources (IDNR) in 1999. The turtle typically inhabits marshes, bogs, fens, prairie wetlands, sedge meadows, and vegetated regions of shallow lakes and ponds (Phillips et al. 1999, Dreslik and Phillips 1998). Pope (1964) described the habitat of Blanding's turtle as shallow, plant-grown water of ponds, swamps, sloughs, ditches, low fields, sluggish

streams; it is rarely found in forested regions. Of the threatened and endangered turtles in Illinois, the Blanding's turtle probably has the broadest distribution (Dreslik and Phillips 1998). Populations in northeastern Illinois are in jeopardy due to urbanization and habitat loss (Ludwig et al. 1992, Redmer and Kruse 1988). The life history characteristics of the turtle, also potentially exacerbate the decline of the species. These characteristics include delayed sexual maturity (Congdon et al. 1993), the requirement of high temperature for hatchling success (Gutzke and Packard 1987), high rates of nest predation (Congdon et al. 1993, Ross and Anderson 1990), small population sizes (Rubin 2000, Rubin et al. 2001), low rates of juvenile recruitment (Rubin 2000, Rubin et al. 2001), and the reluctance of individuals to migrate between habitat patches (Rubin 2000, Rubin et al. 2001).

Blanding's turtles in Chain of Lakes State Park in northeastern Illinois are primarily carnivorous and ingest snails and aquatic insects (Rowe 1992). The Blanding's turtle occurs in scattered colonies. The current range of Blanding's turtle in Illinois is primarily the northern half of the state, with populations following the Illinois River southward (Phillips 1999). They have recently been documented in Carroll, Cook, Grundy, Henderson, Henry, Jasper (Olson and Louis 1999), Kane, Kankakee, Lake, LaSalle, Lee, McHenry, McClean, Will and Whiteside counties (Dreslik and Phillips 1998).

C) Description of the Activities That May Result in Taking

The potential for take would come from activities associated with the construction of a new overflow structure over the Piscasaw Creek floodplain. These activities consist of the removal of two bridge piers, the placement of one bridge pier, the temporary installation of a floating cofferdam from which the work will occur, and embankment work.

D) Explanation of the Anticipated Adverse Effects on the Listed Species

The anticipated adverse effects include:

1) Blanding's turtles may be crushed or entombed by equipment or vehicles.

2) Permanent loss of habitat associated with bridge pier base.

3) Short term disturbances due to increased noise and activities during construction.

3) Potential degradation of habitat associated with surface runoff and salt spray from the bridge deck.

2) Measures to Minimize and Mitigate the Impact

A) Plans to minimize the area, estimated number of individuals that will be taken, and the amount of habitat affected.

The limits of construction include an area of 1.10 acres. The proposed limits of construction represent the minimum area necessary in which to work and construct the new crossing over the Piscasaw Creek overflow. The footprint of the project has been minimized by increasing or tightening the slope of the highway embankment from 4:1 to 3:1.

The project sponsor estimates 0-1 Blanding's turtles could be taken as a result of replacing the Piscasaw Creek overflow bridge.

Approximately 0.172 acres within the limits of construction for the Piscasaw Creek Overflow Structure consist of wetlands, some of which contains habitat suitable for the Blanding's turtle. Temporary impacts to wetlands equal 0.088 acres. Permanent impacts equal 0.084 acres and these are caused by the placement of bridge piers and highway embankment in wetland habitats. The wetland impacts will occur within wetlands sites 1 and 5 as delineated by INHS and described in their 5 September 2006 report.

The measures discussed above will reduce the amount of habitat that is affected to a minimal amount. Permanent loss of habitat is restricted to the area of the pier footing and highway embankment.

B) Plans for Management of the Area Affected That Will Enable the Continued Use of the Species

The property and habitats of the area in question are under public ownership. The surrounding property is located within Beck's Woods, which is owned and managed by MCCD. The public ownership of this property protects the area against any potential secondary impacts due to urban development.

C) Description of All Measures to be Implemented to Minimize or Mitigate the Effects on the Species

Pre-construction

1) The IDOT will include in the contract plans and specifications a reference to the Blanding's turtle incidental take authorization and the commitments contained therein. The conservation plan will be attached to the contract special provisions. The IDOT will also include in the contract plans a full-size plan drawing depicting the project area, ROW (temporary and permanent), location of super silt fencing, Blanding's turtle habitat, wetland locations, areas of temporary and permanent wetland impacts.

2) IDOT District One will notify the Bureau of Design and Environment (BDE) and IDNR ten business days in advance of the scheduled start date of the project. The INHS or MCCD will survey the limits of construction prior to work and relocate any turtles that are found to outside the limits of construction. Immediately following the turtle survey, the limits of construction will be fenced. The fencing will function to keep turtles from entering into, and construction equipment from exiting out of, the limits of construction.

