

Illinois Department of Natural Resources
CONSERVATION PLAN
(Application for an Incidental Take Authorization)
Per 520 ILCS 10/5.5 and 17 Ill. Adm. Code 1080

150-day minimum required for public review, biological and legal analysis, and permitting

SUBMITTED TO: Incidental Take authorization Coordinator
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
DNR.ITAcordinator@illinois.gov

PROJECT APPLICANT: Macon County
Attn: Bruce Bird, PE, County Engineer
2405 North Woodford Street
Decatur, IL 62526
(217) 424-1404

PROJECT NAME: Rea's Bridge Road Bridge Replacement
Section 14-00268-03-EG
Contract P-97-014-15

COUNTY: Macon County

AMOUNT OF IMPACT AREA: 11.18 Acre construction area.

The incidental taking of endangered and threatened species shall be authorized by the Illinois Department of Natural Resources (IDNR) only if an applicant submits a conservation plan to the IDNR Incidental Take Coordinator that meets the following criteria:

1. A description of the impact likely to result from the proposed taking of the species that would be covered by the authorization, including but not limited to -

A) Identification of the **area to be affected** by the proposed action, include a legal description and a detailed description including street address, map(s), and GIS shapefile. Include an indication of ownership or control of affected property. Attach photos of the project area.

The proposed Macon County Beltway project was processed as an Environmental Assessment with a Finding of No Significant Impacts signed January 17, 2014. A reevaluation of the FONSI is currently being conducted. The proposed project involves constructing approximately 22.5 miles of limited access, four-lane roadway around the south and east sides of Decatur. The proposed project will require approximately 582 acres of additional right-of-way. There will be in-stream work in 19 streams including Sand Creek, Finley Creek, Big Creek, Long Creek, Lake Decatur, and various tributaries of these waterways. There will be 27.3 acres of tree removal. Land cover in the area of the proposed improvement is agricultural lands with forest.

A portion of this project is now being constructed as reflected with the submittal of attached plans. The portion being constructed is Rea's Bridge and is a breakout project to replace the two bridges

across Lake Decatur along the proposed Beltway alignment. The project work includes widening 4-lanes with transitions at the ends of the project, and replacement of both bridges. The bridges are structure numbers 058-3033 and 058-3032.

This Incidental Take Authorization (ITA) only covers the bridge replacement contract and not the remainder of Macon County Beltway. The total amount right of way or temporary easement required for completion of this section of the project will be 11.18 acres. There will be in stream work to Lake Decatur. A total of 1.23 acres of tree removal will be conducted in association with the bridge replacements.

The existing bridges and causeway are in series on the alignment of CH 24 as it crosses Lake Decatur in Macon County. The two-lane, two-way structures are to be replaced with a four-lane, two-way facility. It is the widening of this facility as well as the impacts to adjacent approaches that are implicated in the incidental taking of the Kirtland Snake.

The preferred habitat for Kirtland's snakes has historically been wet prairies, wet meadows, prairie fens, and associated wetlands. These have largely been destroyed through agricultural practices and other development, and present habitat consists of open, low, grassy areas, often at the margins of streams, ponds, or ditches. A habitat assessment and survey for this project⁽¹⁾ indicates that "the large reservoirs of central Illinois may also harbor healthy populations of Kirtland's Snake, where the snakes are restricted to small areas at the water/land interface – often being found under artificial cover such as riprap.

Suitable Kirtland Snake habitat, consisting largely of loose riprap microhabitats at the land/water interface exist primarily along the existing causeway. Similar areas are also present at the abutments of the adjacent bridges and approaches. In addition, a wetland determination report⁽³⁾ for this site finds and delineates four wetland areas, including one fen in the project area.

Lake Decatur is run and maintained by the City of Decatur. Land adjacent to the Lake in the southwest quadrant of the project is owned by Archer Daniels Midland Corporation (ADM) and is utilized for water treatment processes for plant operation. Land in the northeast quadrant adjacent to the lake is owned by the Decatur Park District, with a cemetery owned by Oakley Township just east of the Park District property. Land in the southeast and northwest quadrants at the edge of the lake is owned by the City of Decatur. The balance of the properties adjacent to the project are owned by several private property holders as indicated in the included plans. The portion of the properties impacted by the construction of the project have acquired through Right Of Way acquisition methods, along with Temporary Construction Easements where required. These ROW acquisitions and Temporary Easements have already been acquired, and the shapefiles represent the construction limits of this project in which the ROW/Easements are included within.

Enclosed are photographs of the terrain within the project limits. Also enclosed are GIS shape files containing the construction limits of the project, which will outline the extents of all land disturbed by the project.

B) Biological data on the affected species including life history needs and habitat characteristics. Attach all pre-construction biological survey reports.

The information used to determine the life history needs and habitat characteristics was extracted from Appendix A of the Aquatic Survey Report for this project, included as an attachment to this document ⁽²⁾.

Little is known about the life history of the Kirtland's Snake due to its secretive nature. Historically, wet prairies, wet meadows, prairie fens and associated wetlands, especially those that were seasonally flooded and adjacent to upland areas, are the preferred habitats for Kirtland's Snakes. The primary threat to the species in Illinois is habitat destruction. Most areas suitable for this species have been destroyed by development, and there are no native remnant or roadside prairies or savannas in the project vicinity.

No Kirtland's snakes were found during the survey for this project, but there are records of the snake occurring within 0.5 miles of the site. The INHS found that it is possible for the Kirtland Snake to occur in the project limits due to the previously documented range of the snake and the continued presence of suitable habitat and microhabitat in the project area. This microhabitat consists mainly of suitable cover such as artificial riprap at the water/land interface in the project limits. Wetlands have been identified in the project vicinity, but it is the impacts to the microhabitats that have been implicated in this take.

Kirtland snakes are reported to be most active in April and May (Spring) and October (Fall) and enter hibernation in late October to early November. The snake is shy and secretive and spends most of its time below ground and under large cover objects. Anecdotal evidence suggest that they are most often surface active when temperatures are below 70 degrees F on overcast days in the spring and fall. Courtship behaviors have been observed in Illinois in the month of September. Kirtland Snakes breed in the spring.

C) Description of project activities that will result in taking of an endangered or threatened species, including practices and equipment to be used, a timeline of proposed activities, and any permitting reviews, such as a USFWS biological opinion or USACE wetland review. Please consider all potential impacts such as noise, vibration, light, predator/prey alterations, habitat alterations, increased traffic, etc.

This project involves the replacement of the existing two bridges on the causeway across Lake Decatur. These structures and causeway are located on the alignment of a larger planned Macon County Beltway project, which provides 4-lanes of highway around the east side of Decatur. The existing 2-lane causeway is being widened to 4-lanes and the new 4-lanes taper back to 2 lanes at the east and west ends where the roadway profile more easily matches the existing. The new bridges and causeway will replace the existing bridges and causeway and will be constructed along substantially the same alignment as the existing facilities. The roadway and structures will be constructed in stages, which will require sheet piling and cofferdams around the bridge abutment and piers. The construction is estimated to take 2 years to complete, with one year each required for each stage of construction. The causeway is approximately 1400' long and the new widened causeway will remain the same in length, while its existing width of 40' will be widened to approximately 110'. The total roadway construction length on Reas Bridge Road is 4275', with an additional 650' on Sangamon Road. The microhabitats of concern for impacts to the Kirtland snake consist of riprap along the land-water interface of the causeway.

The proposed facilities will have the same or similar erosion control measures as the existing facilities, consisting primarily of stone dumped A4 riprap as a permanent feature. Where appropriate, the project will also incorporate permanent vegetation including slope seed mix on unmowable slopes that do not require riprap.

Once the project is constructed, there will be the more of the same type of created microhabitats as in the existing condition. We estimate that in the existing condition there is 950 cubic yards of loose stone and riprap on the site, mostly on the exiting embankments adjacent to the Lake. As part of this project, we will be placing 5,620 cubic yards of riprap, mostly along the embankments at the water's edge. The difference in these quantities is due partly to the different geometries of the embankments. For example, the width of the causeway will more than double, requiring that much more riprap. But a lot of the riprap in the existing condition has degraded and fallen into the lake, meaning that there is less quantity to be removed than one might expect.

Additionally, the land uses of property on and adjacent to the roadway will remain the same as in the existing condition. The threat this project poses to the Kirtland Snake is not going to be the long-term destruction of suitable habitat. The threat will be short-term disturbances and impacts inflicted on individuals locally present during the construction period.

Due to the requirement to maintain traffic on CH24, the proposed construction will be phased. During the first phase of construction, traffic will be maintained on the existing lanes while the causeway is widened to the north for the new two lanes. During this period, the existing fill along the north side of the alignment will be removed and replaced with new stabilized fill. Only unsuitable material at the lake bottom will be removed and disposed offsite, whereas the remainder of the existing causeway embankment will remain and new fill added. This fill will consist of aggregate rock fill below the waterline and soil embankment above. The stabilization of this fill will include the installation of riprap on the new land-water interface on that side of the facility.

Once that phase of construction is complete, traffic will be moved to the north side of the alignment, and the construction process will be repeated on the south side of the alignment. At any given time, one half of the roadway section will be undisturbed either in the proposed or existing condition for the entire length of the project. This methodology would allow for some suitable sheltering microhabitat to always remain undisturbed in the project area during construction. However, it is noted that the area to the south of the alignment is where much of the existing riprap has degraded, and it does not have much suitable habitat in the existing condition. The area to the north of the alignment does have some suitable habitat that will not be directly impacted by construction.

Equipment used on the project will be typical earthmoving equipment such as dozers and excavators, along with cranes for bridge beam placement and pile driving equipment for the bridge substructure piling and sheet-piling for soil retention for staging purposes.

A 404 permit will be required from the USACE and is in the process of being obtained. All necessary permits or approvals from other state or federal agencies will be obtained prior to construction. Coordination was conducted with the US Fish and Wildlife Service (USFWS).

D) Explanation of the anticipated **adverse effects on listed species**;

- How will the proposed actions impact each of the species' life cycle stages?

The Kirtland Snake is a shy and secretive species that spends most of its time underground and under cover. It nests in burrows, hibernates in the winter, and breeds in the spring and summer. Its lifecycle does not include a shelled egg stage. Individuals are thought to reach maturity in their second year, and their longevity is unknown.

This project will temporarily remove microhabitats suitable for cover, nesting, hibernation, and breeding. Activities like sheet piling and cofferdam installation will have less of an impact on the species than the removal of riprap or the possibility of roadkill. There is potential of roadkill by heavy machinery, mostly through excavation and embankment placement activities due to causeway widening. While it is unlikely that take of the Kirtland's snake would occur in the water, the possibility exists and has been included.

The construction season is largely outside the hibernation period, but spring construction may affect the breeding season and impact young and immature individuals. Spring and summer are the active season for this species. Individual snakes that may be traversing or utilizing the project area during construction may be directly impacted. However, since the vulnerable period likely covers the entire first year of the snake's development, there are no seasonal adjustments in construction that would mitigate impacts to these individuals during this period.

- Describe potential impacts to individuals and the population. Include information on the species life history strategy (life span, age at first reproduction, fecundity, recruitment, survival) to indicate the most sensitive life history stages.

The Kirtland Snake is a relatively small species that grows to about 18 inches adult length. It is not venomous and tends to hide and/or flee when faced with an imminent threat. If a Kirtland Snake is present in the riprap along this project during the construction period, it will seek cover and hide. It is unlikely that construction personnel will notice and identify that individual, and it is likely to be negatively impacted by construction activities. Nonetheless, note that construction will be phased so that at any given time one half of the roadway section will be undisturbed either in the proposed or existing condition for the entire length of the project. This methodology would allow for some suitable sheltering microhabitat to always remain undisturbed in the project area during construction and should help mitigate the possibility of negative impacts.

- Identify where there is uncertainty, place reasonable bounds around the uncertainty, and describe how the bounds were determined. For example, indicate if it is uncertain how many individuals will be taken, make a reasonable estimate with high and low bounds, and describe how those estimates were made.

The Illinois Natural Heritage Database contains no records for Illinois Natural Area Inventory Sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project. There are no native remnant or roadside prairies, or savannas in the vicinity.

The habitat assessment for this project was performed by an experienced INHS herpetologist during the active season for the Kirtland Snake. No Kirtland's snakes were found during the survey for this project, but there are records of the snake occurring within

0.5 miles of the site. The INHS found that it is possible for the Kirtland snake to occur in the project limits due to the previously documented range of the snake and the continued presence of suitable habitat and microhabitat in the project area. This microhabitat consists mainly of suitable cover such as artificial riprap at the water/land interface in the project limits. Wetlands have been identified in the project area, but it is the impacts to suitable microhabitats that have been implicated in this take.

The lower bound of our estimate of impacts is that no individuals will be impacted. We estimate that five individuals may be taken. That number represents the non-zero chance that at least one individual is present in the project limits, and that that individual was at one time part of a nesting brood in the near vicinity. Our estimate of a taking is that 1-5 individuals may be taken.

The new widened causeway area between the proposed ROW limits is 7.4 acres but that includes much of the underwater land as well. Of the new right of way required for the project, 7.4 of the 11.18 acres is the new causeway. This area, specifically the water is not suitable habitat for the Kirtland's snake. While the snake may utilize the water at times, it is not the main or sole habitat. All of this area was included in the Environmental Survey Request Limits and these limits were the limits utilized during the preconstruction survey.

The INHS Report included as Appendix (X) states that "The majority of the Environmental Survey Request Area (ESR) consists of lentic Lake Decatur. There is shoreline habitat on the eastern and western terminus of the project area, as well as a manmade causeway between structures 058-3032 and 058-3033. The western limit of the project area is upland mixed residential and industrial use. On the eastern end there are small gravel parking lots for fishermen on both sides of Rea's Bridge Road. Shoreline habitat is riprap on the eastern shore and causeway and poured concrete on the western edge." The photographs in this report noted that the western shoreline is poured concrete and there are no loose bank stabilization materials to search under. This would be considered not suitable or minimal low- quality habitat.

Within the current, existing Right of Way, a large majority is roadway pavement and mixed- use approach termini. The roadway pavement is not suitable, and the causeway and shoreline riprap are considered low quality habitat. The existing causeway above water is 2.6 acres and should be considered in the identification of suitable habitat within the project construction limits that will be impacted. The amount of new Right of Way, land acquisition and or temporary easement for the widening of the Eastern terminus will be 1.1 acres and this area should be considered in any impact calculations. The 0.2 acres of wetland impacts are also included in the 1.1 are total.

Given the records of occurrence for the Kirtland's snake along Star Route Road, and the information in the INHS herpetology report, as well as the INHS wetland delineations, it seems most likely that in addition to the causeway, the eastern terminus would be the most likely area where the Kirtland's snake could be encountered.

For the purposes of the Interagency Wetlands Policy Act, wetlands were not identified as having the presence of a listed species or its habitat. This is because there are no records in this area, the closest is 0.5 miles North of the project, and in addition, the pre-construction survey did not find Kirtland's snake or any listed species. The project has 0.2 acres of wetland impact. There is one site, which is a seep and will be completed avoided and not be impacted. Wetland impacts have already been mitigated at the IDOT LaGrange

Wetland Mitigation Bank in the amount of 0.6 acres of wetland credits. For the purposes of take which is incidental to the proposed project however, wetlands, specifically wet prairies are listed as suitable and preferred habitat for the species. Therefore, the species *could* occur there. As such, with these 0.2 acres of wetland impacts, there is the possibility for a take in these areas during construction.

Therefore, the existing causeway of 2.6 acres, and the land acquisition/temporary easement/ acreage for widening on the Eastern terminus of the project of 1.1 acres bring the total amount of habitat impacts to 3.7 acres.

2) Measures the applicant will take to minimize and mitigate that impact and the funding that will be available to undertake those measures, including, but not limited to -

A) Plans to **minimize the area affected** by the proposed action, the estimated **number of individuals** of each endangered or threatened species that will be taken, and the **amount of habitat** affected (please provide an estimate of area by habitat type for each species).

The existing microhabitat impacted by this project are part of the facility to be replaced. There is no way to replace the facility without also replacing the riprap along its length, but similar microhabitat that is not part of the roadway will be left undisturbed. While the riprap microhabitat will be temporarily impacted during construction, the final design plans call for more microhabitat for the Kirtland's snake than in the existing condition.

If there are any individual Kirtland Snakes present in the existing microhabitat during the construction period, there will be no practicable way to find and protect those individuals. As noted previously, the construction phasing will occur in stages that will allow for some sheltering microhabitat to remain undisturbed along the entire length of the alignment for the duration of construction. This should mean that any snakes that escape the disturbances should be able to find suitable shelter close by.

The project footprint and construction limits has been minimized as much as possible and all work will be conducted within the Environmental Survey Request Limits.

B) **Plans for management of the area** affected by the proposed action that will enable continued use of the area by endangered or threatened species by maintaining/re-establishing suitable habitat (for example, native species planting, invasive species control, use of other best management practices, restored hydrology, etc.).

The microhabitat to be impacted are part of the man-made structures to be replaced. That facility will continue in operation and will be maintained as it has been for the foreseeable future. No additional special consideration is required. The continued operation of the reservoir, bridges, and causeway will continue to provide similar habitat for the Kirtland Snake.

In addition, refuge areas associated with the remainder of the Lake Decatur shoreline will continue to be available during construction and into the foreseeable future. Included in those possible refuge areas are the small, delineated wetlands in the project area that will remain undisturbed to the greatest extent practicable, in keeping with the Wetland Policy.

The wetlands must be protected from sediment and siltation from direct runoff from the construction zone, and so will be separated from disturbed areas with standard BMPs such as perimeter erosion barrier (silt fence). While the primary purpose of these measures is to prevent

direct runoff and tracking from the site, it is commonly used as simple way to visibly demark the limits over which construction crews do not traverse. It will also serve as a suitable barrier preventing snakes from entering the construction zone from the wetlands.

C) Description of **all measures to be implemented to avoid, minimize, and mitigate** the effects of the proposed action on endangered or threatened species.

- Avoidance measures include working outside the species' habitat.

The species microhabitat to be impacted is part of a manmade structure to be replaced. In other words, the riprap is part of the bridges and causeway. However, the replacement facilities will include similar riprap treatment. While there is no way to avoid impacting the existing riprap features during construction, this project will result in larger extent of similar stone base and riprap armor as in the existing condition.

While primary species habitat impacts are not implicated in this taking, several wetland areas have been identified and delineated in the project area. Those wetlands include a seep that seems appropriate for the Kirtland Snake. That seep is protected by policy and impacts to that seep are avoided entirely. Impacts to the remaining wetlands are minimized, specifically by winding the proposed alignment of Sangamon Road (the frontage road to the south of CH24) between the delineated wetlands.

The plans call for the installation of perimeter erosion barrier at the limits of disturbance wherever runoff might track onto adjacent property. The roadway as it approaches the bridge is generally the highest feature in the immediate landscape, and so silt fence is to be installed along the length of the bridge approaches. In addition, the wetlands must specifically be protected from direct runoff and tracking. Impact mitigation such as perimeter barrier is required to be installed before any other construction activities occur. The perimeter barrier generally serves as the demarcation over which construction crews do not traverse and will thus serve as additional protection against the inadvertent disturbance of the wetlands and the primary habitat for the Kirtland's snake.

- Minimization measures include timing work when species is less sensitive, reducing the project footprint, or relocating species out of the impact area.

As part of the construction phasing, a maximum of one-half of the project area will be disturbed at one time. That half will require stabilization, which includes the installation of riprap and the incidental creation of microhabitat suitable for the snake.

Because of the required construction phasing, the project provides for refuge areas in proximity to any areas to be disturbed as that disturbance occurs. These refuge areas include new or existing riprap on that portion of the project that is not in an active construction phase as well as riprap along the shore in the immediate vicinity of CH24 that will remain undisturbed.

Since this project uses riprap as the primary method of erosion control at the land/water interface, this project avoids the use of erosion control blanket in those areas. The choice of treatment is primarily driven by the slopes on the proposed construction, but it does have some species conservation benefits. Erosion control blanket has been known to trap and kill larger snakes that become ensnared the blanket loops. Using riprap avoids this problem. Although rip rap is the predominant method of erosion control, blanket loop

erosion control blanket is proposed for use in areas of the project where riprap simply isn't possible to implement. There is a small chance for take in these areas. The proposed erosion control treatment is included in the attached construction plans.

Silt fence shall be utilized on the perimeter of the construction zone, which will minimize impacts to land outside of the identified construction limits and thus minimize impacts to wetlands which were not shown as impacted in the construction plans. One wetland not impacted by construction is the Wetland W5 seep, and the silt fence will assist in avoiding impacts to this wetland. Silt fencing will also reduce the potential for an increase in impacts to wetlands already identified to be impacted, as some only have a portion of the wetland impacted. The impacts to wetlands have been identified as 0.2 acres, and those impacts will be banked at the IDOT's LaGrange site. Commitments have also been added to the construction plan's General Notes sheet to inform the Contractor of the presence of both the Kirtland Snake as well as the Wetlands.

- Mitigation is additional beneficial actions that will be taken for the species such as needed research, conservation easements, propagation, habitat work, or recovery planning.

See below proposed mitigation measures.

- It is the applicant's responsibility to propose mitigation measures. IDNR expects applicants to provide species conservation benefits 5.5 times larger than their adverse impact.

Macon County Highway Department has been notified of a research opportunity to study the Kirtland's snake. The research aims to bring about much beneficial knowledge about the population(s) of Kirtland's snake surrounding the greater Lake Decatur and Sangamon River area in regards to how the species is using the available habitats. The species is known to occur at several locations within the area and the study also allows for the use of habitat modeling to identify new locations in the area where the Kirtland's snake may occur. The opportunity exists through the contract that the Illinois Department of Transportation has with the Illinois Natural History Survey Biotic Survey and Assessment Program.

This research is consistent with species needs and SWG Grants that have been approved by the Illinois Department of Natural Resources and is further discussed in a separate document prepared by the Illinois Natural History Survey Biotic Survey and Assessment Program. IDOT's support of this Kirtland's snake research is valued at \$4,926.37.

D) Plans for monitoring the effects of the proposed actions on endangered or threatened species, such as monitoring the species' survival rates, reproductive rates, and habitat before and after construction, include a plan for follow-up **reporting to IDNR**. Monitoring surveys should be targeted at reducing the uncertainty identified in Section 1.d.

The Macon County Highway Department will conduct or cause to be conducted a 2-yr post construction survey for the Kirtland's snake. The County will notify the IDOT Natural Resource Unit when the project construction is complete so that the Illinois Natural History Survey can be tasked with the field work. The post construction survey for the Kirtland's snake will utilize the same methodology as the pre-construction survey. A copy of the post construction survey will be provided to IDNR upon completion.

E) Adaptive management practices that will be used to deal with changed or unforeseen circumstances that may affect the endangered or threatened species.

- Adaptive management is a way to make decisions in the face of uncertainty by monitoring the uncertain element over time and adjusting to the new information. Adaptive management requires identifying objectives and uncertainties, thinking through a range of potential outcomes, developing triggers that will lead to different actions being taken, and monitoring to detect those triggers.