Following the turtle survey, super silt fencing will be installed adjacent to the road work at the limits of construction. Super silt fencing consists of chain link fencing with silt fencing attached; the chain link fencing adds stability to the silt fencing. This use of super silt fencing will reduce the amount of siltation that enters Piscasaw Creek and its adjacent floodplain, thereby reducing water quality impacts.

The super silt fencing will also serve to establish and delineate no intrusion areas. No intrusion signs will be posted on the super silt fencing to identify areas outside of the work zone where intrusion by equipment or personnel is prohibited. This will prevent equipment or personnel from accidentally impacting additional Blanding's turtle habitat. Additionally, the super silt fencing will inhibit movement of Blanding's turtles (and other wildlife) from entering into the construction zone.

3) IDOT District One will schedule a pre-construction meeting and will notify the BDE and IDNR seven days in advance of the scheduled meeting. The pre-construction meeting will include Blanding's turtle awareness training. Pre-construction awareness training will be provided for all contractors. The contractors and their employees will be made aware of the possibility that these turtles may be present. Picture(s) of the Blanding's turtle will be provided to workers so they can be informed of the particular turtle in need of protections. The purpose of the no intrusion signs and the importance of keeping personnel and equipment outside of the no intrusion areas will be explained. All personnel will be advised that no turtles may be killed or collected from the project area. A phone number will be provided with contact information if a turtle is found in the project area.

Construction

1) Highway embankments with 3:1 slopes will be constructed. This measure will minimize the footprint of the embankment and the take of suitable Blanding's turtle habitat.

2) INHS or MCCD may periodically inspect perimeter fencing for holes and report gaps or holes to the Resident Engineer for repair.

3) During construction, any Blanding's turtles that are located within the project vicinity are expected to avoid the area because of the noise associated with construction activity.

4) Turtles that are found by construction staff will be reported to the Resident Engineer. Turtles will be removed and placed outside the limits of construction by either the INHS or MCCD. MCCD, with IDOT or INHS providing additional support as needed, will respond to calls from the Resident Engineer to determine if the turtle in question is a Blanding's turtle.

5) Super silt fencing will be used adjacent to the roadway work around the limits of construction. Super silt fencing will reduce the amount of siltation that enters Piscasaw Creek and its adjacent floodplain.

6) Wetland mitigation and conservation measures are also to be implemented by the MCCD. MCCD will conduct wetland restoration within the Piscasaw Creek watershed. The proposed site is former agricultural land allowed to go fallow, contains former hydric soils and is located along the Piscasaw Creek. The proposed restoration of wetlands along the Creek will provide a benefit to the Blanding's turtle habitat in the stream and the existing trout fishery through silt reduction. MCCD is committed to restoring a larger portion of the site than necessary for IDOT mitigation purposes (12 acres total) through the use of its own in-house resources and funds. IDOT is funding part of the site restoration with its required wetland mitigation funding. The project will therefore have a much larger impact from a wetland and water quality perspective than that required by U.S. Army Corps of Engineers permitting.

Post-Construction

1) Areas of temporary impacts, including wetlands and uplands, will be re-vegetated using native plants species.

2) INHS or MCCD will survey for live and dead turtles within the limits of construction and report to the BDE their findings.

D) Plans for Monitoring the Effects of Measures Implemented

There are no current plans for monitoring the Piscasaw Creek floodplain. Population studies of the Blanding's turtle have not been done in the project area and its presence is not known. No comparisons could therefore be made to the follow-up data that was collected, rendering any determinations that monitoring data provided inconclusive.

The adjacent property is under MCCD ownership and will be appropriately managed to maintain habitat and water quality.

E) Adaptive Management Practices That Will Be Used to Deal With the Changed or Unforeseen Circumstances That Affect the Effectiveness of Measures Instituted to Minimize or Mitigate the Effects of the Proposed Action on the Species.

In addition to items described in Section 2A and 2C above, IDOT's Erosion and Sediment Control, Landscape Design Criteria Manual will be used. This Manual utilizes the latest techniques in sediment and erosion control design and implementation.

F) Verification That Adequate Funding Exists to Support and Implement All Mitigation Activities Described In the Conservation Plan.

This project is authorized by IDOT, which receives funding from Illinois General Assembly and the Federal government in carrying out its programs.

3) A description of alternative actions the applicant considered that that would not result in take and the reasons that each of those alternatives was not selected. (A "no-action" alternative shall be included in this description of alternatives.)

The Overflow Structure is being replaced at the same time as the adjacent bridge over Piscasaw Creek. Several alternative bridge designs were addressed for both bridge replacements in the early design stage. The adjacent Piscasaw Bridge design that was chosen was chosen for the fact that it resulted in the least amount of environmental impacts. Design standards require that the bridge have sufficient clearance to clear the high water elevation which results from a 50-year storm event. Based on this clearance, a minimum height of the beams and number of spans was chosen in order to reduce the amount of earthwork that would be needed on the approach and the abutments of the stream bank. By minimizing the earthwork needed on the approach and the abutments, environmental impacts to the stream and adjacent wetlands were avoided and/or minimized. Once the Piscasaw Bridge design was chosen, this design mandated the design of the adjacent Overflow Structure.

Relocation of Illinois Route 173 for a crossing of Piscasaw Creek at another location would not be practical or economically reasonable. Introducing a new stream crossing would result in more extensive environmental impacts.

The No-Action alternative is not practical. The Piscasaw Creek bridge is currently unsafe and both bridges have been restricted to one lane with a traffic signal at each end. This results in exposing the traveling public to safety hazards. The No-Action alternative would result in the continuation of this unsafe condition.

4) Data and information to indicate that the proposed taking will not reduce the likelihood of the survival in the wild, the biotic community of which the species is part of, or the habitat essential to the species' existence in Illinois.

The project will have minimal impact on the surrounding ecosystem. The piers from both the Piscasaw Bridge and the Overflow Structure bridge will result in the removal of ??? acre of wetlands containing habitat; this small amount is not expected to cause an effect because sufficient habitat is located adjacent to the Overflow Structure. No haul road or temporary fill adjacent to the bridge will be required because the construction of both bridges will occur within floating cofferdams. No intrusion fencing will reduce the area impacted by equipment or construction personnel. Temporary, short term water quality impacts will be minimized through the use of a cofferdam and super silt fencing. No new long term ecosystem impacts will result because it is the replacement of an existing structure and existing conditions will be maintained.

The current range of Blanding's turtle in Illinois is primarily the northern half of the state, with populations following the Illinois River southward (Phillips 1999). They have recently been documented in Carroll, Cook, Grundy, Henderson, Henry, Jasper (Olson and Louis 1999), Kane, Kankakee, Lake, LaSalle, Lee, McHenry, McClean, Will and Whiteside counties (Dreslik and Phillips 2006). The wetland restoration of agricultural property committed to by MCCD should provide more than adequate conservation measures to facilitate the continued existence of the Blanding's turtle. Therefore, it is unlikely that the temporary and permanent corridor impacts to the wetland habitats will jeopardize the continued existence of the species in 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

Christopher A. Phillips
Director of the Center for Biodiversity
Illinois Natural Survey

Elizabeth Kessler
Executive Director
McHenry County Conservation District

Tom Brooks
Biological Resource Unit Manager
Illinois Department of Transportation

Susan Dees
Biological Resources Specialist
Illinois Department of Transportation

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 INHS performed a turtle survey in September 2006. In addition, the INHS or MCCD will relocate all turtles found within the project area immediately preceding the start-up of construction.

MCCD will respond to calls from the contractor regarding the presence of turtles within the construction zone.

The MCCD is also committed to the proposed restoration of approximately 12 acres of wetlands along Piscasaw Creek. This is intended to provide overall ecosystem benefits and to the Blanding's turtle habitat in the stream and the existing trout fishery through silt reduction.

The IDOT will provide a turtle education program to the contractors prior to construction. IDOT is also responsible for all biological clearance coordination and recommendations related to the project.

C. Certification 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.

The project is authorized by IDOT, which receives funding from the Illinois General Assembly and the Federal government in carrying out its programs.

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

IDOT abides by the National Environmental Policy Act and all associated state and federal environmental laws in carrying out its mission of performing the most environmentally sensitive methods of transportation planning and engineering.

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

Blanding's turtle is a state threatened species and is not a federally protected species. No federal authorization is required.

Literature Cited

Congdon, J.D., A.E. Dunham, and R.C. Van Loben Sels. 1993. Delayed Secual Maturity and Demographics of Blanding's Turtle (*Emydoidea blandingii*): Implications for Conservation and Management of Long-Lived Organisms. Conservation Biology 7(4): 826-833.

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Redmer, M. and G. Kruse. 1988. Updates to the list of Illinois' endangered and threatened amphibians and reptiles. Bulletin of the Chicago Herpetological Society 33: 244-245.

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Rowe, J.W. 1992. Dietary Habits of the Blanding's Turtle (*Emydoidea blandingii*) in Northeastern Illinois. Journal of Herpetology 26(1): 111-114.