Management and stewardship programs protecting the Kirtland's Snake typically involve avoiding or managing activities that increase mortality in the species. These would typically include:

- Mowing management programs that avoid times high snake activity. There is a very limited amount of mowing in the vicinity of this project, and no mowing will occur in the wetlands.
- Controlled burn programs that minimize risk to snakes. This is not feasible here.
- Traffic management programs that slow traffic and reduce roadway mortality. The staged construction will also allow for some protective microhabitat to remain undisturbed on site during all stages of construction.
- Natural cover programs that limit the removal of debris or that artificially provide debris that would act as cover for the species. This project will specifically introduce about 5.5 times more cover than it will cause to be removed.
- Managing activities that would compact the soil or change the hydrology on ways that would affect the prevalence of the loose, moist soil that this species requires. This is not applicable to this site.
- Managing environmental contaminants through best management practices outlined in the NPDES SWPPP, such as spill prevention and control, stockpile management, dewatering methods chemical treatment restrictions. The Contractor is required to state how they plan on minimizing environmental contaminants in their Contractor Certification Statement.
- Monitoring programs that continually assess the health of local populations. The City of Decatur will conduct a 2-year post construction survey that will serve as a benchmark for assessing the health of any population identified.

This is a construction project that consists mostly of bridges and armored causeway across otherwise open water. Many of these types of practices are not feasible to implement or do not apply to this project. These typical management practices generally do not apply. For example, there is no mowing program or controlled burn program that would make sense here. There is no known local population to monitor. There is no evidence of a roadway mortality problem in this area and it appears unlikely that snakes will cross these facilities because there is generally no natural cover adjacent to the roadway that is being constructed.

- Consider environmental variables such as flooding, drought, and species dynamics as well as other catastrophes. Management practices should include contingencies and specific triggers. Note: Not foreseeing any changes does not qualify as an adaptive management plan.

Lake Decatur is a manmade reservoir. The Lake discharge is increased as necessary to keep the lake level consistent, regardless of what the incoming pulses may look like in the case of large flooding events. This ability will serve to protect the site from unexpected lake flooding during construction. In addition, the site construction BMPs to be maintained during construction are sized for the 10-yr event per standard and require inspection and repair on a regular schedule and following any storm event. Flooding is the only unusual natural disaster considered to have any significant chance of occurring at this site.

F) **Verification that adequate funding exists** to support and implement all minimization and mitigation activities described in the conservation plan. This may be in the form of bonds, certificates of insurance, escrow accounts, or other financial instruments adequate to carry out all aspects of the conservation plan.

This project is funded by a mix of federal (MPO and Earmarks), Motor Fuel Tax (MFT), and local County Bridge Funds.

3) A description of alternative actions the applicant considered that would reduce take, and the reasons that each of those alternatives was not selected. A **“no-action” alternative** shall be included in this description of alternatives. Please describe the economic, social, and ecological tradeoffs of each action.

- Consideration of **alternative actions** is an important tool in conservation planning as it allows for thinking of other options and evaluating the potential outcomes in terms of all relevant objectives. However, to be useful it requires creativity in developing alternatives and systematic analysis in evaluating the alternatives. In evaluating alternatives, describe the economic, social, and ecological tradeoffs of each

Among the alternatives considered were:

Do nothing

This option involves not making improvements to Reas Bridge Road and allowing the structure to stay in place as is. The bridges and causeway are in an advanced state of deterioration now, would continue to deteriorate under this option, and would not be able to handle the current congestion and projected traffic loads that necessitated the construction of a 4-lane facility at this location. At the very least, these structures would have to be replaced in kind, which would have a very similar probability of a take as the currently proposed project does.

Build the crossing at a different location

The choice of Reas Bridge Road is relatively economical because it involves the improvement of an existing facility. A completely new facility would involve much greater impacts to the Lake and to adjacent Land Uses.

Similarly, there are other existing crossings of Lake Decatur. For example, there is County Highway 105 to the south, and US Route 36 even further south. In general, these crossings do not make sense relative to the larger Beltway Project and would involve similar impacts to the Lake as the proposed crossing does. Similarly, an additional crossing could be constructed at a completely new location at much greater economic cost.

Build the crossing as proposed

The crossing as proposed has been selected as consistent with the purpose and need for the larger Macon County Beltway loop. It allows for reasonable access to the City from the southern and eastern regions, while at the same time allowing for a reasonable bypass of the main City Center for traffic from Interstate 72. The economic and social benefits to this route are substantial, especially for the regions to the south and east of the lake. At the same time, the cost of this route is relatively modest economically. This option also uses a facility that needs to be replaced in any case due to the deteriorated state of the bridges, the inability of the current bridges to handle existing congestion and expected future traffic, and the need to maintain reasonable connectivity between downtown Decatur and the regions to the south and east of Lake Decatur.

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

The Kirtland Snake is confined to the Midwestern United States, with a range centering in Illinois, Indiana, and Ohio, but also including Michigan and Kentucky. Its total population is unknown, but they likely number at least a few thousand adults. There are 31 records for the species in Illinois, with two of those records occurring within 0.5 miles of Rea's Bridge. If present, the species will continue to persist at this site because the threat this project poses to the Kirtland Snake is not going to be the long-term destruction of suitable habitat. The threat will be short-term disturbances and impacts inflicted on individuals locally present during the construction period. Additionally, the populations at the 29 other locations will not be impacted by this project. Therefore, the project will not jeopardize the populations and species presence in the State of Illinois.

As noted earlier, the threat of this project does not involve primary habitat destruction. This project does not affect the prevalence and availability of the moist soils that the snake requires. This taking is based on the possibility that individuals locally present may be impacted during the construction period because of the temporary disturbance of loose available groundcover. This level of impact is unlikely to reduce the likelihood of the survival of the species.

5) An implementing agreement, which shall include, but not be limited to (on a separate piece of paper containing signatures):

- A) Names and signatures of all participants in the execution of the conservation plan;
- B) The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the IDNR;
- 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;
- D) Assurance of compliance with all other federal, State and local regulations pertinent to the proposed action and to execution of the conservation plan;
- E) Copies of any final federal authorizations for a taking already issued to the applicant, if any.

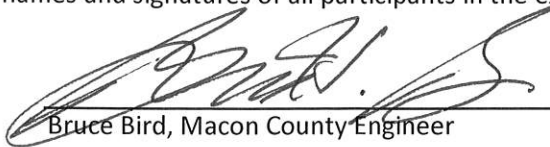
ENDNOTES:

- 1 Habitat Assessment and Survey for Kirtland's Snake, *Clonophis kirtlandii*, along Reas Bridge Road (CH 24) over Lake Decatur in Macon County, Illinois, IDOT Sequence No. 13921, IDOT Structure Nos. 058-3032 & 058-3033, Andrew R. Kuhns, INHS/IDOT Statewide Biological Survey and Assessment Program, 20:16, June 2020.
- 2 Natural History of Kirtland's Snake, *Clonophis kirtlandii*, and Lined Snake, *Tropidoclonion lineatum*, Listed as Threatened and Endangered in the State of Illinois, Appendix A, INHS/IDOT Statewide Biological Survey and Assessment Program Report 20:16, (1).
- 3 Wetland Determination Report, Macon County Beltway – Addendum G, Macon County, Illinois, IDOT Sequence No. 13921G, Jason Bried et al, INHS/IDOT Wetland Science Program, June 2020

5. Implementing Agreement For Conservation Plan

State-threatened Kirtland Snake, which inhabit the region in the vicinity of the proposed Reas Bridge Road Bridge Replacement Project near Decatur, IL in Macon County, IL.

- A) the names and signatures of all participants in the execution of the conservation plan;


Bruce Bird, Macon County Engineer

5/19/21
Date

- B) the obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the conservation plan and a schedule for preparation of progress reports to be provided to the Department;

This Agreement will be between the Local Agency, identified as the Macon County Highway Department, and the Department of Natural Resources (IDNR). IDNR is responsible for the review of this Conservation Plan and for subsequent issuance of the Incidental Take Authorization. The Local Agency, the Macon County Highway Department, is responsible for securing authorization for the incidental take; securing all permits and biological clearances, including Section 404, Section 401, 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 during construction (i.e. minimization via staged construction, minimizing impacts to wetlands and various other avoidance and minimization construction methods as detailed) and after construction is completed (i.e. monitoring and/or identifying Kirtland Snakes in the construction footprint).

Construction is estimated to begin in the Spring of 2022 and be completed in approximately 2 years. Progress reports will be provided to IDNR within 90 days of each monitoring event.

- 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;

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

APPENDICES:

1. Construction Plans
2. Habitat Assessment Report
3. Wetland Determination Report
4. Maps and Location Exhibits
5. Photographs
6. GIS Shape Files of Construction Limits (Digital)
7. IDOT Cultural Clearance Memo
8. USACOE Nationwide Permit #14
9. INHS Research Proposal

PLEASE SUBMIT TO:

**Incidental Take Authorization Coordinator,
Illinois Department of Natural Resources,
Division of Natural Heritage,
One Natural Resources Way,
Springfield, IL, 62702**

OR

DNR.ITAcoordinator@illinois.gov

July 2016

APPENDIX 1 – Construction Plans

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7355	14-00268-03-EG	MACON		1
		ILLINOIS	CONTRACT NO.	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

CH 24 – FAU 7355 (REAS BRIDGE ROAD)
SECTION 14-00268-03-EG
PROJECT
TYPE of IMPROVEMENT
MACON COUNTY

C-9x-xxx-xx

PROPOSED STRUCTURE
STA 33 + 69.00
PROPOSED STRUCTURE NO. 058-3409
EXISTING STRUCTURE NO. 058-3033

INDEX OF SHEETS

- 1 COVER SHEET
- 2 GENERAL NOTES AND SPECIFICATIONS
- 3 HIGHWAY STANDARDS AND APPLICATION RATES
- SUMMARY OF QUANTITIES
- TYPICAL SECTIONS
- SCHEDULE OF QUANTITIES
- ALIGNMENT, TIES AND BENCHMARKS
- REMOVAL PLAN
- PLAN AND PROFILE CH 24 (REAS BRIDGE ROAD)
- PLAN AND PROFILE SANGAMON ROAD
- STORM SEWER NOTES
- TRAFFIC CONTROL AND STAGING
- GRADING PLANS
- STRUCTURE PLANS - EAST BRIDGE
- STRUCTURE PLANS - WEST BRIDGE
- MISCELLANEOUS DETAILS
- CROSS SECTIONS - CH 24 (REAS BRIDGE ROAD)
- CROSS SECTIONS - SANGAMON ROAD



FUNCTIONAL CLASSIFICATION –RURAL MINOR ARTERIAL
2016 ADT = 2500
P.V.=94% S.U.=4% M.U.=2%

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED _____ 20 _____
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

_____ 20 _____
ENGINEER OF DESIGN AND ENVIRONMENT

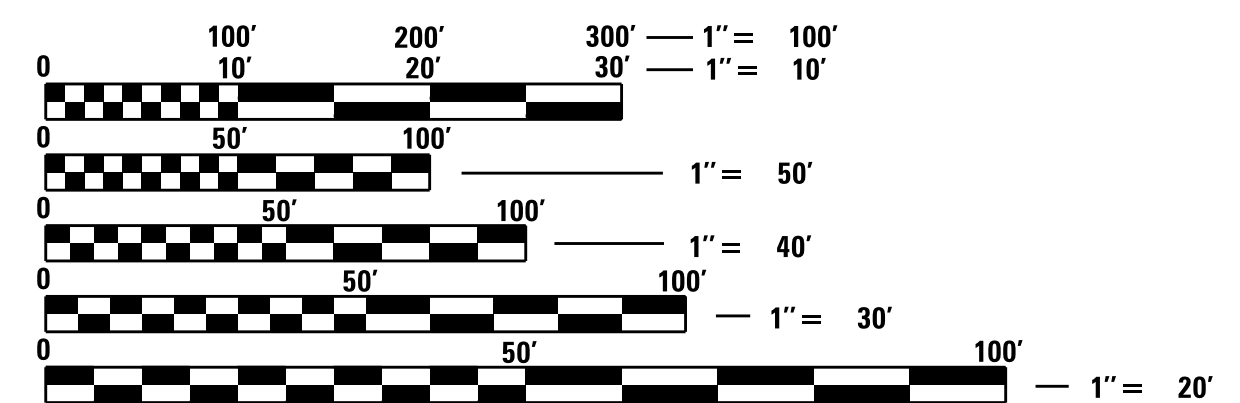
_____ 20 _____
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER



PROPOSED STRUCTURE
STA 44 + 05.50
PROPOSED STRUCTURE NO. 058-3408
EXISTING STRUCTURE NO. 058-3032

PROJECT ENDS
STA 59 + 25

PROJECT BEGINS
STA 16 + 50



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

LOCATION MAP

GROSS LENGTH = 4,275 FT. = 0.810 MILE
NET LENGTH = 4,275 FT. = 0.810 MILE

NOT FOR CONSTRUCTION

CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
DECATUR (217) 422-8544
SCHAUMBURG (773) 714-0050
ROCKFORD (815) 489-0050
184-001397

GENERAL NOTES

1. REFERENCES TO THE "SSRB" SHALL BE INTERPRETED AS REFERENCES TO THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED APRIL 1, 2016. COPIES OF THESE SPECIFICATIONS CAN BE PURCHASED FROM THE FOLLOWING ORGANIZATION:
ILLINOIS DEPARTMENT OF TRANSPORTATION
2300 S. DIRKSEN PARKWAY
SPRINGFIELD, IL 62764
<http://www.idot.illinois.gov/home/resources/Manuals/Manuals-and-Guides>
2. ILLINOIS DEPARTMENT OF TRANSPORTATION HIGHWAY STANDARDS, WITH THE REVISION NUMBERS SHOWN IN THE STANDARDS LIST, SHALL APPLY TO THIS CONTRACT.
3. THE DESIGN ENGINEER SHALL NOT GUARANTEE THE WORK OF ANY CONTRACTOR OR SUBCONTRACTOR, SHALL HAVE NO AUTHORITY TO STOP WORK, SHALL HAVE NO SUPERVISION OR CONTROL AS TO THE WORK OR PERSONS DOING THE WORK, SHALL NOT BE RESPONSIBLE FOR SAFETY IN, ON, OR ABOUT THE JOB SITE OR HAVE ANY CONTROL OF THE SAFETY OR ADEQUACY OF ANY EQUIPMENT, BUILDING COMPONENT, SCAFFOLDING, SUPPORTS, FORMS OR OTHER WORK AIDS, AND SHALL HAVE NO DUTIES OR RESPONSIBILITIES IMPOSED BY ACTS GOVERNING THE WORKPLACE. IN ADDITION, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SHALL BE MODIFIED AS FOLLOWS:

UNDER ARTICLE 105.01, ADD THE FOLLOWING SENTENCE: NOTHING CONTAINED HEREIN SHALL RELIEVE THE CONTRACTOR OF HIS/HER DUTY TO OBSERVE AND COMPLY WITH ALL APPLICABLE LAWS, NOR SHALL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S COMPLIANCE OR NON-COMPLIANCE WITH SUCH LAWS.

UNDER ARTICLE 107.01, ADD THE FOLLOWING SENTENCE: THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S DUTY TO OBSERVE AND COMPLY WITH THE PROVISIONS OF THIS SECTION, OR FOR THE CONTRACTOR'S FAILURE TO DO SO.
4. THE CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS INCLUDES SAFETY OF ALL PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE COUNTY AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCE AND PROCEDURES OF CONSTRUCTION.
6. THE TERMS "PLACE", "CONSTRUCT" AND "INSTALL" SHALL BE INTERPRETED TO MEAN "FURNISH ALL EQUIPMENT, MATERIAL AND LABOR TO COMPLETE THE WORK".
7. ALL CONTRACTORS WORKING WITHIN THE CITY OF DECATUR MUST BE LICENSED AND BONDED WITH THE CITY OF DECATUR.
8. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). THE PROPOSED GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND STATION CROSS-SECTIONS ARE THE ELEVATIONS FOR THE FINISHED SURFACE AT LOCATIONS AS INDICATED.
9. ALL COORDINATES SHOWN ARE BASED ON THE ILLINOIS COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2004 (NAD1983).
10. THE PLAN DIMENSIONS WERE DETERMINED FROM EXISTING PLANS AND FIELD SURVEYS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND EXISTING SITE CONDITIONS PRIOR TO BIDDING.
11. ENTRANCE RADII DIMENSIONS SHOWN ON PLAN SHEETS ARE TO EDGE OF PAVEMENT, ALL OTHER RADII SHOWN ON PLAN SHEETS ARE TO EDGE OF PAVEMENT.
12. ALL PAVEMENT ELEVATIONS SHOWN ARE AT EDGE OF PAVEMENT UNLESS OTHERWISE INDICATED.
13. STATION, OFFSET, AND ELEVATIONS OF CONCRETE PIPE CULVERTS ARE AT THE POINT OF CONNECTION TO THE FLARED END SECTION.
14. THE LOCATIONS OF THE EXISTING UNDERGROUND UTILITIES WERE OBTAINED FROM RECORDS AND FIELD SURVEYS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UNDERGROUND UTILITY LOCATIONS PRIOR TO EXCAVATION FOR THE PROJECT.
15. BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "J.U.L.I.E." AT 1-800-892-0123 FOR FIELD LOCATIONS FOR BURIED ELECTRIC, TELEPHONE AND GAS FACILITIES (48 HOURS NOTIFICATION IS REQUIRED). THE CITY OF DECATUR SHALL BE CONTACTED FOR FIELD LOCATIONS OF WATER MAIN AND SANITARY SEWER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE UTILITY RELOCATION WORK WITH RESPECTIVE UTILITY OWNERS TO AVOID PROJECT DELAY.
16. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH AFFECTED UTILITY COMPANIES.
17. PAYMENT FOR OVERHAUL WILL NOT BE MADE FOR EARTH MOVED TO OR FROM ANY SOURCE.
18. ALL DISTURBED AREAS SHALL BE SMOOTHED, SEEDED, AND FERTILIZED USING SEEDING CLASS 2 (SPECIAL) - SEE SPECIAL PROVISIONS. CONTRACTOR SHALL REMOVE ALL CONSTRUCTION RESIDUE UPON COMPLETION OF THE WORK.
19. BARRICADES: THE CONTRACTOR SHALL PROVIDE AND INSTALL TWO (2) WEIGHTED SAND BAGS ON EACH TYPE I OR TYPE II BARRICADE USED - ONE (1) WEIGHTED SAND BAG ACROSS EACH BOTTOM RAIL.
20. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY ACCESS TO ALL PRIVATE AND COMMERCIAL PROPERTIES. ACCESS TO COMMERCIAL PROPERTIES SHALL REMAIN OPEN CONTINUOUSLY. ACCESS TO PRIVATE PROPERTIES SHALL NOT BE CLOSED FOR MORE THAN 8 HOURS. THE CONTRACTOR SHALL NOTIFY PRIVATE RESIDENTS A MINIMUM OF 24 HOURS IN ADVANCE OF ACCESS CLOSURE. MAINTAINING THE TEMPORARY ACCESS SHALL INCLUDE RELOCATING AND/OR REGRADING THE AGGREGATE SURFACE FOR ANY OPERATION THAT MAY DISTURB OR REMOVE THE TEMPORARY ACCESS. THE SAME TYPE AND GRADATION OF MATERIAL USED TO CONSTRUCT THE TEMPORARY ACCESS SHALL BE USED TO MAINTAIN IT. THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON FOR AGGREGATE FOR TEMPORARY ACCESS. QUANTITY SHOWN IS ESTIMATED.
21. THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON COUNTY, CITY OR PRIVATE PROPERTY WITHOUT WRITTEN PERMISSION.

COMMITMENTS

1. TREE CLEARING RESTRICTION:
TREES THREE INCHES OR GREATER IN DIAMETER AT BREAST HEIGHT SHALL NOT BE CLEARED FROM APRIL 1 THROUGH SEPTEMBER 30TH.
2. ENDANGERED SPECIES - KIRTLAND SNAKE:
THE ENDANGERED KIRTLAND SNAKE MAY HAVE HABITAT WITHIN THE LIMITS OF CONSTRUCTION. AN INCIDENTAL TAKE AUTHORIZATION (ITA) HAS BEEN OBTAINED FROM THE IDNR AND SHALL BE ON SITE WITH THE CONTRACTOR AND RESIDENT ENGINEER AT ALL TIMES. ALL COMMITMENTS AND RESTRICTIONS OUTLINED IN THE FINAL SIGNED ITA MUST BE ADHERED TO AT ALL TIMES.
3. WETLAND IMPACTS:
WETLANDS ARE DELINEATED WITHIN THE PROJECT LIMITS. IMPACTS TO THESE AREAS BY THE CONTRACTOR SHALL BE MINIMIZED AS MUCH AS POSSIBLE. WETLAND W5 IS CATEGORIZED AS A SEEP AND SHALL UNDER NO CIRCUMSTANCES BE IMPACTED BY CONSTRUCTION ACTIVITIES, AND THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS WHEN IN THE VICINITY OF THIS PARTICULAR WETLAND.