Rubin, C.S. 2000. Ecology and genetics of Blanding's turtles in an urban landscape. Unpublished Doctoral Dissertation, University of Illinois, Urbana-Champaign. 125 pp.

Rubin, C.S., R.E. Warner, and D.R. Ludwig. 2001. Habitat use and movements of radio tagged Blanding's turtles (*Emydoidea blandingii*) in a suburban landscape. Chelonian Conservation and Biology 4: 136-141.

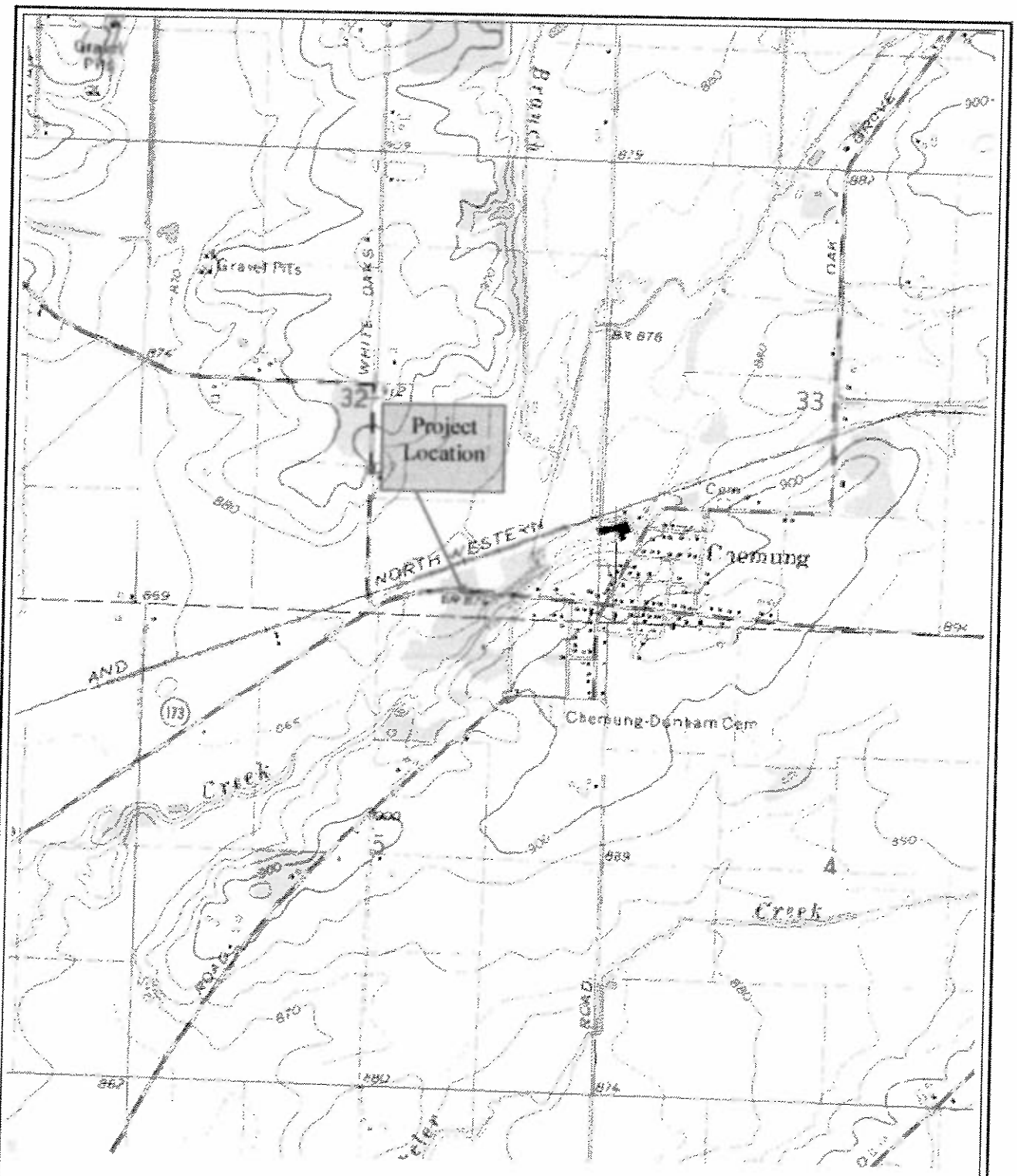

Exhibit: U.S.G.S. topographic map Becks Woods quadrangle	**Incidental Take Permit** **Blanding's Turtle** **IL Route 173 Piscasaw Creek Overflow Structure**
Client/Project: IDOT District One	CTE | AECOM

PISCASAW
CREEK
OVERFLOW
WETLAND 5
BLANDING'S
TURTLE
HABITAT
WETLAND 1
PISCASAW
CREEK
OVERFLOW
INCIDENTAL TAKE SUBMITTAL
BLANDING'S TURTLE
IL ROUTE 173
PISCASAW CREEK
OVERFLOW STRUCTURE

Incidental Take Submittal
For the State Threatened Species
Slippershell Mussel (*Alasmidonta viridis*)

Conservation Plan

1) Description of the Impact likely to result in the proposed taking

A) Introduction and Legal Description of Project Area

The project is for the reconstruction of the Piscasaw Creek Bridge (Old Structure No. 056-0028 / New Structure No. 056-0090) located in McHenry County, approximately 2.0 miles east of the Boone County Line, just outside of the corporate limits of the Village of Chemung. The bridge is located on Illinois Route 173 in the southeast quarter of Section 32 of T46N, R5E at latitude 42°-24'-56" N, longitude 88°-40'-30" W. A U.S.G.S. topographic map indicating the project location is attached. An aerial photograph with overlaid construction plans and the slippershell mussel habitat location is also attached.

The legal description of the property is:
That part of the Southeast Quarter of the Southeast Quarter of Section 32, Township 46 North, Range 5 East, of the Third Principal Meridian, and also, that part of Lot 23 in County Clerk's Plat of Sections 32 and 33, Township 46 North, Range 5 East, of the Third Principal Meridian, according to the plat thereof recorded March 20, 1901 in Book 2 of Plats, Page 19 in McHenry County, Illinois.

The project is for the removal and replacement of the existing structure over Piscasaw Creek. The bridge was constructed in 1929 at a width of 24 feet. In 1971 the bridge was widened to 42 feet. It has since deteriorated to the point where complete replacement is necessary. The existing bridge is a six span bridge containing five piers in the stream. The existing bridge is approximately 160 feet in length and 42 feet in width.

The new structure will be on the existing alignment and will be a three span bridge containing two piers. The new structure will be approximately 180 feet in length and 42.5 feet in width. The profile of the new bridge will be raised 2.5 feet and will provide a larger waterway opening, which will reduce the collection of debris and reduce scour. Riprap will be added to the embankment of Piscasaw Creek under the bridge. The bridge will be constructed in stages and temporary easements will be required from adjacent properties. Erosion and sediment control technologies will be used during construction. Construction is expected to last 1.5 years and is planned to begin in the summer of 2007.

Instream work will be required for the removal of the five piers and construction of the two new piers. The five piers will not be completely removed but will instead be sawed off at the creek bottom, leaving the below grade portions of the piers in place. This will reduce the amount of subsurface disturbance and minimize impacts to water quality. The construction of the new piers will take place within floating cofferdams. It is anticipated that a temporary haul road will not be required for construction since floating cofferdams will be used to install the bridge piers.

At the same time that the Piscasaw Creek bridge is being replaced, the Piscasaw Creek Overflow Structure will also be replaced. The Overflow Structure is located approximately 875 feet west of the Piscasaw Creek, within the floodplain of that waterway. There is no suitable habitat for slippershell mussels in the vicinity of the Overflow Structure. This permit application is therefore for the Piscasaw Creek bridge only.

Piscasaw Creek from Little Beaver Creek to the Wisconsin state line is listed on the National Rivers Inventory. Its Outstanding Remarkable Values (ORVs) are its fish diversity and one of the region's few remaining undeveloped, fully functioning high order streams. As a fully functional high order stream, Piscasaw Creek and its adjacent areas have been designated as a High Functional Value Wetland by the McHenry County Illinois Advanced Identification Study (ADID). The stream has been designated as an Illinois Natural Area.

The property located within the road and bridge right-of-way is owned by the Illinois Department of Transportation (IDOT). The adjacent property is within Beck's Woods and is owned by the McHenry County Conservation District (MCCD).

B) Biological Data on the Species

The slippershell mussel (*Alasmidonta viridis*) was listed as a State Threatened Species in 1989. The slippershell inhabits small to medium sized streams, creeks and river headwaters. It is usually found buried in sandy or gravel substrates in shallow water. It is a filter feeder and feeds in algae, zooplankton, and debris filtered from the water column. Suitable habitat for fish host species must be present for successful reproduction. Distribution in Illinois has been reduced as a result of increased siltation, pollution, and channelization.

Host species for the slippershell mussel are the johnny darter (*Etheostoma nigrum)* and the mottled sculpin *(Cotus bairdi)* (Clarke 1981). The slippershell is probably a long-term breeder, internally holding the larvae for approximately one year (Oesch 1984). Once released, the larvae attach to the fish host species and remain for an unknown duration. Little else is known about the biology of the slippershell mussel.