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PLOT DATE =	DATE -	REVISED -

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SCHAUMBURG (773) 714-0950
ROCKFORD (815) 489-0050
184-001397

**GENERAL NOTES AND SPECIFICATIONS
CH 24 (REAS BRIDGE ROAD)**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7355	14-00268-03-EG	MACON		
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

HIGHWAY STANDARDS


APPLICATION RATES

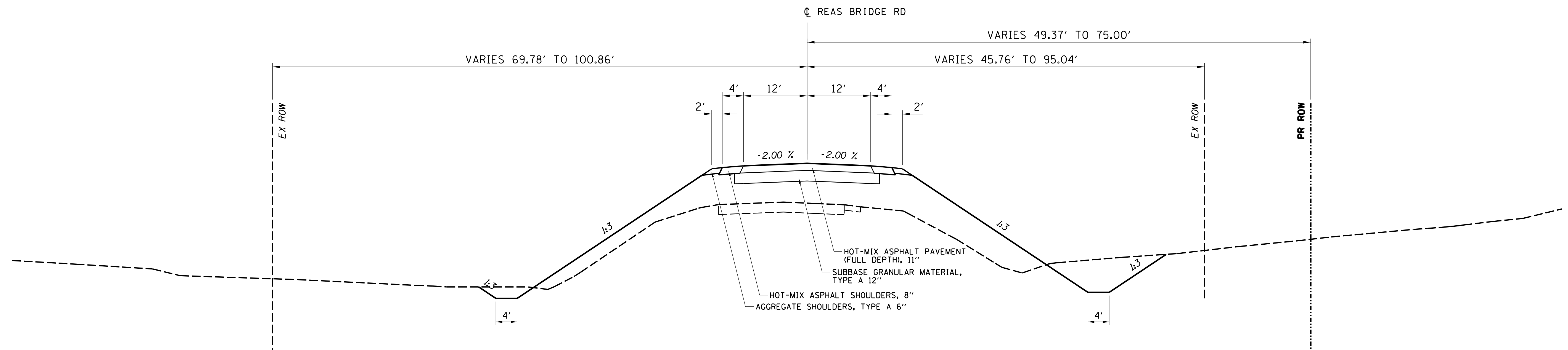
000001-06	STANDARD SYMBOLS ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420401-12	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB
424001-10	PERPENDICULAR CURB RAMPS FOR SIDEWALKS
515001-03	NAME PLATE FOR BRIDGES
542301-03	PRECAST REINFORCED CONCRETE FLARED END SECTION
542401-03	METAL FLARED END SECTIONS FOR PIPE CULVERTS
602301-04	INLET TYPE A
602306-03	INLET TYPE B
602401-04	PRECAST MANHOLE TYPE A 4' DIAMETER
602402	PRECAST MANHOLE TYPE A 5' DIAMETER
602701-02	MANHOLE STEPS
604006-05	FRAME AND GRATE TYPE 3
604036-03	GRATE TYPE 8
606001-07	CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
606301-04	PC CONCRETE ISLANDS AND MEDIANS
630001-12	STEEL PLATE BEAM GUARDRAIL
630301-08	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631031-15	TRAFFIC BARRIER TERMINAL, TYPE 6
642006	SHOULDER RUMBLE STRIPS, 8 In.
664001-02	CHAIN LINK FENCE
666001-01	RIGHT OF WAY MARKERS
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701011-04	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701101-05	OFF-RD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
701201-04	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS GREATER THEN 45 MPH
701321-17	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-04	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
701901-07	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
720001-01	SIGN PANEL MOUNTING DETAILS
720006-04	SIGN PANEL ERECTION DETAILS
720011-01	METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
725001-01	OBJECT AND TERMINAL MARKERS
729001-01	APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)
780001-05	TYPICAL PAVEMENT MARKINGS
781001-04	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
782001-01	CURB REFLECTORS
782006	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

TEMPORARY SEEDING	100 LBS/ACRE (2 APP)
NITROGEN FERT. NUTRIENT	90 LBS/ACRE
PHOSPHOROUS FERT. NUTRIENT	90 LBS/ACRE
POTASSIUM FERT. NUTRIENT	90 LBS/ACRE
MULCH METHOD	2.0 TON/ACRE
GRANULAR MATERIALS	2.0 TON/CU YD
BITUMINOUS MATERIALS (PRIME COAT)	0.25 LBS/SQ FT (ON AGG)
BITUMINOUS MATERIALS (TACK COAT)	0.08 LBS/SQ FT RESIDUAL (ON MILLED SURFACE)
BITUMINOUS MATERIALS (TACK COAT)	0.04 LBS/SQ FT RESIDUAL (FOG COAT BETWEEN LIFTS)
BITUMINOUS MATERIALS (TACK COAT)	0.05 LBS/SQ FT (ON PVMT)
HOT-MIX ASPHALT SURFACE/BINDER	112 LBS/SQ YD/IN

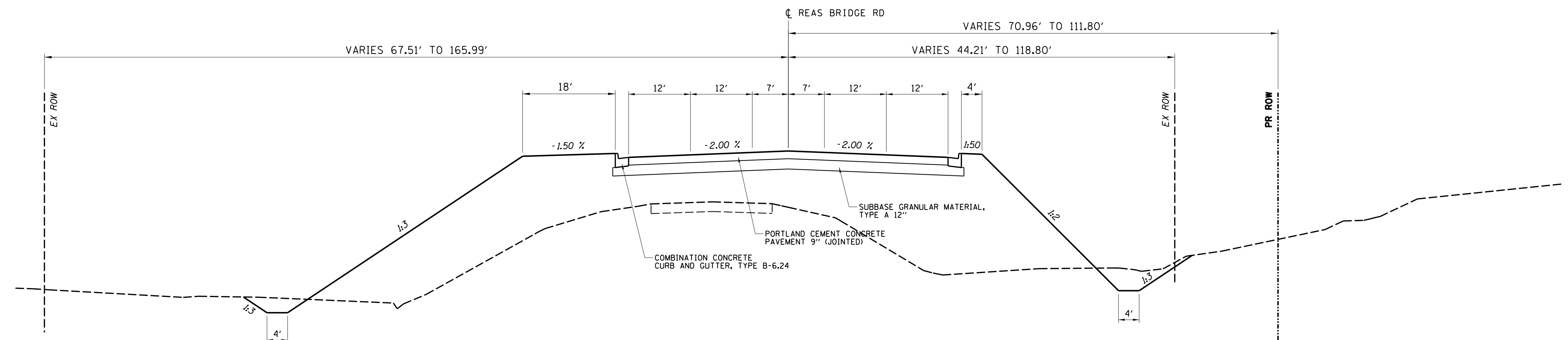
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USER NAME =	DESIGNED -	REVISED -		DECATUR (217) 422-8544 SCHAUMBURG (773) 714-0050 ROCKFORD (815) 489-0050 184-001397	HIGHWAY STANDARDS & APPLICATION RATES CH 24 (REAS BRIDGE ROAD)			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE =	DRAWN -	REVISED -			7355	14-00268-03-EG	MACON			CONTRACT NO.		
PLOT DATE =	CHECKED -	REVISED -										
	DATE -	REVISED -			SCALE:	SHEET NO.	OF	SHEETS	STA.	TO	STA.	ILLINOIS FED. AID PROJECT



REAS BRIDGE ROAD

STA 16+50.00 TO STA 26+00.33
 STA 52+00.00 TO STA 59+25.00



REAS BRIDGE ROAD

STA 26+00.33 TO STA 31+00.00
 STA 51+00.00 TO STA 52+00.00

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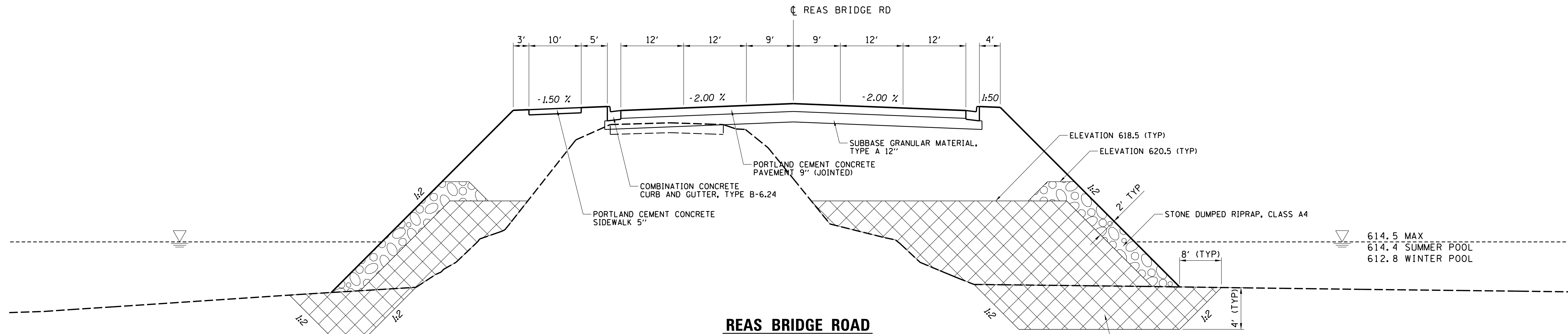
CHASTAIN & ASSOCIATES LLC
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 184-001397

CH 24 (REAS BRIDGE ROAD)

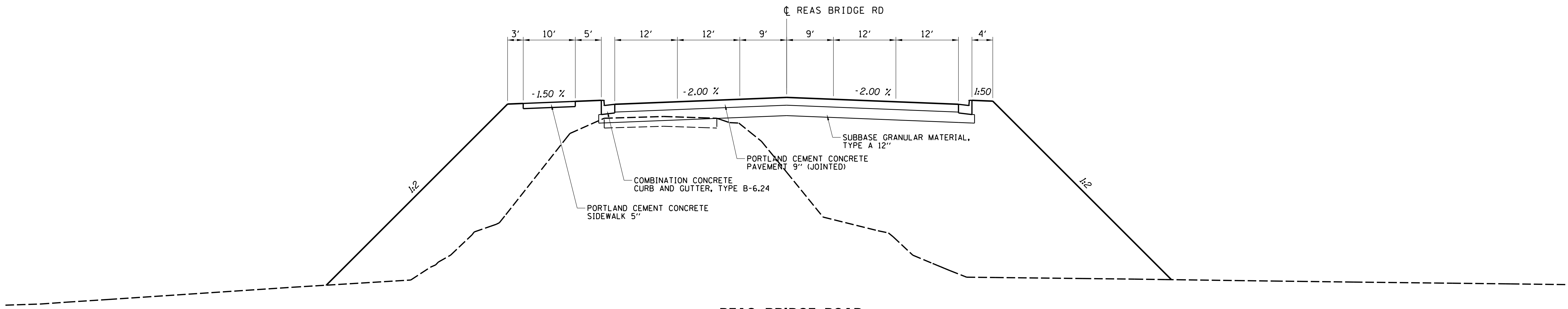
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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7355	14-00268-03-EG	MACON		
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ILLINOIS FED. AID PROJECT				



REAS BRIDGE ROAD

STA 31+00.00 TO STA 32+30.33
 PAVEMENT OMISSION STA 32+30.33 to STA 35+07.67
 STA 35+07.67 TO STA 42+14.33
 PAVEMENT OMISSION STA 42+14.33 to STA 45+96.67
 STA 45+96.67 TO STA 46+94.00



REAS BRIDGE ROAD

STA 46+94.00 TO STA 51+00.00

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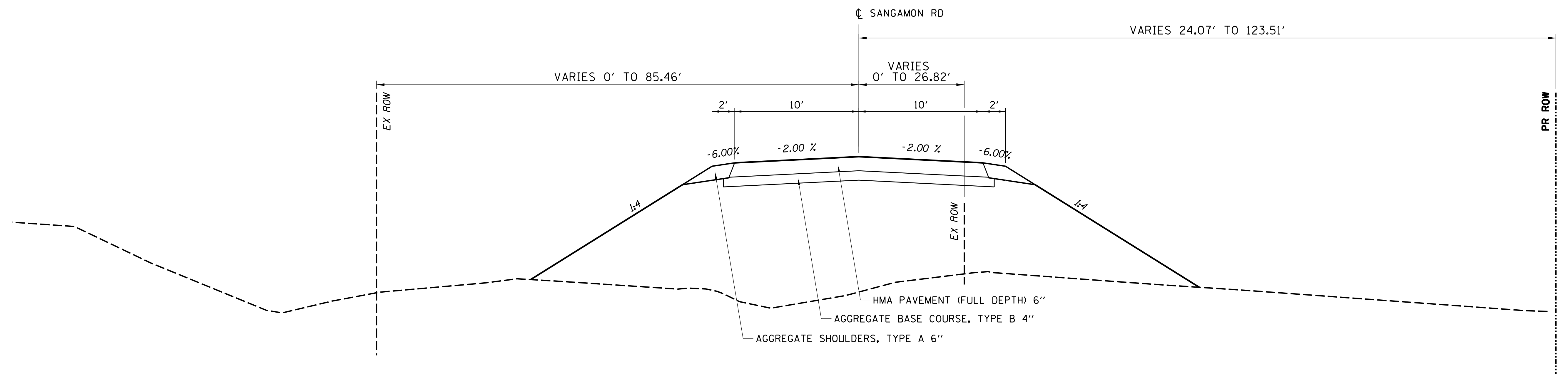
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**PROPOSED TYPICAL SECTIONS
 CH 24 (REAS BRIDGE ROAD)**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7355	14-00268-03-EG	MACON		
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



SANGAMON ROAD

STA 73+50.00 TO STA 79+69.33

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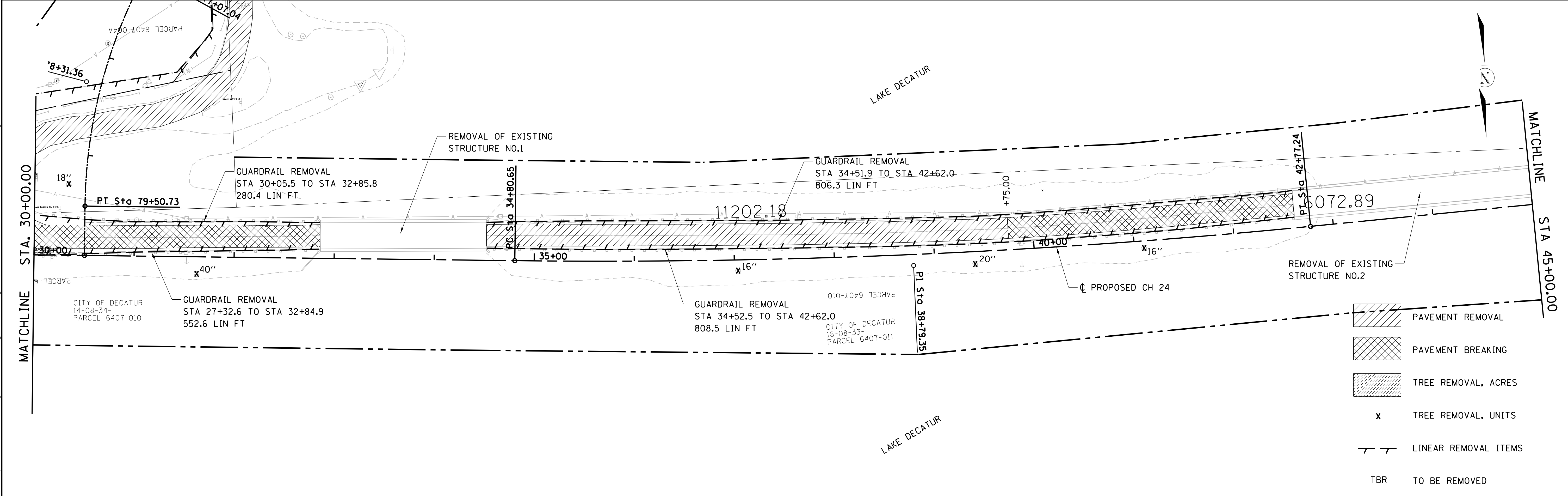
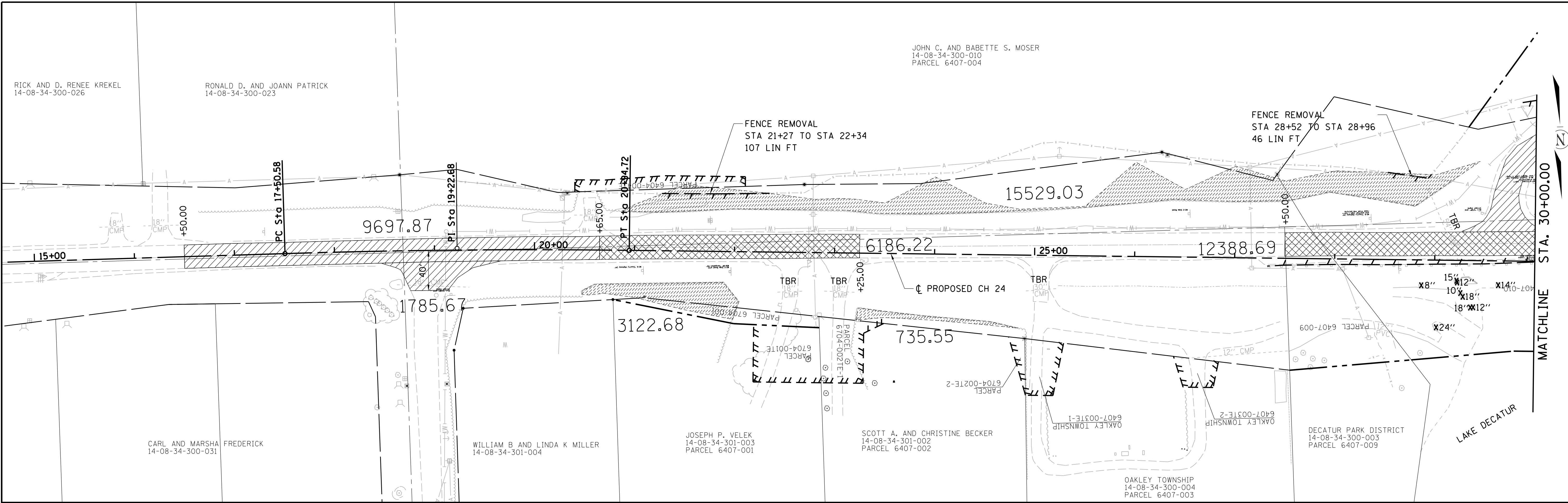
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**PROPOSED TYPICAL SECTIONS
CH 24 (REAS BRIDGE ROAD)**

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F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



- PAVEMENT REMOVAL
- PAVEMENT BREAKING
- TREE REMOVAL, ACRES
- TREE REMOVAL, UNITS
- LINEAR REMOVAL ITEMS
- TO BE REMOVED

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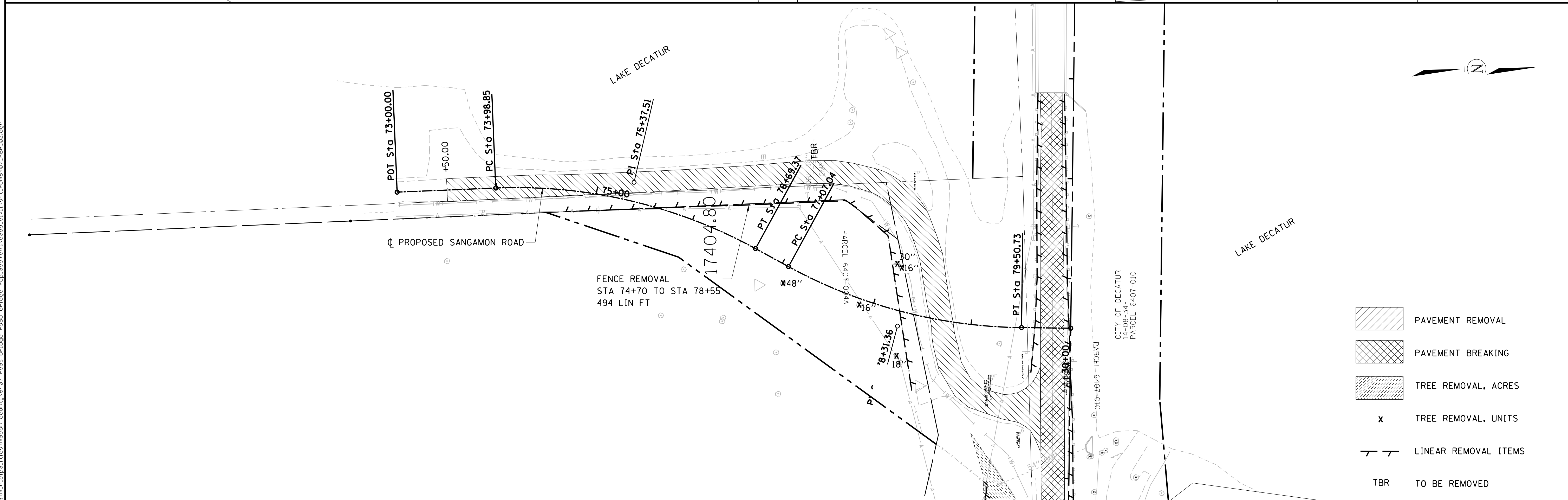
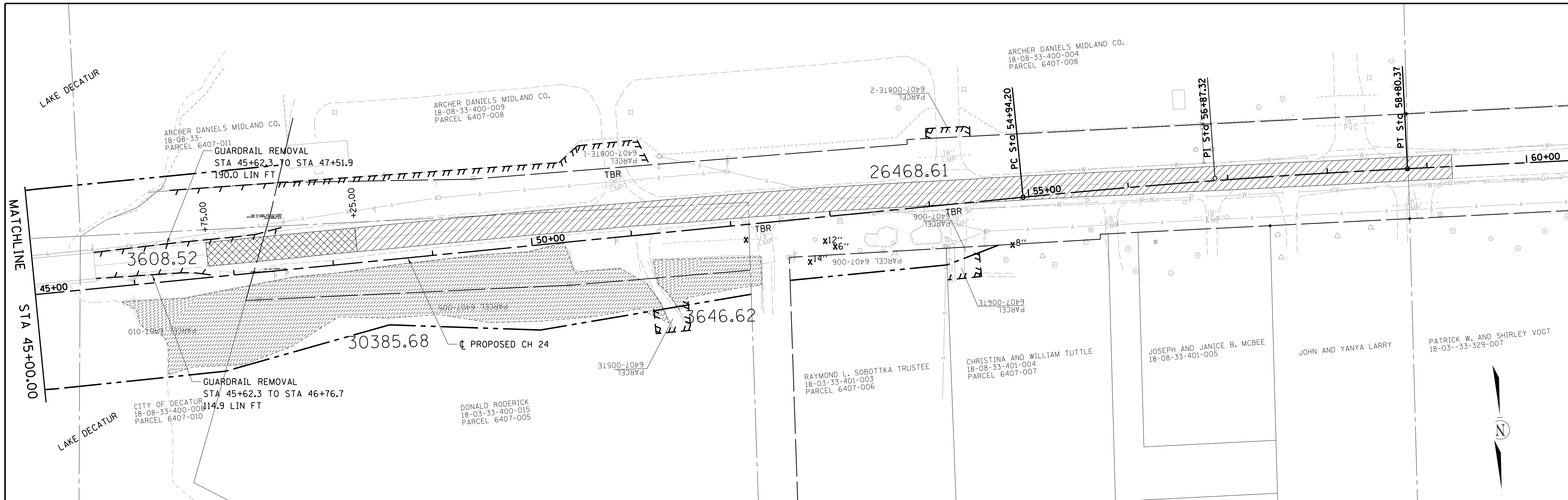
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ROCKFORD (815) 489-0050
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REMOVAL PLAN
CH 24 (REAS BRIDGE ROAD)

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7355	14-00268-03-EG	MACON		
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-  PAVEMENT REMOVAL
-  PAVEMENT BREAKING
-  TREE REMOVAL, ACRES
-  TREE REMOVAL, UNITS
-  LINEAR REMOVAL ITEMS
-  TO BE REMOVED

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REMOVAL PLAN
CH 24 (REAS BRIDGE ROAD)

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CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

RONALD D. AND JOANN PATRICK
14-08-34-300-023

PIPE CULVERT, CLASS D, TYPE 1 24"x30'
END SECTIONS 24" - 2 EACH
USFL 641.82 STA 20+41.3 34.8' LT
DSFL 640.85 STA 20+71.3 35.5' LT

MICHAEL BRADSHAW JR.
14-08-34-300-010

BEGIN IMPROVEMENTS
STATION 16+50.00

CONSTRUCTION LIMITS

Wetland W5
No Impact

STA. 30+00.00
MATCH LINE

PLAN	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	ALIGNED	
	FILED	
NOTE BOOK NO.	PROJECT NAME	

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PI STA. = 19+22.68
Δ = 2° 27' 53" (RT)
D = 0° 42' 58"
R = 8,000.00'
T = 172.10'
L = 344.14'
E = 1.85'
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P.C. STA. = 17+50.58
P.T. STA. = 20+94.72

CARL AND MARSHA FREDERICK
14-08-34-300-031

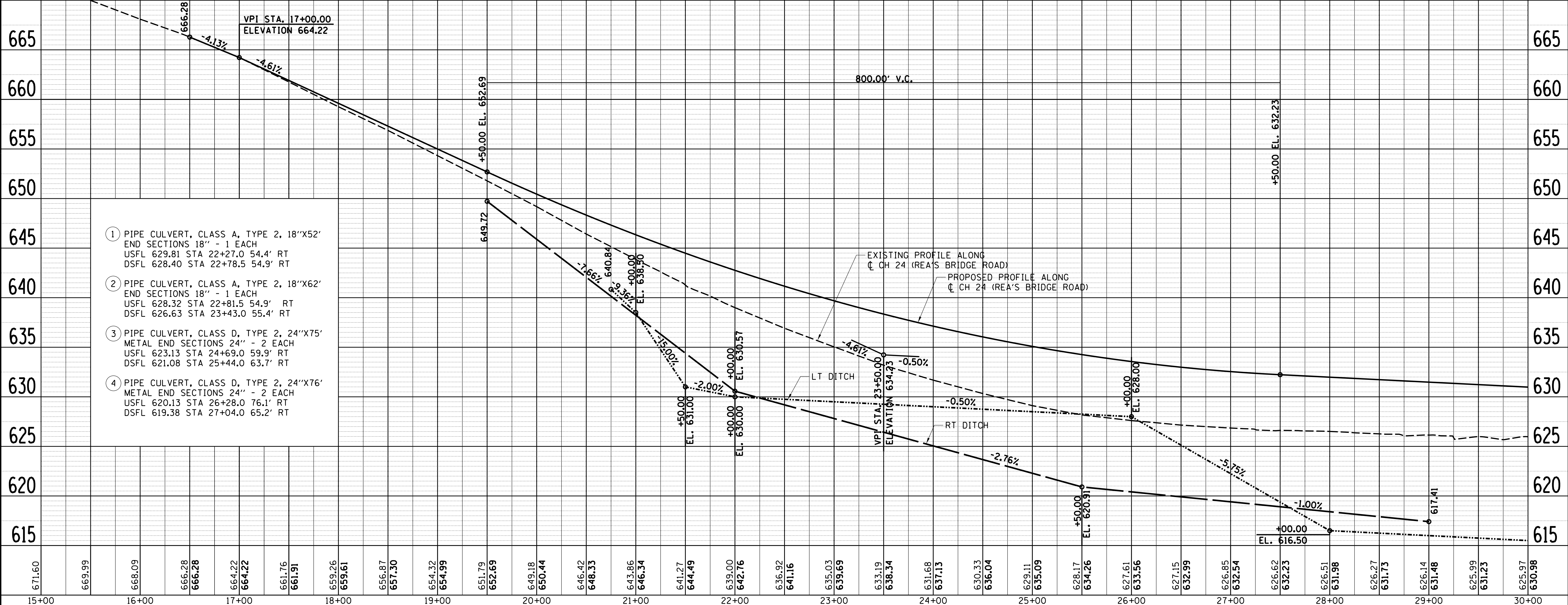
WILLIAM B AND LINDA K MILLER
14-08-34-301-004

JOSEPH P. VELEK
14-08-34-301-003

SCOTT A. AND CHRISTINE BECKER
14-08-34-301-002

OAKLEY TOWNSHIP
14-08-34-300-004

DECATUR PARK DISTRICT
14-08-34-300-003



- ① PIPE CULVERT, CLASS A, TYPE 2, 18"x52'
END SECTIONS 18" - 1 EACH
USFL 629.81 STA 22+27.0 54.4' RT
DSFL 628.40 STA 22+78.5 54.9' RT
- ② PIPE CULVERT, CLASS A, TYPE 2, 18"x62'
END SECTIONS 18" - 1 EACH
USFL 628.32 STA 22+81.5 54.9' RT
DSFL 626.63 STA 23+43.0 55.4' RT
- ③ PIPE CULVERT, CLASS D, TYPE 2, 24"x75'
METAL END SECTIONS 24" - 2 EACH
USFL 623.13 STA 24+69.0 59.9' RT
DSFL 621.08 STA 25+44.0 63.7' RT
- ④ PIPE CULVERT, CLASS D, TYPE 2, 24"x76'
METAL END SECTIONS 24" - 2 EACH
USFL 620.13 STA 26+28.0 76.1' RT
DSFL 619.38 STA 27+04.0 65.2' RT

EXISTING PROFILE ALONG
CH 24 (REA'S BRIDGE ROAD)

PROPOSED PROFILE ALONG
CH 24 (REA'S BRIDGE ROAD)

LT DITCH

RT DITCH

PROFILE	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	GRADES	
	STRUCTURE	
NOTE BOOK NO.	PROJECT NAME	

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DESIGNED -
DRAWN -
PLOT SCALE = 50.0000' / 1" =
PLOT DATE = 3/2/2020

DESIGNED -
DRAWN -
CHECKED -
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS

DECATUR (217) 492-8544
SCHAUMBURG (773) 714-0050
ROCKFORD (815) 489-0050
184-001397

PLAN AND PROFILE
CH 24 (REA'S BRIDGE ROAD)

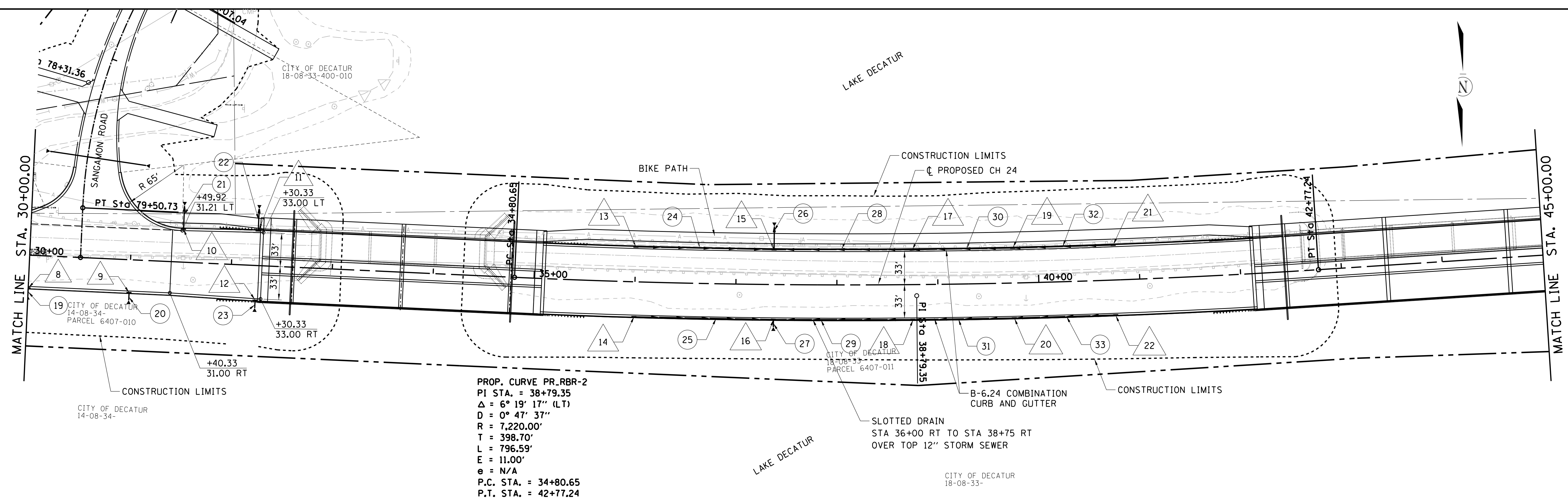
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NOT FOR CONSTRUCTION		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

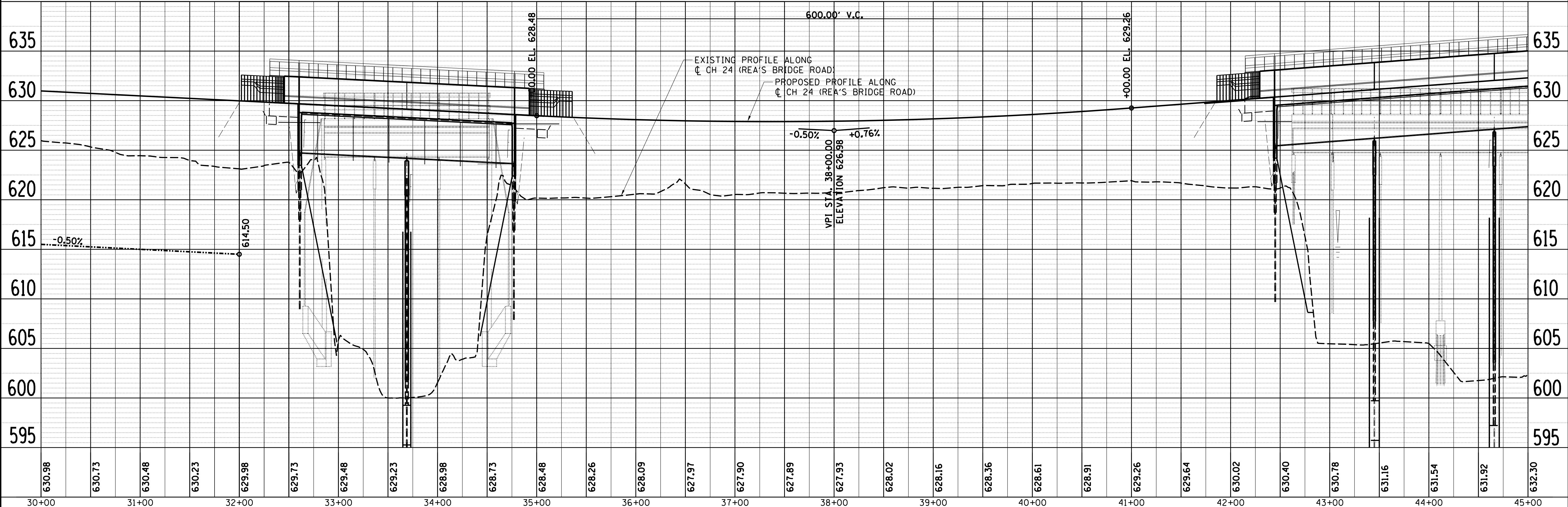
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PROP. CURVE PR-RBR-2
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 $D = 0^\circ 47' 37''$
 $R = 7,220.00'$
 $T = 398.70'$
 $L = 796.59'$
 $E = 11.00'$
 $e = N/A$
 P.C. STA. = 34+80.65
 P.T. STA. = 42+77.24



USER NAME = rkocher	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 50.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 3/2/2020	DATE -	REVISED -

CHASTAIN & ASSOCIATES LLC
 CONSULTING ENGINEERS

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 SCHALUMBURG (773) 714-0050
 ROCKFORD (815) 489-0050
 184-001397

PLAN AND PROFILE
CH 24 (REA'S BRIDGE ROAD)

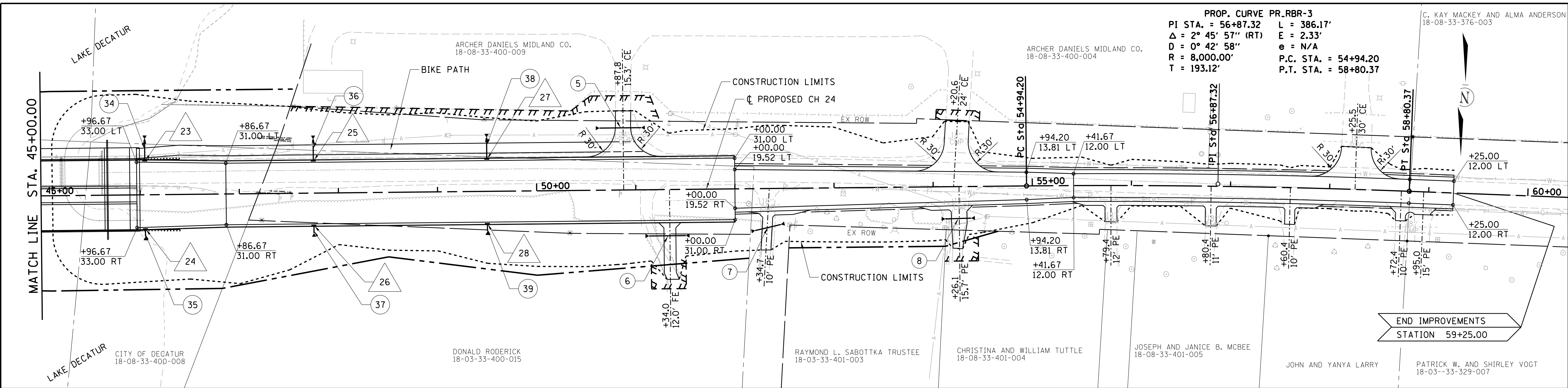
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F.A.U. RTE. 7355	SECTION 14-00268-03-EG	COUNTY MACON	TOTAL SHEETS	SHEET NO.
NOT FOR CONSTRUCTION		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

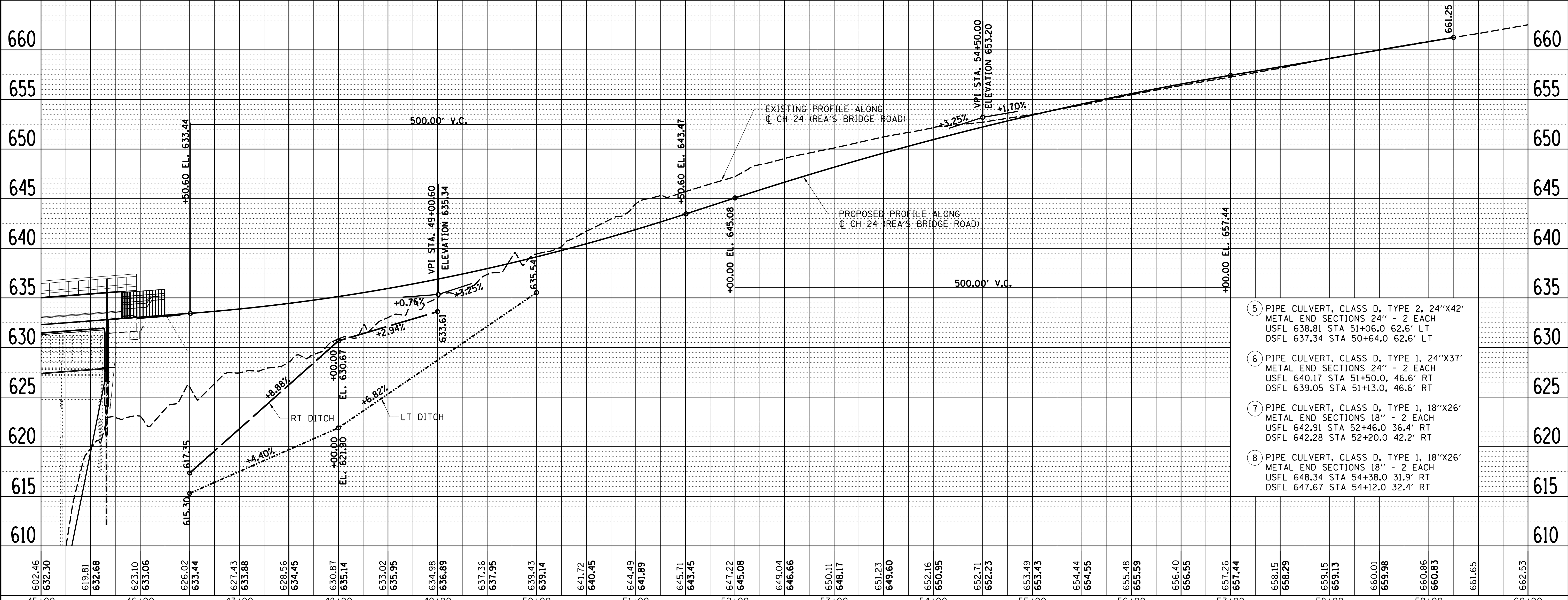
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	PLOTTED		
	CHECKED		
	ALIGNED		
	FILED		
	NO.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	CHECKED		
	GRADES		
	STRUCTURE		
	NOTATRS		
	CHKD		
	NO.		

FILE NAME = I:\municipalities\mason county\407 reas bridge road bridge replacement\cadd\civil\18-03-33-400-015.dgn



PROP. CURVE PR_RBR-3
 PI STA. = 56+87.32 L = 386.17'
 $\Delta = 2^\circ 45' 57''$ (RT) E = 2.33'
 $D = 0^\circ 42' 58''$ e = N/A
 R = 8,000.00' P.C. STA. = 54+94.20
 T = 193.12' P.T. STA. = 58+80.37



- 5 PIPE CULVERT, CLASS D, TYPE 2, 24"X42" METAL END SECTIONS 24" - 2 EACH USFL 638.81 STA 51+06.0 62.6' LT DSFL 637.34 STA 50+64.0 62.6' LT
- 6 PIPE CULVERT, CLASS D, TYPE 1, 24"X37" METAL END SECTIONS 24" - 2 EACH USFL 640.17 STA 51+50.0, 46.6' RT DSFL 639.05 STA 51+13.0, 46.6' RT
- 7 PIPE CULVERT, CLASS D, TYPE 1, 18"X26" METAL END SECTIONS 18" - 2 EACH USFL 642.91 STA 52+46.0 36.4' RT DSFL 642.28 STA 52+20.0 42.2' RT
- 8 PIPE CULVERT, CLASS D, TYPE 1, 18"X26" METAL END SECTIONS 18" - 2 EACH USFL 648.34 STA 54+38.0 31.9' RT DSFL 647.67 STA 54+12.0 32.4' RT

USER NAME = rkocher	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 50.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 3/2/2020	DATE -	REVISED -

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 CONSULTING ENGINEERS

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 SCHLAUMBURG (773) 714-0050
 ROCKFORD (815) 489-0050
 184-001397

PLAN AND PROFILE			
CH 24 (REA'S BRIDGE ROAD)			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.U. RT.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7355	14-00268-03-EG	MACON		
NOT FOR CONSTRUCTION		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

PLAN	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	BY	
	NO.	

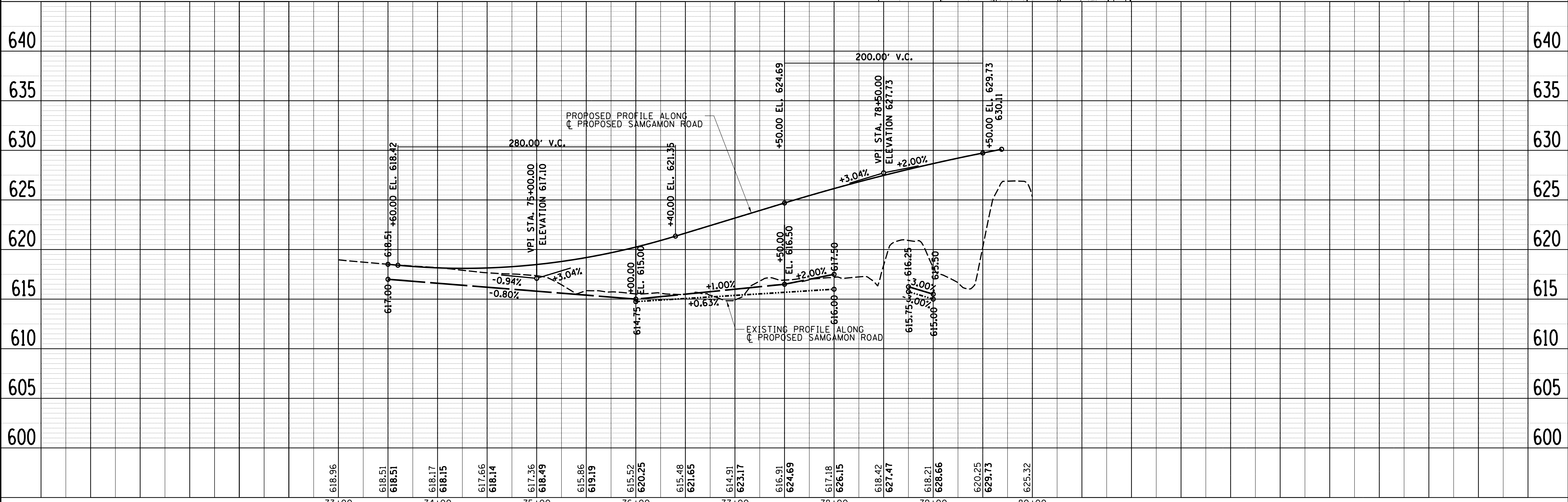
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	PLOTTED	
	CHECKED	
	BY	
	NO.	

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PROP. CURVE SANGAMON-1
 PI STA. = 75+37.51
 $\Delta = 30^\circ 59' 56''$ (RT)
 D = 11° 27' 33"
 R = 500.00'
 T = 138.66'
 L = 270.52'
 E = 18.87'
 e = N/A
 P.C. STA. = 73+98.85
 P.T. STA. = 76+69.37

PROP. CURVE SANGAMON-2
 PI STA. = 78+31.36
 $\Delta = 27^\circ 55' 30''$ (LT)
 D = 11° 27' 33"
 R = 500.00'
 T = 124.32'
 L = 243.69'
 E = 15.22'
 e = N/A
 P.C. STA. = 77+07.04
 P.T. STA. = 79+50.73

- 9 PIPE CULVERT, CLASS D, TYPE 2, 2-21"x45'
 METAL END SECTIONS 21" - 4 EACH
 USFL 615.00 STA 76+00, 22.0' RT
 DSFL 614.75 STA 76+00, 23.0' LT
- 10 PIPE CULVERT, CLASS D, TYPE 2, 15"x48'
 METAL END SECTIONS 15" - 2 EACH
 USFL 615.63 STA 77+40, 39.3' LT
 DSFL 615.33 STA 76+92, 39.3' LT
- 11 PIPE CULVERT, CLASS D, TYPE 2, 54"x96'
 METAL END SECTIONS 54" - 2 EACH
 USFL 615.50 STA 79+00, 37.5' RT
 DSFL 615.00 STA 79+00, 58.5' LT



USER NAME = rkocher
PLOT SCALE = 50.0000' / in.
PLOT DATE = 3/2/2020

DESIGNED -
DRAWN -
CHECKED -
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

CHASTAIN & ASSOCIATES LLC
 CONSULTING ENGINEERS

DECATUR (217) 492-8544
 SCHLAUMBURG (773) 714-0050
 ROCKFORD (815) 489-0050
 184-001397

PLAN AND PROFILE SANGAMON ROAD
 SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00268-03-EG	MACON		
NOT FOR CONSTRUCTION		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

Existing Structure SN 058-3033:
 The existing bridge is a 166.0' long 3 span W-section beam bridge.
 The closed abutments are supported by precast concrete piling.
 Piers 1 and 2 consist of a reinforced concrete cap on precast concrete piling. This original structure was built in 1957.
 Traffic is to be maintained on this structure until Stage I of the new structure is complete.
 No salvage.