Slippershell mussels have historically been found in Piscasaw Creek. A relic shell was found in 1991 one-half mile north of Chemung at Maxon Road; both a dead individual (1995) and a live individual (1996) were found three miles southwest of Chemung at Streit Road. In 1995, Mr. Ed Collins of the MCCD sampled the creek at Illinois Route 173. Mr. Collins found a single live individual slippershell mussel at the bridge. A slippershell was found in Piscasaw Creek May 6, 1997 by Brad Woodson (personal communication, Susan Dees of IDOT). Habitat for the slippershell is sand, mud, or fine gravel (Cummings & Mayer, 1992), which is exactly the type of substrate present at the Illinois Route 173 bridge.

Sampling for mussels in the immediate vicinity of the Piscasaw Creek bridge was conducted on September 19, 2006 by the Illinois Natural History Survey (INHS). INHS personnel examined a reach of the Creek approximately 150 meters upstream to approximately 150 meters downstream of the bridge. The stream averaged five meters in width, with depths ranging from 0.1 to one meter. The substrate was predominantly sand and gravel with small areas of cobble; the water was exceptionally clear. Both banks were lined with trees and the surrounding land was forested. Freshwater mussels were searched for by hand through the area. The survey for mussels yielded seven species, including a relict shell of the slippershell. None of the other species collected are listed as threatened or endangered. Given the condition of the slippershell shell and the occurrence of this species at nearby sites, it is assumed that the species is still extant at the Piscasaw Creek bridge. Although no live slippershell was found during the survey, it was found at this location in 1995 and the habitat for this species is present at the site.

C) Description of the Activities That May Result in Taking

The potential for take would come from activities associated with the construction of a new bridge over Piscasaw Creek. These activities consist of the placement of two bridge piers, the temporary installation of floating cofferdams from which the work will occur, and embankment work.

D) Explanation of the Anticipated Adverse Effects on the Listed Species

The anticipated adverse effects include:

1) Slippershell mussels may be crushed or entombed by equipment or piers.

2) Permanent loss of habitat associated with bridge pier bases.

3) Short term water quality impacts due to erosion and sedimentation during construction work.

4) Potential degradation of habitat associated with runoff and salt spray from the bridge deck.

2) Measures to Minimize and Mitigate the Impact

A) Plans to minimize the area, estimated number of individuals that will be taken, and the amount of habitat affected.

The MCCD will relocate all mussels found on the sandbar within Piscasaw Creek in the vicinity of the project in spring of 2007. All species of mussels located in the vicinity, regardless of species, will be re-located to appropriate habitat. By relocating all mussels, MCCD and IDOT believe that no individual slippershell mussels will be taken. The old piers will not be completely removed but will instead be sawed off above their footings at the creek bottom, leaving the below streambed portions of the piers in place. This will reduce the amount of subsurface disturbance and minimize impacts to water quality. Construction activity will be limited to approximately 100 meters upstream and downstream of the project.

Wetland mitigation and conservation measures are also to be implemented by the MCCD. MCCD will conduct wetland restoration within the Piscasaw Creek watershed. The proposed site is former agricultural land allowed to go fallow, contains former hydric soils and is located along the Piscasaw Creek. The proposed restoration of wetlands along the Creek will provide a benefit to the threatened mussel species in the stream and the existing trout fishery through silt reduction. MCCD is committed to restoring a larger portion of the site than necessary for IDOT mitigation purposes (12 acres total) through the use of its own in-house resources and funds. The project will therefore have a much larger impact from a wetland and water quality perspective than that required by U.S. Army Corps of Engineers permitting.

During construction, the piers will be installed using floating cofferdams. The use of cofferdams will minimize any sedimentation that enters the water, thereby reducing water quality impacts and potential impacts to mussels. Additionally, super silt fencing will be used adjacent to the road work. Super silt fencing consists of chain link fencing with silt fencing attached; the chain link fencing adds stability to the silt fencing. This use of super silt fencing will also reduce the amount of siltation that enters Piscasaw Creek.

The measures discussed above will reduce the amount of habitat that is affected to a minimal amount. Permanent loss of habitat is restricted to the area of the two pier footings.

B) Plans for Management of the Area Affected That Will Enable the Continued Use of the Species

Measures taken to minimize substrate disturbance should allow mussels to move back into the area over time.

The property and habitats of the area in question are under public ownership. The surrounding property is located within Beck's Woods and is owned and managed by MCCD. The public ownership of this property protects the area for any potential secondary impacts due to urban development.

C) Description of All Measures to be Implemented to Minimize or Mitigate the Effects on the Species

Avoidance and minimization efforts were described in Section 2A above. No mitigation is proposed.

D) Plans for Monitoring the Effects of Measures Implemented

There are no current plans for monitoring Piscasaw Creek. The slippershell mussel is very small and the efforts needed to find specimens would likely cause more damage to the habitat. The adjacent property is under MCCD ownership and will be appropriately managed to maintain habitat and water quality.

E) Adaptive Management Practices That Will Be Used to Deal With the Changed or Unforeseen Circumstances That Affect the Effectiveness of Measures Instituted to Minimize or Mitigate the Effects of the Proposed Action on the Species.

In addition to items described in Section 2A and 2C above, IDOT's Erosion and Sediment Control, Landscape Design Criteria Manual will be used. This Manual utilizes the latest techniques in sediment and erosion control design and implementation.

F) Verification That Adequate Funding Exists to Support and Implement All Mitigation Activities Described In the Conservation Plan.

This project is authorized by IDOT, which receives funding from Illinois General Assembly and the Federal government in carrying out its programs.

3) A description of alternative actions the applicant considered that that would not result in take and the reasons that each of those alternatives was not selected. (A "no-action" alternative shall be included in this description of alternatives.)

Several alternative bridge designs were addressed in the early design stage. The bridge design that was chosen was chosen for the fact that it resulted in the least amount of

environmental impacts. Design standards require that the bridge have sufficient clearance to clear the high water elevation which results from a 50-year storm event. Based on this clearance, a minimum height of the beams and number of spans was chosen in order to reduce the amount of earthwork that would be needed on the approach and the abutments of the streambank. By minimizing the earthwork needed on the approach and the abutments, environmental impacts to the stream and adjacent wetlands were avoided and/or minimized.

Relocation of Illinois Route 173 for a crossing of Piscasaw Creek at another location would not be practical or economically reasonable. Introducing a new stream crossing would result in more extensive environmental impacts.

The No-Action alternative is not practical. The bridge is currently unsafe and has been restricted to one lane with a traffic signal at each end. This results in exposing the traveling public to safety hazards. The No-Action alternative would result in the continuation of this unsafe condition.

4) Data and information to indicate that the proposed taking will not reduce the likelihood of the survival in the wild, the biotic community of which the species is part of, or the habitat essential to the species' existence in Illinois.

The project will have minimal impact on the surrounding ecosystem. The piers will result in the removal of 0.266 acre of habitat; this small amount is not expected to cause an effect because sufficient habitat is located adjacent to the bridge. Additionally, all mussels will be relocated in the spring of 2007, prior to the beginning of any construction work. It is therefore anticipated that no take will occur. No haul road or temporary fill adjacent to the bridge will be required because the construction will occur within floating cofferdams. Temporary, short term water quality impacts will be minimized through the use of cofferdams and super silt fencing. No new long term ecosystem impacts will result because it is the replacement of an existing bridge and existing conditions will be maintained.

The range of the slippershell mussel within Illinois includes the northern two-thirds of the state. Because of this and the items discussed above, it is unlikely that the temporary and permanent corridor impacts to the Piscasaw Creek will jeopardize the continued existence of the species in 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.

Christopher A. Phillips
Director of the Center for Biodiversity
Illinois Natural Survey

Elizabeth Kessler
Executive Director
McHenry County Conservation District

Tom Brooks
Biological Resource Unit Manager
Illinois Department of Transportation

Susan Dees
Biological Resources Specialist
Illinois Department of Transportation

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 MCCD will relocate all mussels from the Piscasaw Creek project area in spring 2007, prior to the start of construction.

The MCCD is also committed to the proposed restoration of approximately 12 acres of wetlands along Piscasaw Creek. This is intended to provide overall ecosystem benefits and to the threatened mussel species in the stream and the existing trout fishery through silt reduction.

The INHS performed a mussel survey on September 19, 2006. The INHS has completed its duties of surveying the project location.

The Illinois Department of Transportation is responsible for all biological clearance coordination and recommendations related to the project.

C. Certification 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.

The project is authorized by IDOT, which receives funding from the Illinois General Assembly and the Federal government in carrying out its programs.

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

IDOT abides by the National Environmental Policy Act and all associated state and federal environmental laws in carrying out its mission of performing the most environmentally sensitive methods of transportation planning and engineering.

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

The slippershell mussel is a state threatened species and is not a federally protected species. No federal authorization is required.

Literature Cited

Clarke, A.H. 1981. The freshwater mollusks of Canada. National Museum of Natural Sciences. Ottawa. 439 pp.

Cummings, K.S., and C.A. Mayer. 1992. Field guide to freshwater mussels of the Midwest. Illinois Natural History Survey Manual 5. xiii + 194 pp.