Bench Marks:
 BM #1: Chiseled line on SE wingwall.
 Elev. 617.17
 BM #4: Chiseled square on SE corner of east abutment
 Elev. 627.32

DESIGN SPECIFICATIONS
 2018 AASHTO LRFD Bridge Design Specifications, 8th Edition with 2018 Interims

DESIGN STRESSES

FIELD UNITS
 $f'_c = 3,500$ psi
 $f'_c = 4,000$ psi (Superstructure)
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50W)

LOADING HL-93

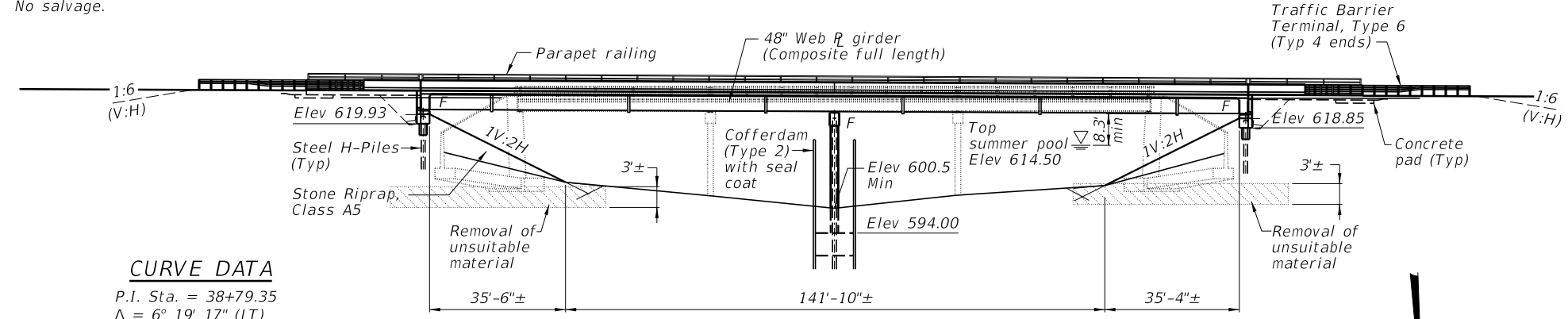
Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA

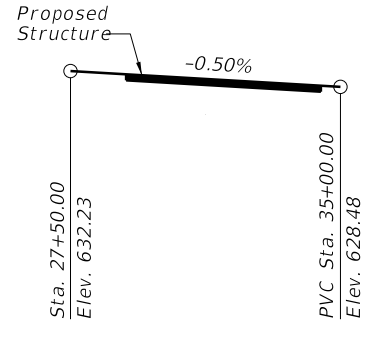
Seismic Performance Zone (SPZ) = 2
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.152g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.274g
 Soil Site Class = D

CURVE DATA

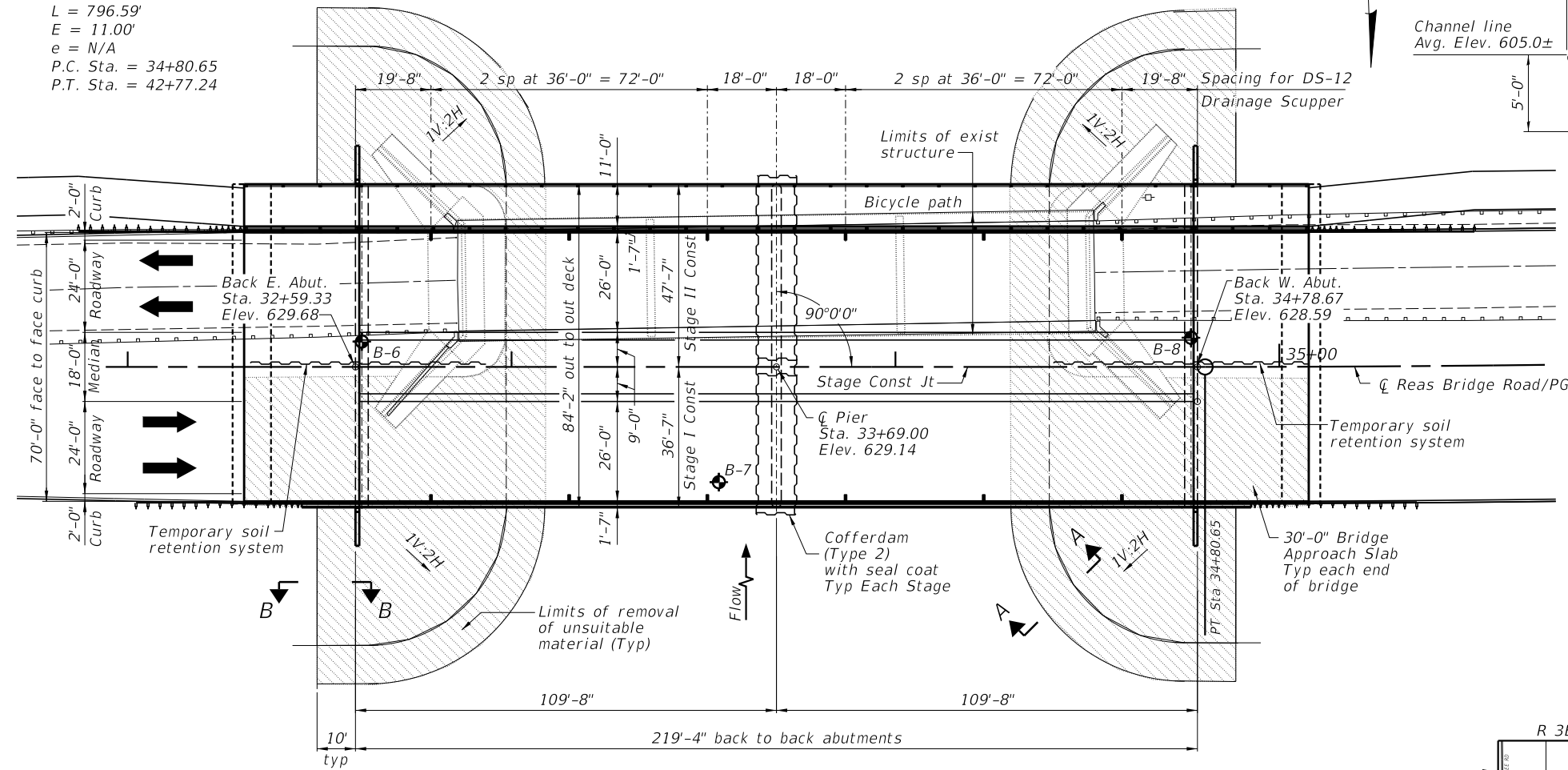
P.I. Sta. = 38+79.35
 $\Delta = 6^\circ 19' 17''$ (LT)
 $D = 0^\circ 47' 37''$
 $R = 7,220.00'$
 $T = 398.70'$
 $L = 796.59'$
 $E = 11.00'$
 $e = N/A$
 P.C. Sta. = 34+80.65
 P.T. Sta. = 42+77.24



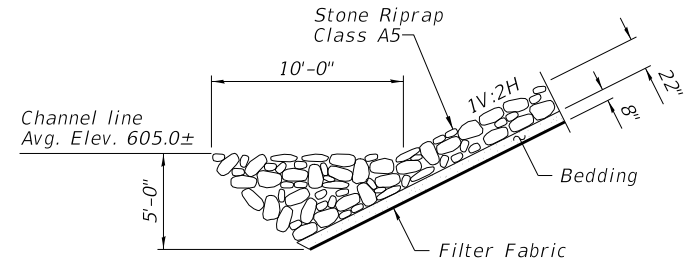
ELEVATION



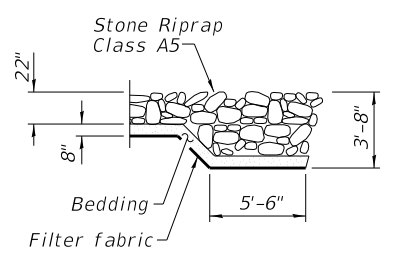
PROFILE GRADE
 (Along PGL)



PLAN



SECTION A-A



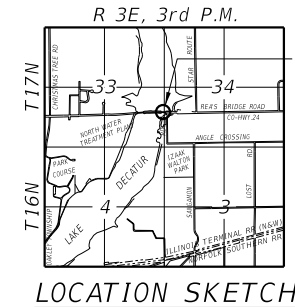
SECTION B-B

REAS BRIDGE ROAD OVER
 LAKE DECATUR
 BUILT 20 BY
 MACON COUNTY
 SECTION 12-00252-00-BR
 STA 33+69.00
 STR. NO. 058-3409 LOADING HL-93

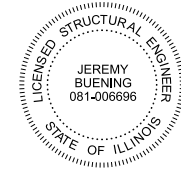
NAME PLATE
 See Std. 515001

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)			Item 113
	E. Abut.	Pier	W. Abut.	
Q100	619.9	587.9	618.9	5
Q200	619.9	586.5	618.9	
Design	619.9	587.9	618.9	
Check	619.9	586.5	618.9	



LOCATION SKETCH



Jeremy Buening, P.E., S.E. Date
 License Expires 11/30/20

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.

NOT FOR CONSTRUCTION

USER NAME = rkocher	DESIGNED JMB	REVISED -
PLOT TIME = 1:16:54 PM	DRAWN RLK	REVISED -
PLOT SCALE = 40,0000' / in.	CHECKED BCG	REVISED -
PLOT DATE = 3/2/2020	DATE 6/17/16	REVISED -

CHASTAIN & ASSOCIATES LLC
 CONSULTING ENGINEERS

DECATUR, IL SCHAUMBURG, IL
 ROCKFORD, IL CHAMPAIGN, IL
 BENTON, IL LAFAYETTE, IN
 PADUCAH, KY
 (833) 424-2782 184-001397

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 058-3409
 SHEET NO. 1 OF 33 SHEETS

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7355	12-00252-00-BR	MACON		
STRUCTURE NO. 058-3409		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

FILE NAME = I:\municipalities\macon county\6487-reos bridge-replacement\CAD\Structural\EastBridge\gs&e.dgn

Existing Structure SN 058-3032:
The existing bridge is a 300.0' long 6 span W-section beam bridge. The stub abutments are supported by precast concrete piling. Piers 1, 2, 4, and 5 consist of a reinforced concrete cap on precast concrete piling. Pier 3 consists of a solid wall supported by a spread footing on timber piles. This original structure was built in 1957.

Traffic is to be maintained on this structure until Stage I of the new structure is complete.
No salvage.

Bench Marks:
BM #5: Chiseled square on SW wingwall.
Elev. 627.44

BM #6: RR spike in N face of pole approximately 40' west of east entrance to ADM.
Elev. 645.28

*All excavation for the new structure is along back of abutments as shown, ROW to ROW will not be paid for separately, and the cost of excavation, hauling excess material, and disposal of excess material, shall be included in the cost of Removal of Existing Structures. No additional compensation will be allowed.
Estimated quantity =

DESIGN SPECIFICATIONS
2018 AASHTO LRFD Bridge Design Specifications, 8th Edition with 2018 Interims

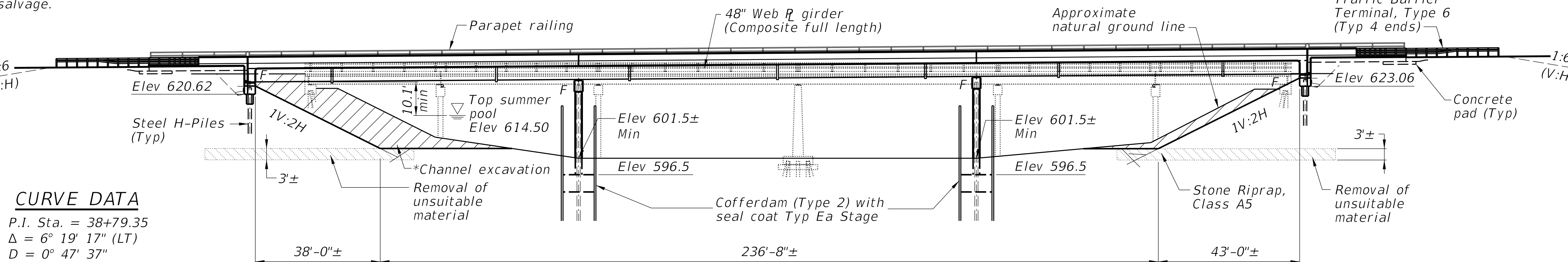
DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
f'c = 4,000 psi (Superstructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

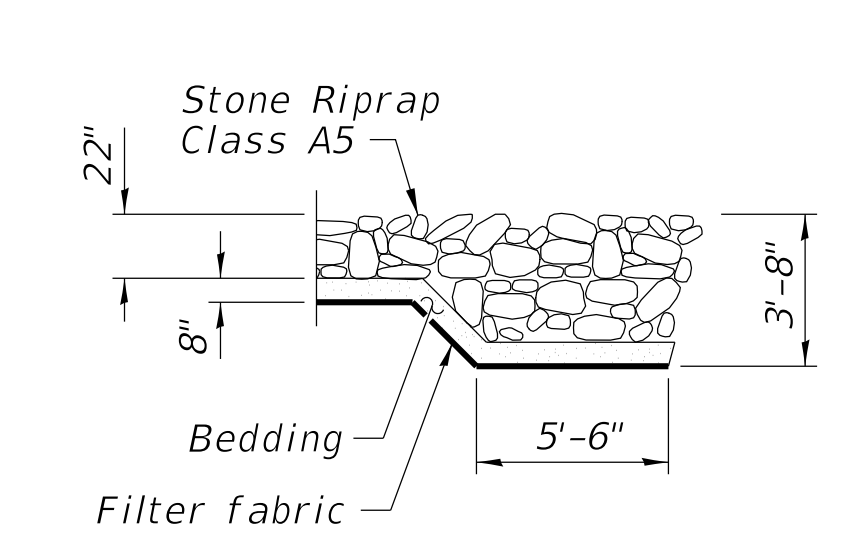
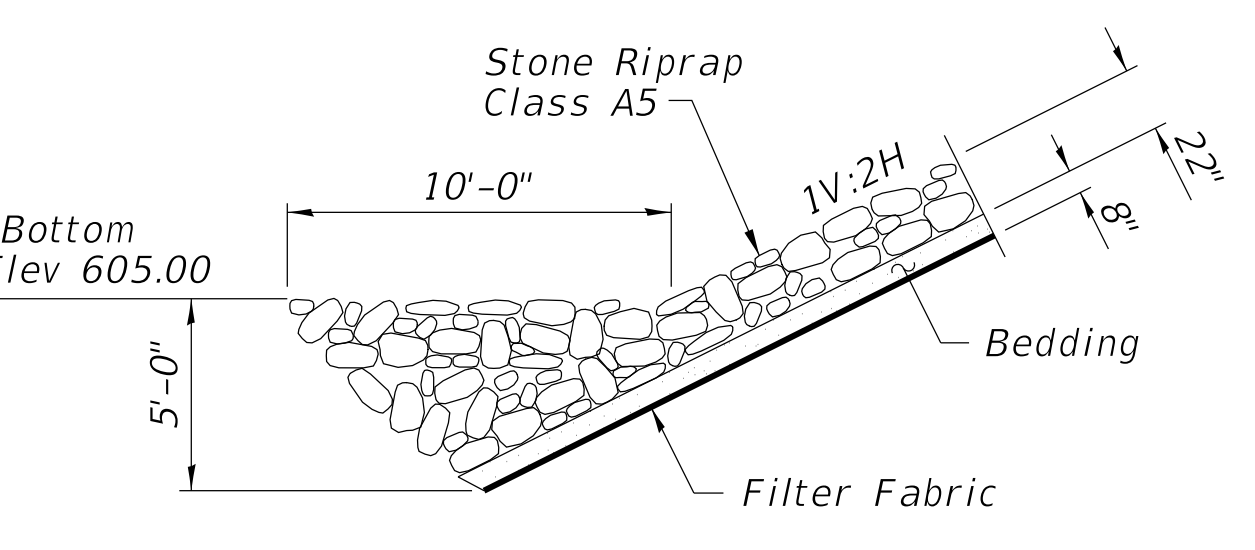
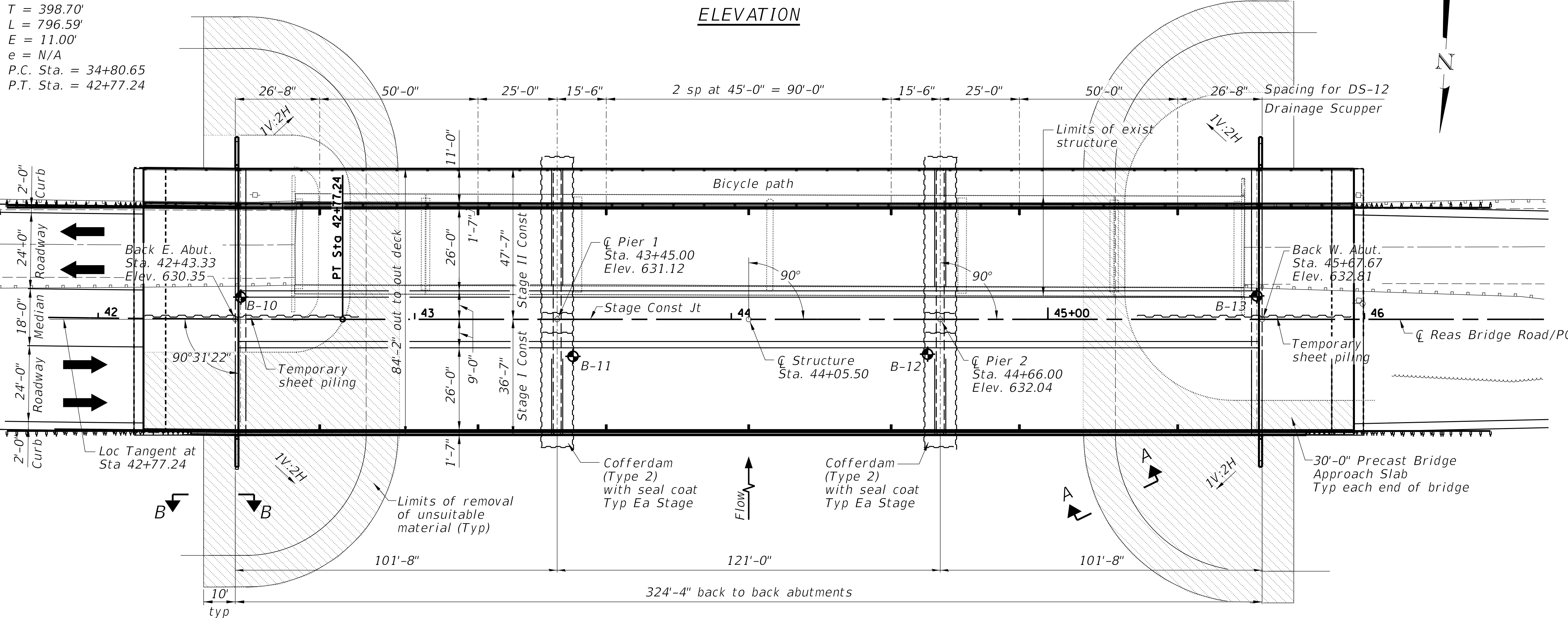
SEISMIC DATA

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Design Spectral Acceleration at 0.2 sec. (SDS) = 0.274g
Soil Site Class = D



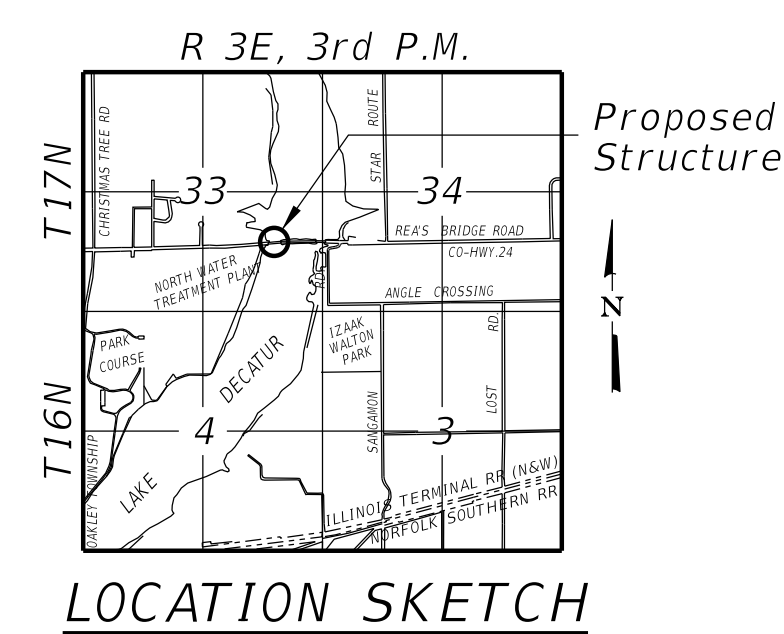
CURVE DATA

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R = 7,220.00'
T = 398.70'
L = 796.59'
E = 11.00'
e = N/A
P.C. Sta. = 34+80.65
P.T. Sta. = 42+77.24



DESIGN SCOUR ELEVATION TABLE

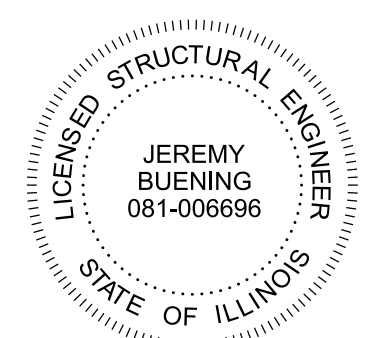
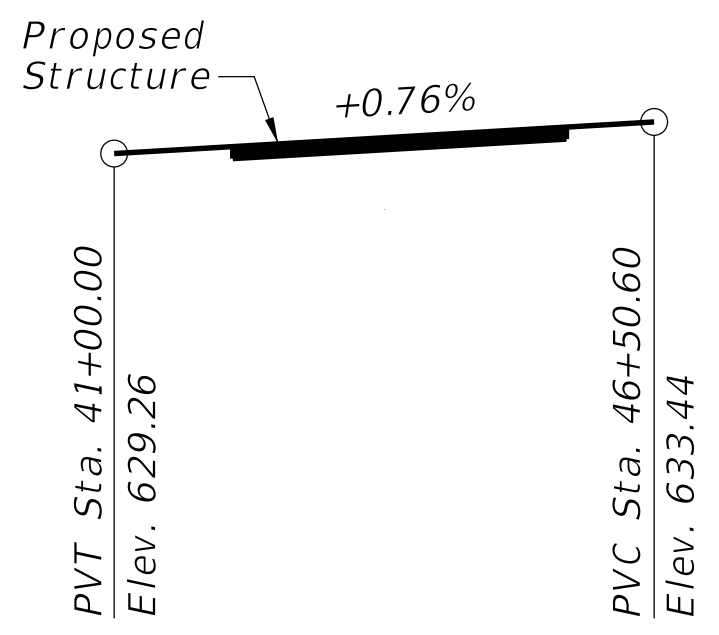
Event / Limit	Design Scour Elevations (ft.)				Item 113
	E. Abut.	Pier 1	Pier 2	W. Abut.	
Q100	620.6	590.7	590.7	623.1	5
Q200	620.6	587.8	587.8	623.1	
Design	620.6	590.7	590.7	623.1	
Check	620.6	587.8	587.8	623.1	



REAS BRIDGE ROAD OVER LAKE DECATUR BUILT 20 BY MACON COUNTY SECTION 12-00251-00-BR STA 44+05.50 STR. NO. 058-3408 LOADING HL-93

NAME PLATE

See Std. 515001



Jeremy Buening, P.E., S.E. Date
License Expires 11/30/20

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.