Oesch, R.D. 1984. Missouri naiads: a guide to the mussels of Missouri. Conservation Commission of the State of Missouri. 270 pp.

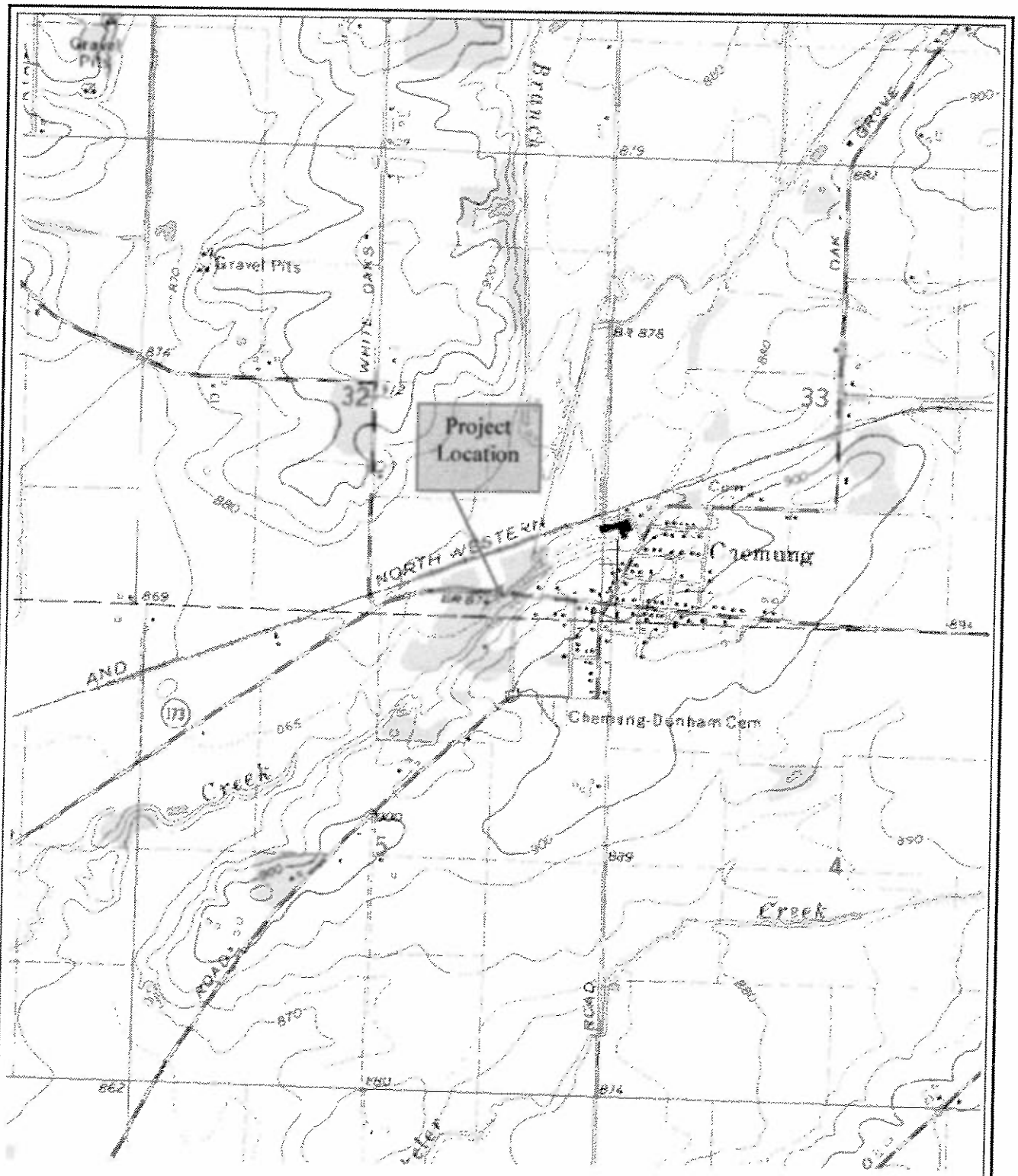

Exhibit: U.S.G.S. topographic map Becks Woods quadrangle	**Incidental Take Permit** **Slippershell Mussel** **IL Route 173 Piscasaw Creek Bridge Structure**
Client/Project: IDOT District One	CTE | AECOM

WETLAND 4
WETLAND 3
PISCASAW CREEK
WETLAND 3
PISCASAW CREEK
LOCATION OF CONSTRUCTION LIMITS
LOCATION OF SUPER SILT FENCING AND
NO INTRUSION SIGNAGE
SCALE (FEET)
0
50
100
150
200
INCIDENTAL TAKE SUBMITTAL