NOT FOR CONSTRUCTION

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CONSULTING ENGINEERS

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ROCKFORD, IL CHAMPAIGN, IL
BENTON, IL LAFAYETTE, IN
PADUCAH, KY

(833) 424-2782 184-001397

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 058-3408
SHEET NO. 1 OF 40 SHEETS

FAU RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7355	12-00251-00-BR	MACON		
STRUCTURE NO. 058-3408		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

FILE NAME = I:\municipalities\macon county\6487-reas bridge-road bridge-replacement\CADD\Structural\WestBridge\sp8e.dgn

APPENDIX 2 – Habitat Assessment Report



Habitat Assessment and Survey for Kirtland's Snake, *Clonophis kirtlandii*, along Rea's Bridge Road (CH 24) over Lake Decatur in Macon County, Illinois

IDOT Sequence No. 13921 G, IDOT Structure Nos. 058-3032 & 058-3033



Prepared by:
Andrew R. Kuhns

INHS/IDOT Statewide Biological Survey & Assessment Program

20:16

June 2020



PROJECT SUMMARY

This report details results of a habitat assessment and a herpetological survey for the Kirtland's Snake, *Clonophis kirtlandii*, at Rea's Bridge Road Bridge (CH 24) over Lake Decatur in Macon County Illinois (IDOT sequence No. 13921 G). This bridge project is a breakout of a larger Environmental Assessment project (IDOT FAI-55). Information on the natural history and ecology of the Kirtland's Snake, the only reptile listed as threatened or endangered in Illinois that are known to occur near Rea's Bridge Road can be found in **Appendix A**. Surveys were conducted by INHS herpetologist A.R. Kuhns on 20 May 2020 under Illinois Department of Natural Resources (IDNR) State Threatened and Endangered Species Permit 6680 as required under the Illinois Endangered Species Protection Act (520 ILCS 10/4) and IDNR Herptile Scientific and Research Collecting Permit (HSCP 19-04). Survey methods are detailed in **Appendix B** and are approved under University of Illinois IACUC protocol 19038. The location of surveys can be seen in **Appendix C** and images from the sampled locations are included in **Appendix D**. An ArcGIS folder <13921G_Herp_Survey_GIS.zip> containing an Arc-GIS shapefile of the sampled area constitutes is referenced in **Appendix E**. The ArcGIS shapefile and this report will be submitted to IDOT via the IDOT Site Assessment Tracking System extranet website [Frostycap]. No Kirtland's Snake were documented in the Environmental Survey Request Area but one individual was detected at an EOR location on the date of the surveys (see cover photo).



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

Surveys Conducted By: Andrew R. Kuhns, Associate Herpetologist

GIS Layers By: Janet Jarvis, Associate GIS Specialist

Edited By: Mark J. Wetzel, INHS Affiliate

University of Illinois
Prairie Research Institute
Illinois Natural History Survey
Statewide Biological Survey and Assessment Program
1816 South Oak Street
Champaign, Illinois 61820

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Discussion	5
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Cover Photo: Kirtland’s Snake found 6 miles south of Rea’s Bridge Road (CH 24) on 20 May 2020. Photo by A. R. Kuhns, INHS.	

INTRODUCTION

In a transmittal dated 18 February 2020, Kimberly Burkwald, Ecological Resource Specialist with the Illinois Department of Transportation (IDOT) Bureau of Design and Environment, tasked the Illinois Natural History Survey (INHS) to conduct a habitat assessment and a herpetological survey for the presence of Kirtland's Snake along Structures 058-3032 and 058-3033 carrying Rea's Bridge Road (CH 24) over Lake Decatur in Mason County Illinois (IDOT sequence No. 13921 G). The bridge is part of a breakout of a larger IDOT FAI 55 Environmental Assessment Project in the area. This report details the result of a habitat assessment and survey for the above-mentioned species that occurred on 20 May 2020. The natural history and ecology of the Kirtland's Snake can be found in **Appendix A**.

PROJECT AREA

This tasking area occurs along 3000 feet of Rea's Bridge Road (CH 24) crossing Lake Decatur in Mason County, Illinois. Approximate coordinates of the center of the project are 39.88279, -88.86256 on IDOT FAI 55 north of Sherman, Illinois. The project corridor extends south and then southwest along the Interstate 55 corridor to 39.74370, -88.71127 (**Appendix C, Figure C.1**). The majority of the Environmental Survey Request Area (ESR) consists of lentic Lake Decatur. There is shoreline habitat on the eastern and western terminus of the project area, as well as a manmade causeway between structures 058-3032 and 058-3033. The western limit of the project area is upland mixed residential and industrial use. On the eastern end there are small gravel parking lots for fishermen on both sides of Rea's Bridge Road. Shoreline habitat is riprap on the eastern shore and causeway and poured concrete on the western edge.

Database Review

The Illinois Natural Heritage Database maintained by the Illinois Department of Natural Resources (IDNR) was queried for Element Occurrence Records (EOR) of threatened and endangered amphibians and reptiles within a mile of the project boundary. Each EOR may be subdivided into multiple Element of Occurrence Identification numbers (EOID) to record separate identification events or sub-locations. Additionally, searches of both vouchered and un-vouchered (photo only) specimens in the Illinois Natural History Survey (INHS), the University of Illinois Museum of Natural History (UIMNH), and the non-INHS Illinois Amphibian and Reptile databases maintained by the Illinois Natural History Survey were conducted. Together these databases are merged and accessed through the All_IL_Herps database at INHS and are updated semi-annually. The locations of any results were plotted onto aerial photographs of the Environmental Survey Request (ESR) and examined to search for suitable habitat for the species.

Field Methods

On 20 May 2020, I, INHS Associate Herpetologist A.R. Kuhns conducted a habitat assessment and visual encounter survey (VES) within the IDOT Rea's Bridge Road (CH 24) project area (IDOT sequence No. 13921 G; **Appendix C, Figures C.1**). I drove Star Route Road, which terminates at the Eastern edge of the Rea's Bridge Road ESR and is the location of the two closest EOR records for Kirtland's Snake. I searched for Dead on Road snakes and examined the habitat of the EOR locations for similarities to the ESR area. Additionally, I visually examined the habitat in

the ESR limits to identify potential survey sites. I conducted Visual Encounter Surveys in habitat that appeared potentially suitable for the detection of Kirtland's Snakes. VES consisted of methodically walking the habitat and examining under all cover objects that appeared large enough to harbor a snake underneath, yet small enough to dislodge. The surveys were conducted under Illinois Department of Natural Resources (IDNR) State Threatened and Endangered Species Permit 6680 as required under the Illinois Endangered Species Protection Act (520 ILCS 10/4) and IDNR Herptile Scientific and Research Collecting Permit (HSCP 19-04). Survey methods are detailed in **Appendix B** and were approved under Protocol 19038 of the University of Illinois Institutional Animal Care and Use Committee, as required by the Federal Animal Welfare Act (CFR Title 9 Parts 1, 2, and 3).

RESULTS

Database Review

There are numerous records for the Kirtland's Snake in the Sangamon River Valley, including around the eastern shores of Lake Decatur (**Appendix C, Figures C.1**). There were no records for the species in the ESR polygon. The closest record is 0.2 miles northeast of the eastern terminus of the ESR from 2016 (**Appendix C, Figures C.1**).

Field Surveys

No snakes were encountered along Star Route Road during habitat assessment and road cruising for animals crossing the road. There were no suitable cover objects on the western shore to search under (**Appendix D, Plate 1**). The causeway between the two bridges did have some rip rap but the banks were steep and unsearchable for a lone surveyor. I flipped 144 cover objects (mostly concrete aggregate, brick, pavers, and logs) along the eastern shore of Lake Decatur within the ESR limits (**Appendix D, Plate 2**). One Northern Watersnake, *Nerodia sipedon*, a non-listed species, was observed under a large concrete piece. No Kirtland's Snakes were detected despite the abundance of suitable cover objects near the waterline.

DISCUSSION

The Kirtland's Snake is a shy and secretive species and one of the most difficult snakes in Illinois to observe or capture during surveys (**Appendix A**). Their primarily subterranean existence results in few direct observations of the species. It is not unusual for known populations to go many years between detection events. Therefore, it is often only possible to document the continued presence of suitable habitat for these species.

Unfortunately, the listed habitat preferences for Kirtland's Snake is vague and varied and are of little use in determining habitat suitability. Some of the best-known locations for Kirtland's Snakes occur near downtown Indianapolis, Indiana, but they are also known from large natural undisturbed grasslands with high water tables in northeastern Illinois. More recently, it has appeared that the large reservoirs of central Illinois may also harbor healthy populations of Kirtland's Snake, where the snakes are restricted to small areas at the water/land interface – often being found under artificial cover such as riprap.

While no detections of Kirtland Snake occurred during this survey, it is possible that Kirtland's Snakes occur in or adjacent to the ESR limits. This assertion is based upon 1) recent and recurring records of the species near the site, 2) the continued presence of suitable habitat for the species despite a lack of detections during recent surveys, and the presence of microhabitat (riprap) that is used by Kirtland's Snakes in multiple other reservoirs in central Illinois.

Appendix A.

Natural History of the Kirtland's Snake, *Clonophis kirtlandii*, and Lined Snake, *Tropidoclonion lineatum* Listed as Threatened in the State of Illinois.

SYNOPSIS

This appendix presents information on the Kirtland's Snake, *Clonophis kirtlandii*, listed as a threatened species in the State of Illinois, because there is some possibility of its occurrence within the IDOT FAI 55 project area. The species account includes diagnostic characters, range in Illinois, habitat requirements, spatial ecology and activity, reproduction, and the suitable sampling season in Illinois. Standard and scientific names follow Crother (2012).

Species range maps were created by Ethan J. Kessler. Maps were based upon data in the Illinois Natural History Survey's All_IL_Herps Database which contains records of vouchered and un-vouchered specimens in the Illinois Natural History Survey (INHS), University of Illinois Museum of Natural History (UIMNH), and amphibian and reptile specimens from ~30 other scientific museums. The database is maintained by INHS/UIMNH Amphibian and Reptile Curator, Christopher A. Phillips, with records from other institutions updated annually.

LITERATURE CITED

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KIRTLAND'S SNAKE, *CLONOPHIS KIRTLANDII*

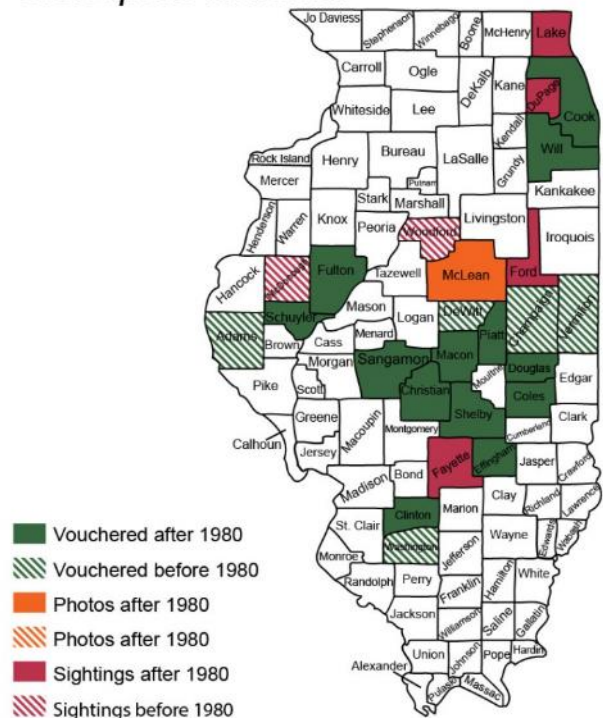


General Description for Identification: Like the other natricine snake species, the Kirtland's Snake has keeled scales and a divided anal plate. It is a small species that is distinguished by other snakes in Illinois, by its red or orange venter with contrasting black spots on each ventral scale.

Range: Within Illinois, Kirtland's snake primarily inhabits the southern till plain and extends north in the Chicago Region. It is absent from the sandy soil habitats in these areas.

Suitable Habitat: Historically, wet prairies, wet meadows, prairie fens and associated wetlands, especially those that were seasonally flooded and adjacent to upland areas, were the preferred habitats for Kirtland's Snakes (Ernst and Ernst 2003). Most of these habitats have long since been destroyed through agricultural practices and other development. Present habitat consists of open, low, grassy areas, often at the margins of streams, ponds or ditches (Minton, 1972; Ernst and Barbour 1989; Bavetz 1994). Crayfish burrows are used as shelter although Kirtland's snakes have been collected in vacant lots in urban areas where crayfish burrows are not present. When crayfish burrows are not present, they hide under boards, trash and other surface debris (Ernst and Ernst 2003).

Kirtland's Snake
Clonophis kirtlandii



Reproduction: Little is known about the life history of the Kirtland's Snake due to its secretive nature. Courtship behavior have been observed in the month of September in Illinois (Anton et al. 2003).

Activity: Kirtland's Snakes are reported to be most active in April and May (spring) and October (autumn) and enter hibernation in late October to early November (Ernst and Ernst 2003). Snakes may den communally (Anton et al. 2003).

Suitable Sampling Seasons: This species is shy and secretive, spending most of its time below ground and under large cover objects. Anecdotal evidence suggests that they are most often surface active when temperatures are below 70 F on overcast days in the spring and fall.

Illinois Status: Kirtland's Snake is listed as threatened in Illinois (Illinois Endangered Species Protection Board 2015). The primary threat to the species in Illinois is destruction of habitat (Phillips et al. 1999).

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APPENDIX B

Sampling methods appropriate for the detection of amphibians and reptiles listed as endangered or threatened in the state of Illinois.

Table B.1. Species of amphibians and reptiles listed as threatened or endangered in Illinois and potential sampling methods for their detection.

		Threatened	Endangered	Dip-Net	Minnow Trap	Call Survey	Visual Encounter	Hoop Trap	Fyke Net	Seine	Drift Fence	Coverboard	
State Listed Herptiles													
AMPHIBIANS	SALIENTIA	<i>Ambystoma jeffersonianum</i>	X										
		<i>Ambystoma platineum</i>		X									
		<i>Cryptobranchus alleganiensis</i>		X									
		<i>Desmognathus conanti</i>		X									
		<i>Hemidactylium scutatum</i>	X										
		<i>Necturus maculosus</i>	X										
	ANURA	<i>Hyla avivoca</i>		X									
		<i>Pseudacris streckerii</i>		X									
		<i>Gastrophryne carolinensis</i>	X										
REPTILES	TESTUDINES	<i>Apalone mutica</i>		X									
		<i>Clemmys guttata</i>		X									
		<i>Emydoidea blandingii</i>		X									
		<i>Kinosternon flavescens</i>		X									
		<i>Macrochelys temminckii</i>		X									
		<i>Pseudemys concinna</i>		X									
		<i>Terrapene ornata</i>	X										
	SERPENTES	<i>Clonophis kirtlandii</i>	X										
		<i>Crotalus horridus</i>	X										
		<i>Pantherophis emoryi</i>		X									
		<i>Heterodon nasicus</i>	X										
		<i>Masticophis flagellum</i>		X									
		<i>Nerodia fasciata</i>		X									
		<i>Nerodia cyclopion</i>	X										
		<i>Sistrurus catenatus</i>		X									
<i>Tantilla gracilis</i>	X												
<i>Thamnophis sauritus</i>	X												
<i>Tropidoclonion lineatum</i>	X												

Sampling Methods for the Detection of State Listed Amphibians and Reptiles

ACTIVE SAMPLING METHODS

Call Survey. This method is only effective for anurans during the breeding season. The researcher either visits wetlands in the evening hours to listen to the frog chorus, or places an audio recording device at the wetland during the day and returns the following morning to retrieve the recording. In either case, the researcher must be familiar with the calls of frogs and toads in the area in order to identify the species based only upon the calls in the chorus. To be effective, the researcher must also be familiar with the ecology of the target species and sample during its breeding season in habitats where it is likely to reside.

Dip Netting. A dip net is useful for sampling aquatic animals and can be used to capture individuals observed or as a means of blindly sampling for aquatic organisms in vegetation choked or turbid water. Typically, a researcher will pull the net along the substrate and through the water column for approximately 3 feet, and then finish the net sweep by pulling the net up and out of the water with the net opening facing upward. The researcher can then remove any substrate or detritus from the net and search for captured animals.

Seine. A seine is a fishing net that hangs vertically in the water column suspended by floats with the bottom edge held down by weights. The net is dragged along the bottom of aquatic habitats and captures aquatic amphibians and reptiles when it is drawn onto shore or scooped out of the water. In many ways, it functions much like a large dip net when used for amphibian and reptile sampling.

Visual Encounter Survey (VES). Visual encounter surveys involve searching appropriate habitat (mainly turning cover items such as logs, rocks and miscellaneous debris and also visually scanning open habitats) and recording all species encountered. Surveys can be regimented such as by walking pre-defined grid patterns and time limits, or in a more haphazard wandering pattern. This method is most effective if the researcher is familiar with the target species ecology and can focus on habitat areas where the species is most likely to be encountered, as well as time of day and seasons when the species is most active. A thorough explanation of this technique can be found in Heyer et al. (1994).

PASSIVE SAMPLING METHODS

Drift Fence. A drift fence is any object that is placed perpendicular to the ground surface as a way to intercept animals that may be passing through. It is often constructed of hardware cloth or silt fencing buried a few inches into the ground to prevent burrowing; but natural cover items such as large logs or rock formations may also function as a drift fence. Animals are captured by travelling parallel to the fence until they fall into a receptacle, such as a bucket or coffee can,

which has been buried flush with the substrate. Similarly, funnel traps can be placed along the drift fence to capture animals that are walking along the fence. This technique is covered in Heyer et al. (1994) and McDiarmid et al. (2012).

Coverboards. Coverboards are essentially any item sitting flush with the substrate under which an amphibian or reptile may seek refuge. Artificial coverboards are often made of plywood or corrugated tin and are placed in areas likely to harbor the species of interest. Coverboards often attract small mammals and invertebrates as well which may enhance their ability to attract amphibians and reptiles. Well-seasoned artificial cover objects with little vegetation underneath them seem to work better in attracting herptiles, therefore their use most effective for long term projects when they can be set out many months in advance of surveys.

Minnow Trap. Traps may be constructed of rope, monofilament, or steel and may have funnels or throats, at one or both ends which allow the animal to enter into the trap body but prevent them from easily exiting the trap. Minnow traps may be cylindrical or rectangular and can be baited or not depending on the target species. If baited, the bait is refreshed every 2 to 4 days. Traps are usually placed so that a portion of the trap placed in water is emergent so that captured animals have access to air and will not drown. However, in riverine environments, where there is little to no probability of capturing non-gilled species, the traps may be fully submerged. Effort is recorded in trap hours (i.e., number of traps multiplied by the number of hours the traps were deployed). Results are reported as the numbers of each species captured.

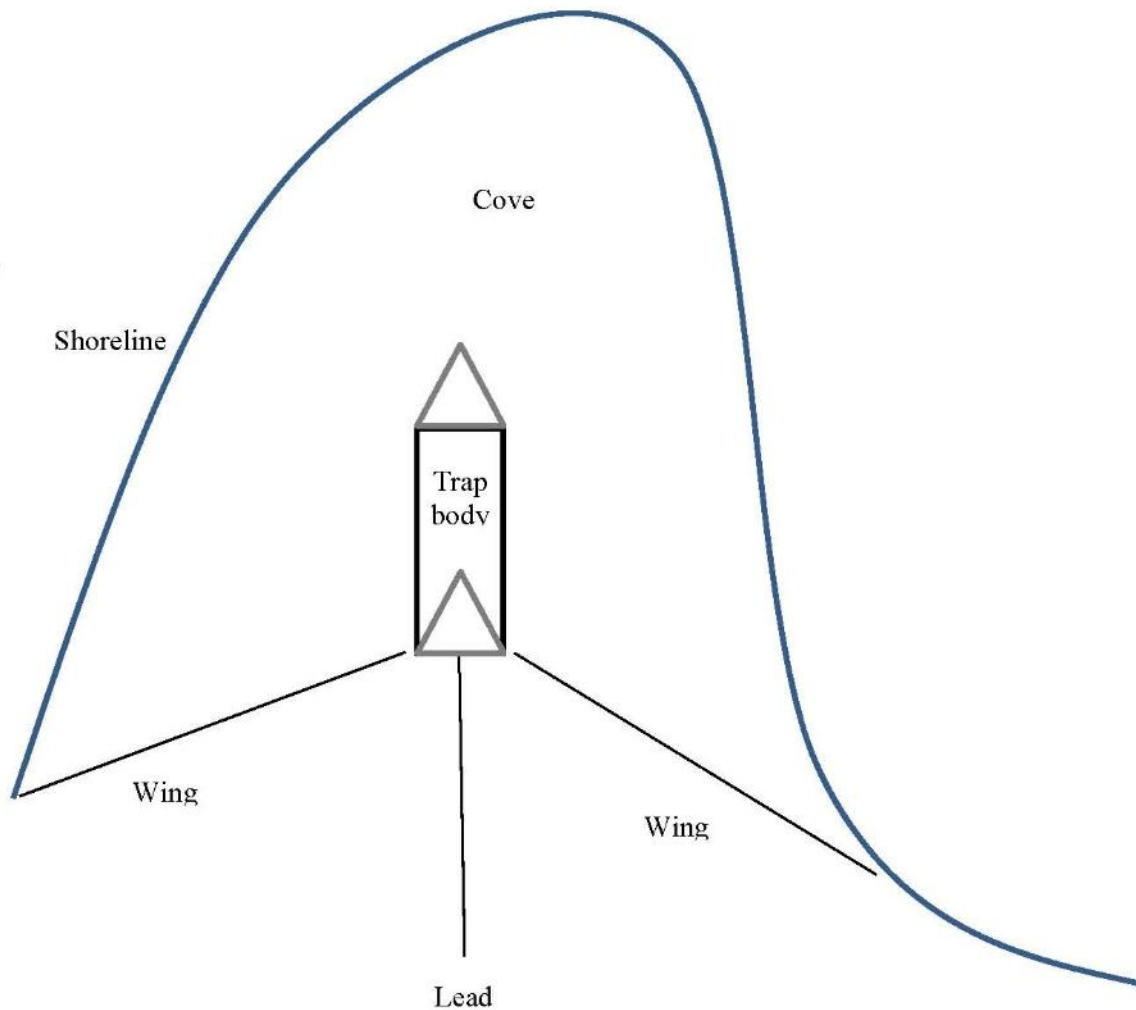
Hoop Trap. These traps work on the same principal as minnow traps but are larger in diameter and have larger throats to allow for the capture of larger animals such as turtles (Legler 1960). All hoop traps are placed such that at least 5cm of the trap is above the surface of the water to ensure captured turtles have access to air. Traps are tied via string or rope to surrounding vegetation to ensure that captured turtles do not roll traps into deeper water and drown. Traps are placed parallel to either the shoreline or potential basking sites. Traps are baited (usually with sardines canned in spring water or oil). Traps are checked daily and bait is changed every 2 to 4 days. Effort is recorded in trap hours (i.e., number of traps multiplied by the number of hours the traps were deployed). Results are reported as the numbers of each species captured.

Fyke Net. This trapping method is essentially a combination of a Drift Fence and a Hoop Trap. It consists of a hoop trap body with a single throat, and long wings and a lead that extend out from the throat in a double V formation (**Figure B.1**). Wings and leads have a lead-line that makes them hang vertically in the water column. This essentially extends the reach of the throat and works well for turtle species that are not attracted to readily available baits. It can be used to intercept turtles entering a cove or attempting to access a popular basking site, by funneling them into the trap body where the throat prevents them from escaping. A description of Fyke Nets can be found in Vogt (1980).

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Figure B.1. Fyke Net set to capture turtles attempting to enter a cove (as viewed from above).



APPENDIX C

Figure relevant to IDOT Sequence No: 13921 G; Rea's Bridge Road
(CH 24) over Lake Decatur in Macon County, Illinois

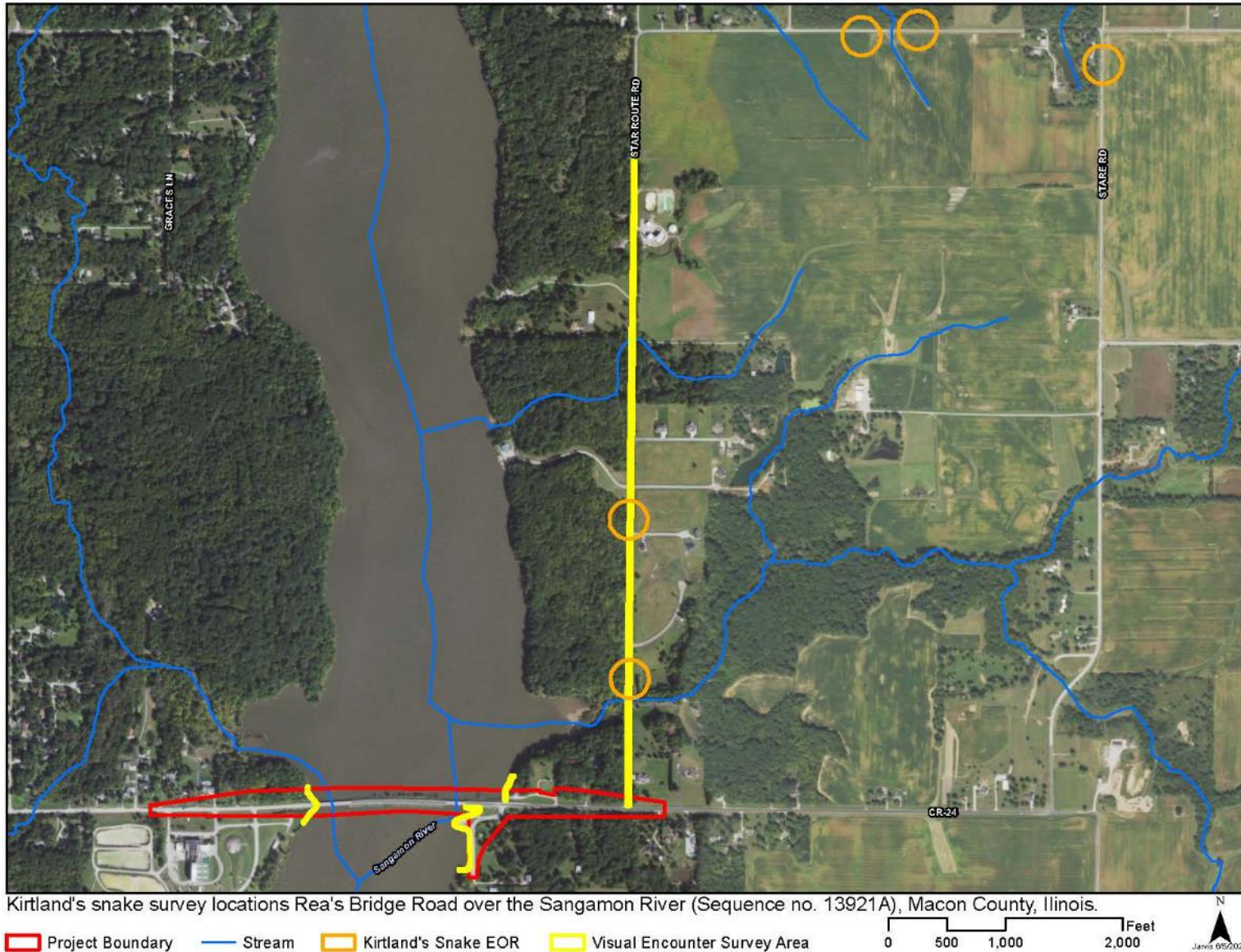


Figure C.1. Project limits, Visual Encounter Survey locations, and Element Occurrence Records (EOR) for Kirtland’s Snake for the Rea’s Bridge Road (CH 24) project tasking (IDOT Sequence No: 13921 G) in Macon County, Illinois.

APPENDIX D

Photographs of IDOT Sequence No: 13921 G; Rea's Bridge Road (CH 24)
over Lake Decatur in Macon County, Illinois.



Plate 1. Photograph, looking south from the west side of Lake Decatur towards Rea's Bridge Road (CH 24). The shoreline is poured concrete and there are no loose bank stabilization materials to search under. Photograph taken 20 May 2020 by Andrew R. Kuhns.



Plate 2. Photograph from the east side of the lake looking north towards the causeway leading Rea's Bridge Road (CH 24) over Lake Decatur. The shore is sparsely vegetated with large concrete chunks and pavers placed for bank stabilization. Photographs taken 20 May 2020 by Andrew R. Kuhns.

APPENDIX E

ArcGIS shapefile <13921G_Herp_Survey_GIS.zip>

APPENDIX 3 – Wetland Determination Report

**Macon County Beltway – Addendum G
Macon County, Illinois**

IDOT Sequence Number: 13921G



Prepared by:

Jason Bried, Ian Kenney, Suneeti Jog, Liz Miernicki, and Chad Hickman


INHS/IDOT Wetland Science Program

June 2020



Project Summary

A survey was conducted on May 19, 2020 to update the previous wetland determination report by Matthews et al. (2008) at Rea's Bridge Road over Lake Decatur in Macon County, Illinois. Three wetlands within the specified project area were reexamined and one site was added. The original boundaries delineated inside the project area remained intact. All sites met the three criteria of a wetland established in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (U.S. Army Corps of Engineers [USACE] 2010). Summary information regarding the wetland determinations is presented in the wetland project report. Wetland determination forms are found in Appendix A and wetland plant species lists are included in Appendix B. Wetland determination data points were recorded using a Trimble Global Navigation Satellite System (GNSS). The spatial data have been digitally uploaded to the Illinois Site Assessment Tracking System (<https://isats.dot.illinois.gov/login.aspx>). Locations of determination sites were overlaid on a digital aerial orthophoto using ArcGIS; the resulting figure is included in Appendix C. Additional maps and figures are also included in Appendix C.

Signed:  Date: May 30, 2020
 Brian W. Wilm
 INHS/IDOT Wetlands Program
 Leader and Principal Investigator

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Cover Photo: Site 3 facing south near the road embankment

Macon County Beltway – Addendum G

Macon County, Illinois

Introduction

A survey was conducted on May 19, 2020 to update the previous wetland determination report by Matthews et al. (2008) at Rea's Bridge Road over Lake Decatur in Macon County, Illinois. In the original report, three wetlands (Sites 4, 5, and 6) were identified and mapped immediately east of the bridge. We revisited each of those sites and searched the project area for other potential wetlands.

Methods

The original delineations and all other potential wetlands within the specified study area were examined. Characteristics of vegetation, soils, hydrology, and topography were evaluated during field investigation and on-site wetland determination. Locations of observation points for wetland determinations were selected based on plant community borders and topographic changes. The following sources were examined while surveying the project corridor to determine wetland locations and boundaries: aerial photographs; U.S. Geological Survey topographic map (Argenta 7.5 minute quadrangle); National Wetlands Inventory (NWI) website (USFWS 2017); the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987); the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE 2010); the USDA-NRCS *Official Series Descriptions*; and the USDA-NRCS *Web Soil Survey*. Positional inaccuracies are known to occur with downloaded sources of digital data listed above. As presented on maps and figures in this report, data can be shifted from their actual position when compared to modern aerial photography.

Wetland determinations were conducted using definitions and guidelines established in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE 2010). Since this project has a total area less than or equal to five acres, it was sampled based on plant community boundaries as outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). Data from these determinations were recorded on U.S. Army Corps of Engineers' Wetland Determination Data Forms – Midwest Region (Appendix A); a data form was completed at one sampling point. All potential wetlands, including all areas mapped as wetlands by the NWI, were described using at least one sampling point. Results of these determinations are summarized in the following text.

Wetland location data were recorded using a Trimble Global Navigation Satellite System (model GeoExplorer 6000 Series GeoXT), with a presumed accuracy of +/- 0.5 m under optimal field conditions. Spatial data were digitally uploaded to the Illinois Site Assessment Tracking System (<https://isats.dot.illinois.gov/login.aspx>). Locations of determination sites were overlaid on a digital aerial orthophoto and approximate area was determined for each wetland site using ArcGIS Pro v2.5.1 (ESRI 2020). Resulting areas are calculated in acres, reported to two decimal

places. Site location, with respect to the nearest road, was measured from the edge of the pavement and is reported to the nearest foot.

Each native plant species was assigned a “coefficient of conservatism” (C) (Taft et al. 1997), a subjective rating of species fidelity to undegraded natural communities, ranging from zero to ten. Conservative species - those more likely to be found in “pristine” natural areas - were assigned high numbers, whereas non-conservative species - those that occur in anthropogenically disturbed areas - were given lower numbers. Non-native species and those not identifiable to species level were not assigned a rating. The Floristic Quality Index (FQI) is computed as $FQI = (\text{mean } C) \times (\sqrt{N})$, where mean C is the mean coefficient of conservatism for all native plant species at a site and N is the total number of native plant species at the site. In very general terms, higher FQI values for plant communities indicate more similarity to “pristine” natural areas, as compared to those communities with lower FQI values. Botanical nomenclature follows *Vascular Flora of Illinois* (Mohlenbrock 2002), while wetland indicator status for each species follows *National Wetland Plant List, version 3.3* (USACE 2016, Lichvar et al. 2016).

Wetland Determination Site Summaries

Site Number: 1

Community type: **Marsh**

National Wetlands Inventory code: **U (upland)**

Site location: **18 feet east of Sangamon Road and 208 feet south of Rea’s Bridge Road**

Hydrophytic Vegetation? **Yes** Hydric Soils? **Yes** Wetland Hydrology? **Yes**

Is this site a wetland? **Yes**

Area of site occurring within the project corridor: **0.07 ac**

Total site area: **0.07 ac**

Mean Coefficient of Conservatism (mean C): **2.4**

Floristic Quality Index (FQI): **10.4**

Additional remarks: **This was Site 4 in the original report.**

Site Number: 2

Community type: **Wet meadow**

National Wetlands Inventory code: **U (upland)**

Site location: **65 feet south of Rea’s Bridge Road**

Hydrophytic Vegetation? **Yes** Hydric Soils? **Yes** Wetland Hydrology? **Yes**

Is this site a wetland? **Yes**

Area of site occurring within the project corridor: **0.06 ac**

Total site area: **0.20 ac**

Mean Coefficient of Conservatism (mean C): **2.4**

Floristic Quality Index (FQI): **13.3**

Additional remarks: **This wet meadow (Site 5 in the original report) appears to be fed by groundwater and may be classified as a seep community.**

Site Number: 3Community type: **Sedge meadow**National Wetlands Inventory code: **U (upland)**Site location: **21 feet south of Rea's Bridge Road**Hydrophytic Vegetation? **Yes** Hydric Soils? **Yes** Wetland Hydrology? **Yes**Is this site a wetland? **Yes**Area of site occurring within the project corridor: **0.09 ac**Total site area: **0.33 ac**Mean Coefficient of Conservatism (mean C): **2.9** Floristic Quality Index (FQI): **18.0**

Additional remarks: **This wetland was classified in Matthews et al. (2008) as wet meadow. We changed it to sedge meadow due to the dominance of common tussock sedge (*Carex stricta*); see Appendix B. This was site 6 in the original report.**

Site Number: 4Community type: **Wet meadow**National Wetlands Inventory code: **U (upland)**Site location: **34 feet north of Rea's Bridge Road and 612 feet west of Star Route Road**Hydrophytic Vegetation? **Yes** Hydric Soils? **Yes** Wetland Hydrology? **Yes**Is this site a wetland? **Yes**Area of site occurring within the project corridor: **0.10 ac**Total site area: **0.10 ac**Mean Coefficient of Conservatism (mean C): **2.4** Floristic Quality Index (FQI): **8.4**

Additional remarks: **This site is an excavated channel/ditch and was not identified in the original report.**

Stream DescriptionSite name: **Lake Decatur/Sangamon River**Site location: **Rea's Bridge Road over Lake Decatur**Community type: **River**National Wetlands Inventory code: **L1UBHh (diked/impounded, permanently flooded, unconsolidated bottom, limnetic, lacustrine wetland)**USGS 8-Digit Hydrologic Unit Code (HUC): **07130006 (Upper Sangamon)**Watershed area: **808.87 mi² (U.S. Geological Survey 2018)**Riffles observed? **Yes** Pools observed? **Yes**Mussel shell material observed? **No**Is the stream or body of water perennial/intermittent/ephemeral? **Perennial**Is the stream identified by IDNR (2008) as a biologically significant stream? **No**Stream Integrity Rating: **None** Stream Diversity Rating: **None**

Threatened/Endangered Species

The project area was tasked for an active season survey for the Kirtland's snake and its preferred habitat. Surveys are currently underway, and so far, no snakes have been found, but the habitat for them does exist (A. Kuhns, INHS Aquatic Ecologist, pers. comm., 28-May-2020).

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APPENDIX A

Wetland Determination Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Macon County Beltway - Addendum G City/County: Macon Sampling Date 5/19/2020
 Applicant/Owner: IDOT District 7 State: IL Sampling Point 1A
 Investigator(s): Bried, Kenney, Jog, and Miernicki Section, Township, Range: Sec. 34, T17N, R3E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2 Lat: 39.88214 Long: -88.85978 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Orthents, loamy, undulating; revised to Aquents NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: Community type is marsh. Marsh area borders a small pond	

VEGETATION -Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft radius</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
1. <u>Salix nigra</u>	10	Yes	OBL	
2. _____				
3. _____				
4. _____				
5. _____				
_____ 10 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft radius</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index =B/A = _____
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ 0 = Total Cover				
Herb Stratum (Plot size: <u>5 ft radius</u>)				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2-Dominance Test is >50% <input type="checkbox"/> 3-Prevalence Index is < or =3.0 ¹ <input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	50	Yes	FACW	
2. <u>Lemna minor</u>	5	No	OBL	
3. <u>Typha angustifolia</u>	5	No	OBL	
4. <u>Rumex verticillatus</u>	1	No	OBL	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ 61 = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)				Hydrophytic Vegetation Present? <u>Yes</u>
1. _____				
2. _____				
_____ 0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: 1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	2.5Y 5/1	88	7.5YR 4/6	12	C	M	SIL	
6-13	2.5Y 5/1	30					SIL	
6-13	10YR 4/4	70						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

² Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric Soil Present? <u>Yes</u></p>
--	---

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply)</p> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<p>Secondary Indicators (minimum of two is required)</p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<p>Field Observations: Surface Water Present? <u>Yes</u> Depth (inches): <u>10</u> Water Table Present? <u>Yes</u> Depth (inches): <u>0</u> Saturation Present? <u>Yes</u> Depth (inches): <u>0</u> (includes capillary fringe)</p>	<p>Wetland Hydrology Present? <u>Yes</u></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Macon County Beltway - Addendum G City/County: Macon Sampling Date 5/19/2020
 Applicant/Owner: IDOT District 7 State: IL Sampling Point 2A
 Investigator(s): Bried, Kenney, Jog, and Miernicki Section, Township, Range: Sec. 34, T17N, R3E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-3 Lat: 39.88250 Long: -88.85873 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Orthents, loamy, undulating; revised to Aquents NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: Community type is wet meadow. Appears to be fed by groundwater seepage and may be classified as a seep community	

VEGETATION -Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index =B/A = _____
Sapling/Shrub Stratum (Plot size: 15 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
<u>0</u> = Total Cover				
Herb Stratum (Plot size: 5 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Equisetum arvense</u>	30	Yes	FAC	
2. <u>Impatiens capensis</u>	30	Yes	FACW	
3. <u>Phalaris arundinacea</u>	30	Yes	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>90</u> = Total Cover				
Woody Vine Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
<u>0</u> = Total Cover				
Hydrophytic Vegetation Indicators <input type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2-Dominance Test is >50% <input type="checkbox"/> 3-Prevalence Index is < or =3.0 ¹ <input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? <u>Yes</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: 2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	2.5Y 3/1	100					SIL	
2-13	2.5Y 4/2	96	10YR 4/6	4	C	M	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
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<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric Soil Present? <u>Yes</u></p>
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Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply)</p> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (minimum of two is required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
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<p>Field Observations: Surface Water Present? <u>Yes</u> Depth (inches): <u>4</u> Water Table Present? <u>Yes</u> Depth (inches): <u>0</u> Saturation Present? <u>Yes</u> Depth (inches): <u>0</u> (includes capillary fringe)</p>	<p>Wetland Hydrology Present? <u>Yes</u></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Macon County Beltway - Addendum G City/County: Macon Sampling Date 5/19/2020
 Applicant/Owner: IDOT District 7 State: IL Sampling Point 3A
 Investigator(s): Bried, Kenney, Jog, and Miernicki Section, Township, Range: Sec. 34, T17N, R3E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2 Lat: 39.88255 Long: -88.85640 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Senachwine SIL, 18-35% slopes; revised to Aquents NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: Community type is sedge meadow. Classified in 2007 as wet meadow; changed to sedge meadow due to the dominance of common tussock sedge (<i>Carex stricta</i>)	

VEGETATION -Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft radius</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ 0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft radius</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index =B/A = _____
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ 0 = Total Cover				
Herb Stratum (Plot size: <u>5 ft radius</u>)				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2-Dominance Test is >50% <input type="checkbox"/> 3-Prevalence Index is < or =3.0 ¹ <input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Carex stricta</u>	60	Yes	OBL	
2. <u>Phalaris arundinacea</u>	30	Yes	FACW	
3. <u>Equisetum arvense</u>	5	No	FAC	
4. <u>Impatiens capensis</u>	5	No	FACW	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ 100 = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)				Hydrophytic Vegetation Present? <u>Yes</u>
1. _____				
2. _____				
_____ 0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: 3A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-13	2.5Y 4/1	94	10YR 4/6	6	C	M	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

² Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)
	<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? <u>Yes</u>
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two is required)
Primary Indicators (minimum of one is required: check all that apply)	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? <u>Yes</u> Depth (inches): <u>6</u> Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>Yes</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Macon County Beltway - Addendum G City/County: Macon Sampling Date 5/19/2020
 Applicant/Owner: IDOT District 7 State: IL Sampling Point 4A
 Investigator(s): Bried, Kenney, Jog, and Miernicki Section, Township, Range: Sec. 34, T17N, R3E
 Landform (hillslope, terrace, etc.): Excavated channel/ditch Local relief (concave, convex, none): Concave
 Slope (%): 0-2 Lat: 39.88289 Long: -88.85791 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Orthents, loamy, undulating; revised to Aquents NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: <u>Community type is wet meadow.</u>	

VEGETATION -Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft radius</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ 0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft radius</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals _____ (A) _____ (B) Prevalence Index =B/A = _____
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ 0 = Total Cover				
Herb Stratum (Plot size: <u>5 ft radius</u>)				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2-Dominance Test is >50% <input type="checkbox"/> 3-Prevalence Index is < or =3.0 ¹ <input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Carex annectens</u>	35	Yes	FACW	
2. <u>Scirpus atrovirens</u>	35	Yes	OBL	
3. <u>Lysimachia nummularia</u>	5	No	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ 75 = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)				Hydrophytic Vegetation Present? <u>Yes</u>
1. _____				
2. _____				
_____ 0 = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: 4A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-13	2.5Y 4/1	95	10YR 4/6	5	C	M	SIL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
---	---	---

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric Soil Present? <u>Yes</u></p>
--	--

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<p>Secondary Indicators (minimum of two is required)</p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
---	---	---

<p>Field Observations: Surface Water Present? <u>No</u> Depth (inches): <u>0</u> Water Table Present? <u>Yes</u> Depth (inches): <u>0</u> Saturation Present? <u>Yes</u> Depth (inches): <u>0</u> (includes capillary fringe)</p>	<p>Wetland Hydrology Present? <u>Yes</u></p>
---	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

Wetland Plant Species Lists

Project Title: Macon County Beltway - Addendum G
Site 1 - Marsh

Sequence No: 13921G

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Lemna minor</i>	small duckweed	H	OBL	3
<i>Phalaris arundinacea</i> *	reed canary grass	H	FACW	-
<i>Salix nigra</i>	black willow	T	OBL	3
<i>Acer negundo</i>	box elder	H	FAC	1
<i>Acer saccharinum</i>	silver maple	HT	FACW	1
<i>Bidens comosa</i>	swamp tickseed	H	OBL	2
<i>Bidens connata</i>	purple-stemmed tickseed	H	OBL	2
<i>Carex cephalophora</i>	short-headed bracted sedge	H	FACU	3
<i>Carex stricta</i>	common tussock sedge	H	OBL	5
<i>Conium maculatum</i> *	poison hemlock	H	FACW	-
<i>Cornus obliqua</i>	pale dogwood	H	FACW	4
<i>Eleocharis ovata var. obtusa</i>	blunt spike rush	H	OBL	2
<i>Galium aparine</i>	annual bedstraw	H	FACU	0
<i>Geum canadense</i>	white avens	H	FAC	2
<i>Gleditsia triacanthos</i> *	honey locust	S	FACU	-
<i>Lamium purpureum</i> *	purple dead nettle	H	UPL	-
<i>Morus alba</i> *	white mulberry	H	FAC	-
<i>Parthenocissus quinquefolia</i>	Virginia creeper	W	FACU	2
<i>Rosa multiflora</i> *	Japanese rose	H	FACU	-
<i>Rumex verticillatus</i>	swamp dock	H	OBL	5
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1
<i>Toxicodendron radicans</i>	poison ivy	H	FAC	1
<i>Typha angustifolia</i> *	narrow-leaved cattail	H	OBL	-
<i>Ulmus rubra</i>	slippery elm	HS	FAC	3
<i>Vitis vulpina</i>	frost grape	W	FAC	4

*Non-native species **Bold** = species is dominant in the denoted stratum
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine

Mean C = 2.4
FQI = 10.4

Site 2 - Wet meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Equisetum arvense</i>	common horsetail	H	FAC	0
<i>Impatiens capensis</i>	spotted touch-me-not	H	FACW	2
<i>Phalaris arundinacea</i>*	reed canary grass	H	FACW	-
<i>Acer saccharinum</i>	silver maple	HT	FACW	1
<i>Aesculus glabra</i>	Ohio buckeye	S	FAC	5
<i>Apocynum cannabinum</i>	dogbane	H	FAC	2
<i>Barbarea vulgaris</i> *	winter cress	H	FAC	-
<i>Boehmeria cylindrica</i>	false nettle	H	OBL	3
<i>Carex annectens</i>	large yellow fox sedge	H	FACW	3
<i>Celtis occidentalis</i>	hackberry	T	FAC	3
<i>Erigeron philadelphicus</i>	marsh fleabane	H	FACW	3
<i>Eupatorium perfoliatum</i>	common boneset	H	OBL	4
<i>Galium aparine</i>	annual bedstraw	H	FACU	0
<i>Geum canadense</i>	white avens	H	FAC	2
<i>Geum vernum</i>	spring avens	H	FACU	1
<i>Glechoma hederacea</i> *	ground ivy	H	FACU	-
<i>Glyceria striata</i>	fowl manna grass	H	OBL	4
<i>Juglans nigra</i>	black walnut	S	FACU	4
<i>Lonicera maackii</i> *	Amur honeysuckle	S	UPL	-
<i>Lycopus americanus</i>	common water horehound	H	OBL	3
<i>Morus alba</i> *	white mulberry	T	FAC	-
<i>Onoclea sensibilis</i>	sensitive fern	H	FACW	5
<i>Ranunculus abortivus</i>	little-leaf buttercup	H	FACW	1
<i>Ranunculus sceleratus</i>	cursed crowfoot	H	OBL	3
<i>Ribes missouriense</i>	Missouri gooseberry	S	UPL	2
<i>Rosa multiflora</i> *	Japanese rose	S	FACU	-
<i>Rubus occidentalis</i>	black raspberry	S	UPL	2
<i>Sagittaria latifolia</i>	common arrowhead	H	OBL	4
<i>Salix nigra</i>	black willow	T	OBL	3
<i>Sanicula odorata</i>	clustered black snakeroot	H	FAC	2
<i>Senecio glabellus</i>	butterweed	H	FACW	0
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1
<i>Symphoricarpos orbiculatus</i>	coralberry	S	FACU	1
<i>Taraxacum officinale</i> *	common dandelion	H	FACU	-
<i>Teucrium canadense</i>	germander	H	FACW	3
<i>Toxicodendron radicans</i>	poison ivy	H	FAC	1
<i>Trifolium pratense</i> *	red clover	H	FACU	-
<i>Ulmus rubra</i>	slippery elm	T	FAC	3
<i>Viola sororia</i>	woolly blue violet	H	FAC	3

*Non-native species **Bold** = species is dominant in the denoted stratum
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine

Mean C = 2.4
FQI = 13.3

Site 3 - Sedge meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Carex stricta</i>	common tussock sedge	H	OBL	5
<i>Equisetum arvense</i>	common horsetail	H	FAC	0
<i>Acer saccharinum</i>	silver maple	HS	FACW	1
<i>Arisaema dracontium</i>	green dragon	H	FACW	4
<i>Barbarea vulgaris</i> *	winter cress	H	FAC	-
<i>Cardamine bulbosa</i>	bulb bittercress	H	OBL	5
<i>Carex annectens</i>	large yellow fox sedge	H	FACW	3
<i>Celastrus orbiculatus</i> *	oriental bittersweet	S	UPL	-
<i>Celtis occidentalis</i>	hackberry	S	FAC	3
<i>Cinna arundinacea</i>	common wood reed	H	FACW	5
<i>Dactylis glomerata</i> *	orchard grass	H	FACU	-
<i>Dioscorea villosa</i>	wild yam	H	FAC	4
<i>Elaeagnus umbellata</i> *	autumn olive	S	UPL	-
<i>Erigeron philadelphicus</i>	marsh fleabane	H	FACW	3
<i>Eupatorium perfoliatum</i>	common boneset	H	OBL	4
<i>Galium aparine</i>	annual bedstraw	H	FACU	0
<i>Geum canadense</i>	white avens	H	FAC	2
<i>Gleditsia triacanthos</i>	honey locust	S	FACU	2
<i>Glyceria striata</i>	fowl manna grass	H	OBL	4
<i>Impatiens capensis</i>	spotted touch-me-not	H	FACW	2
<i>Juglans nigra</i>	black walnut	S	FACU	4
<i>Juniperus virginiana</i>	eastern red cedar	S	FACU	1
<i>Lamium purpureum</i> *	purple dead nettle	H	UPL	-
<i>Leersia oryzoides</i>	rice cut grass	H	OBL	3
<i>Lythrum salicaria</i> *	purple loosestrife	H	OBL	-
<i>Maclura pomifera</i> *	hedge apple	T	FACU	-
<i>Parthenocissus quinquefolia</i>	Virginia creeper	H	FACU	2
<i>Persicaria amphibia</i>	water knotweed	H	OBL	3
<i>Phalaris arundinacea</i> *	reed canary grass	H	FACW	-
<i>Phragmites australis</i>	American reed	H	FACW	1
<i>Poa pratensis</i> *	Kentucky blue grass	H	FAC	-
<i>Quercus alba</i>	white oak	T	FACU	5
<i>Quercus muhlenbergii</i>	chinquapin oak	T	FACU	5
<i>Ranunculus abortivus</i>	little-leaf buttercup	H	FACW	1
<i>Ranunculus sceleratus</i>	cursed crowfoot	H	OBL	3
<i>Ranunculus septentrionalis</i>	swamp buttercup	H	FAC	4
<i>Ribes missouriense</i>	Missouri gooseberry	S	UPL	2
<i>Rosa multiflora</i> *	Japanese rose	S	FACU	-
<i>Salix amygdaloides</i>	peach-leaved willow	S	FACW	4
<i>Salix nigra</i>	black willow	T	OBL	3
<i>Sanicula odorata</i>	clustered black snakeroot	H	FAC	2
<i>Senecio glabellus</i>	butterweed	H	FACW	0
<i>Smilax tamnoides</i>	bristly green brier	H	FAC	3
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1
<i>Solidago gigantea</i>	late goldenrod	H	FACW	3
<i>Symphoricarpos orbiculatus</i>	coralberry	S	FACU	1

Species list continued on following page

Site 3 - Sedge meadow (continued)

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Toxicodendron radicans</i>	poison ivy	H	FAC	1
<i>Triadenum fraseri</i>	Fraser's St. John's-wort	H	OBL	8
<i>Ulmus rubra</i>	slippery elm	T	FAC	3
<i>Viburnum prunifolium</i>	black haw	S	FACU	4
*Non-native species Bold = species is dominant in the denoted stratum			Mean C =	2.9
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine			FQI =	18.0

Site 4 - Wet meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Carex annectens</i>	large yellow fox sedge	H	FACW	3
<i>Carex stricta</i>	common tussock sedge	H	OBL	5
<i>Phalaris arundinacea</i>*	reed canary grass	H	FACW	-
<i>Scirpus atrovirens</i>	dark green rush	H	OBL	4
<i>Carex sp.</i>	sedge	H	-	-
<i>Eleocharis ovata var. obtusa</i>	blunt spike rush	H	OBL	2
<i>Equisetum arvense</i>	common horsetail	H	FAC	0
<i>Erigeron philadelphicus</i>	marsh fleabane	H	FACW	3
<i>Juncus tenuis</i>	path rush	H	FAC	0
<i>Lycopus virginicus</i>	bugle weed	H	OBL	5
<i>Lysimachia nummularia</i> *	moneywort	H	FACW	-
<i>Medicago lupulina</i> *	black medic	H	FACU	-
<i>Poa annua</i> *	annual blue grass	H	FACU	-
<i>Ranunculus abortivus</i>	little-leaf buttercup	H	FACW	1
<i>Ranunculus sceleratus</i>	cursed crowfoot	H	OBL	3
<i>Rumex crispus</i> *	curly dock	H	FAC	-
<i>Senecio glabellus</i>	butterweed	H	FACW	0
<i>Stellaria media</i> *	common chickweed	H	FACU	-
<i>Trifolium pratense</i> *	red clover	H	FACU	-
<i>Typha angustifolia</i> *	narrow-leaved cattail	H	OBL	-
<i>Verbena urticifolia</i>	white vervain	H	FAC	3
*Non-native species Bold = species is dominant in the denoted stratum			Mean C =	2.4
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine			FQI =	8.4

APPENDIX C

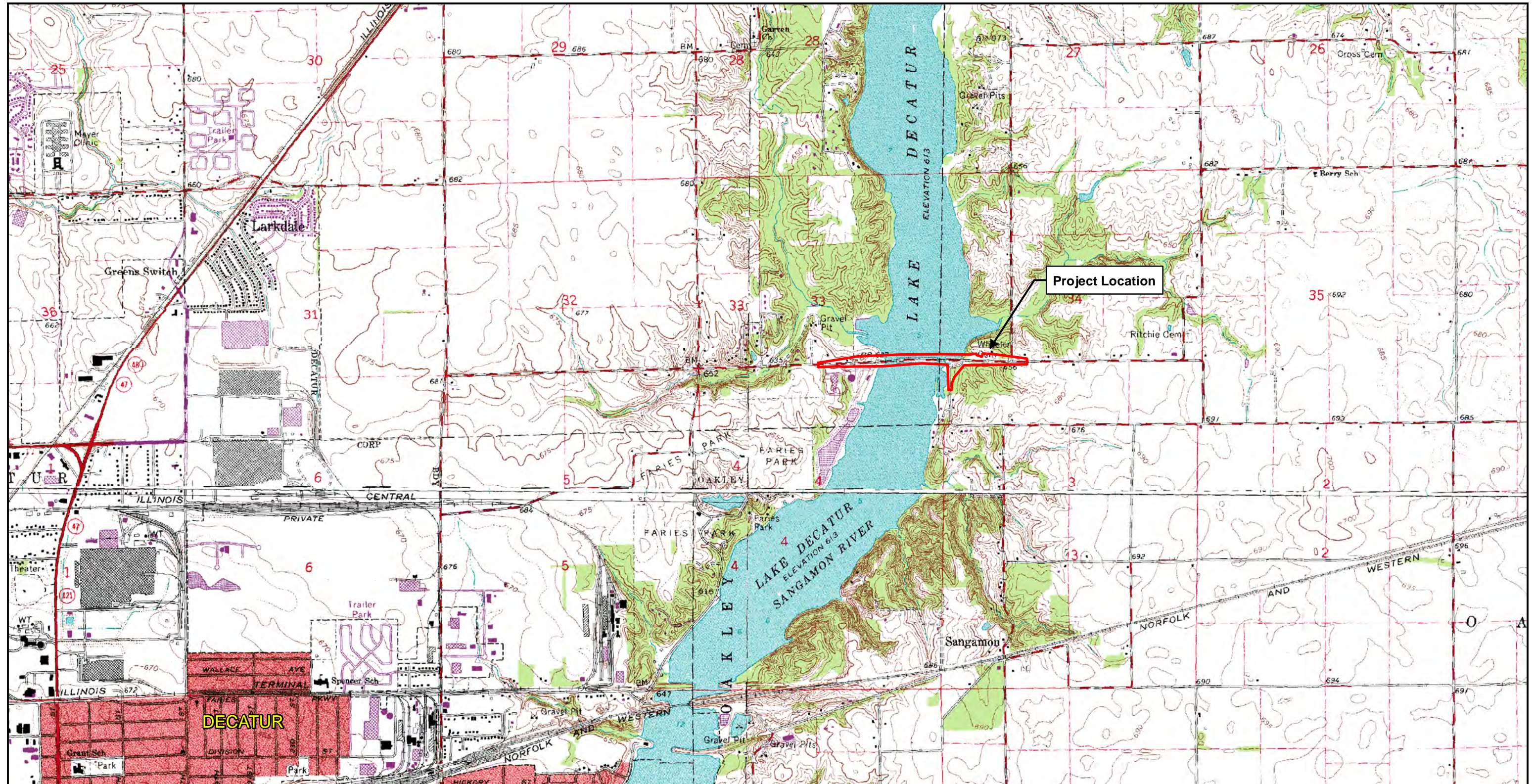
Figures

Figure 1 – Project Location Map

Figure 2 – National Wetlands Inventory Map

Figure 3 – Wetland Determination Overview Map

Figure 4 – Wetland Determination Maps



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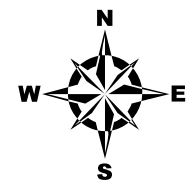
Figure 1
Project Location Map
Macon County Beltway - Addendum G
Macon County

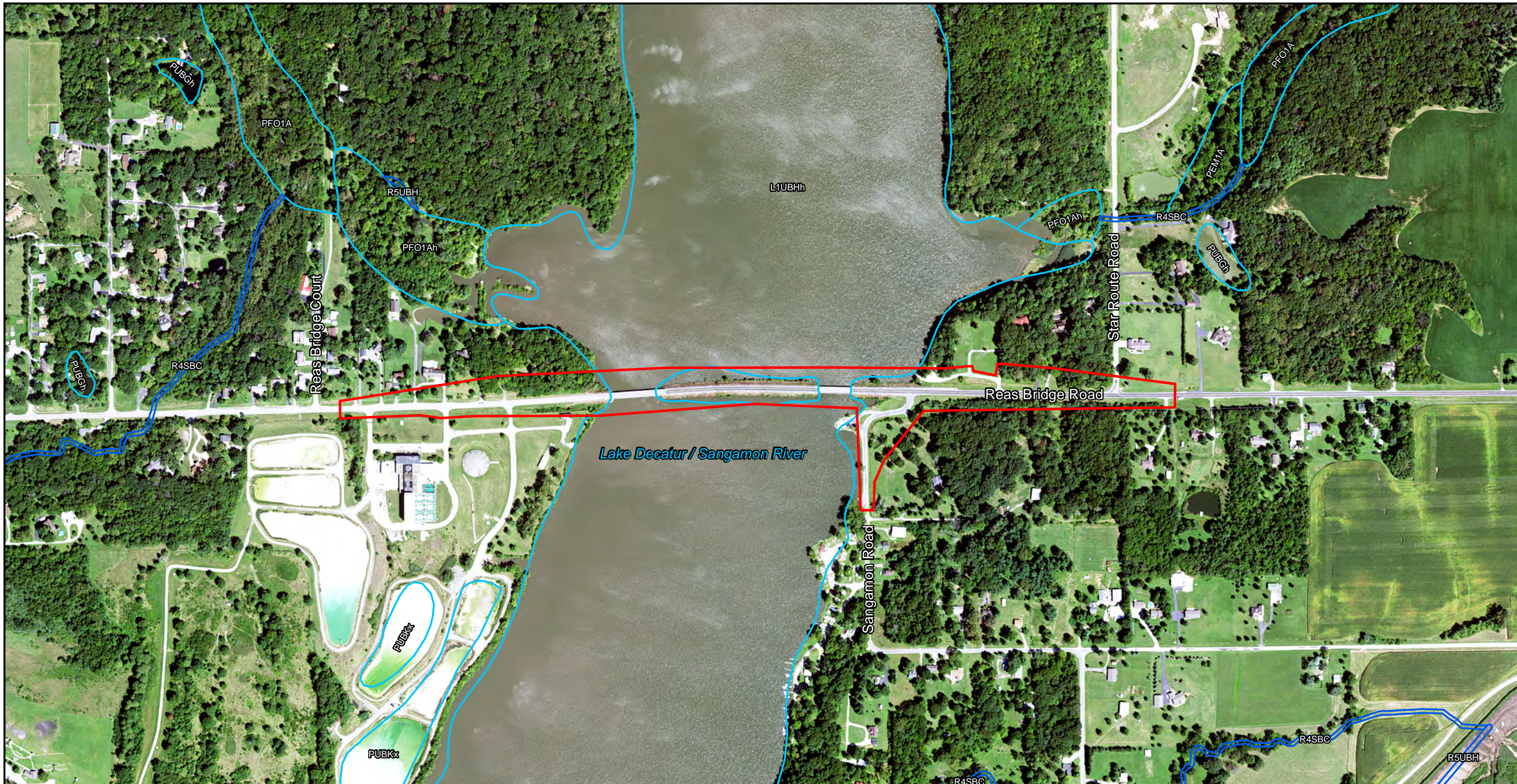
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0 Meters 500

0 Feet 2,000

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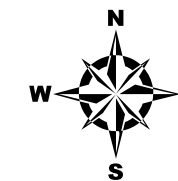
Figure 2
National Wetlands Inventory Map
Macon County Beltway - Addendum G
Macon County

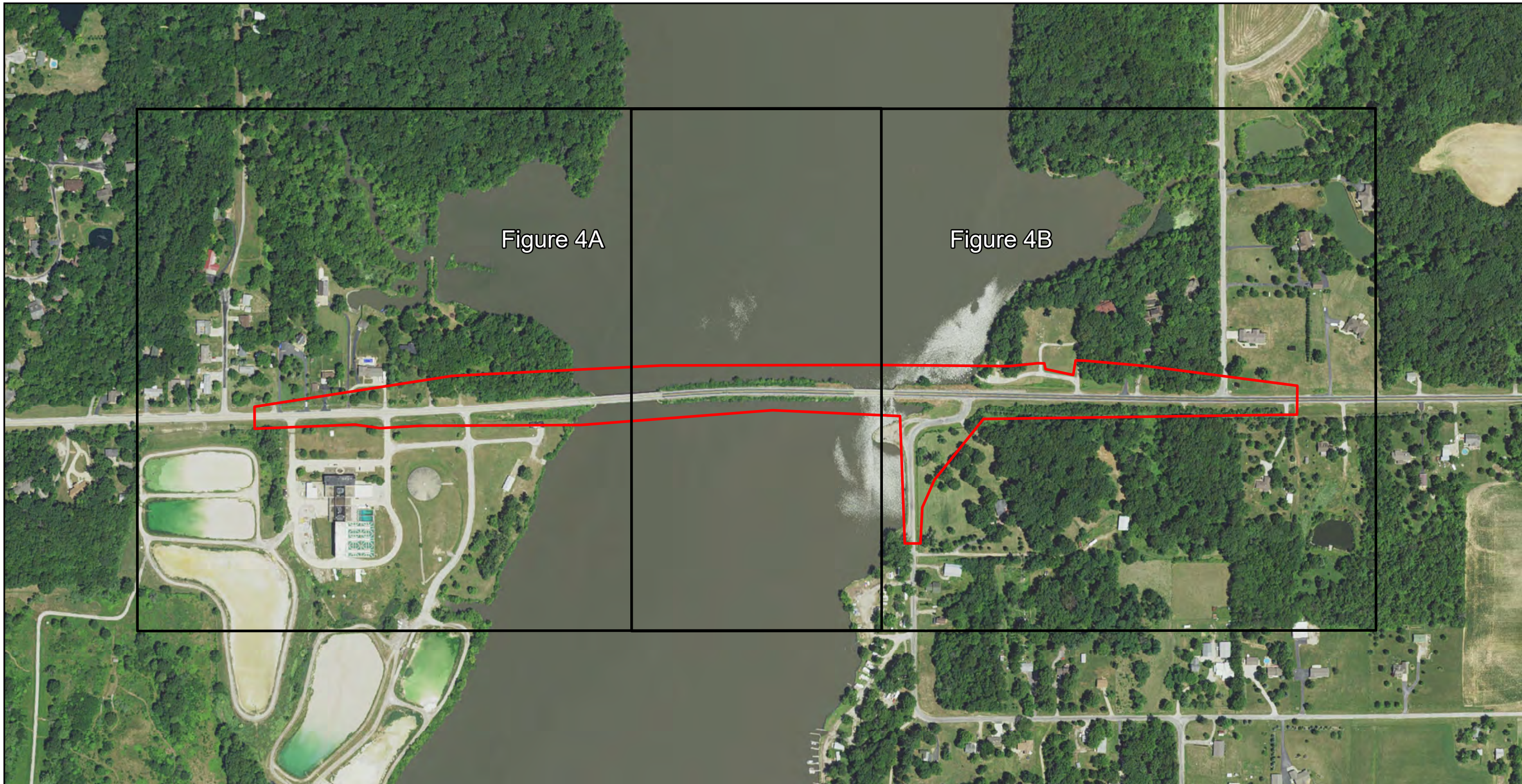
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0 Meters 200

0 Feet 500

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Figure 3
Wetland Determination Overview Map
Macon County Beltway - Addendum G
Macon County

Seq. No: 13921G

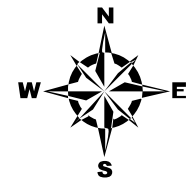
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June 2020



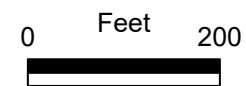
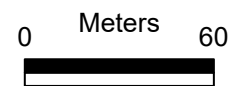


-  Sampling Points
-  Wetland Sites
-  Project Boundary

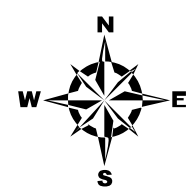
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Figure 4A
Wetland Determination Map
Macon County Beltway - Addendum G
Macon County




Seq. No: 13921G



June 2020





-  Sampling Points
-  Wetland Sites
-  Project Boundary

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Figure 4B
Wetland Determination Map
Macon County Beltway - Addendum G
Macon County

Seq. No: 13921G

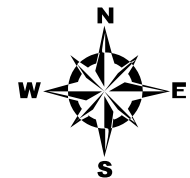
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0 Feet 200



June 2020

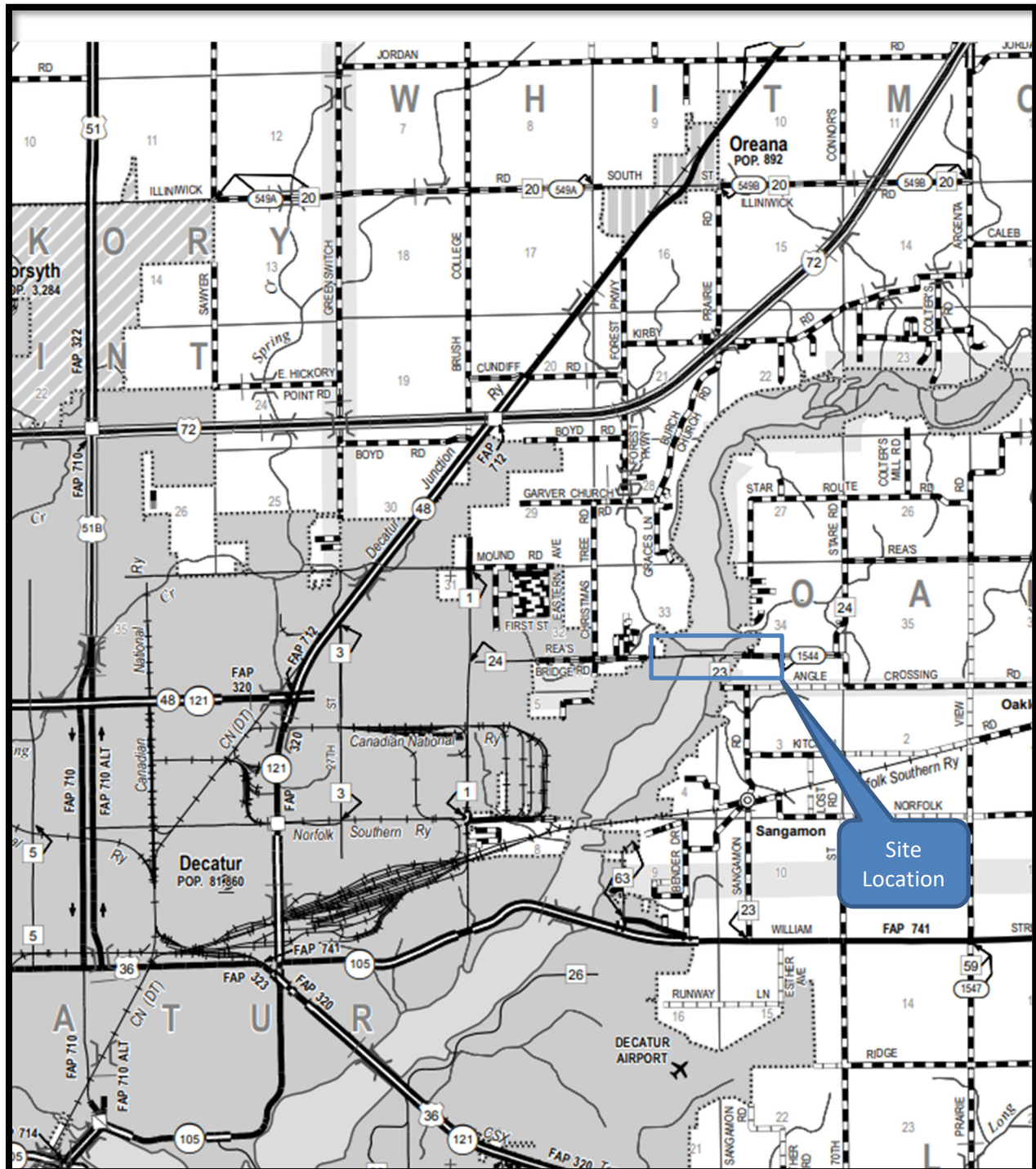


APPENDIX 4 – Maps and Location Exhibits

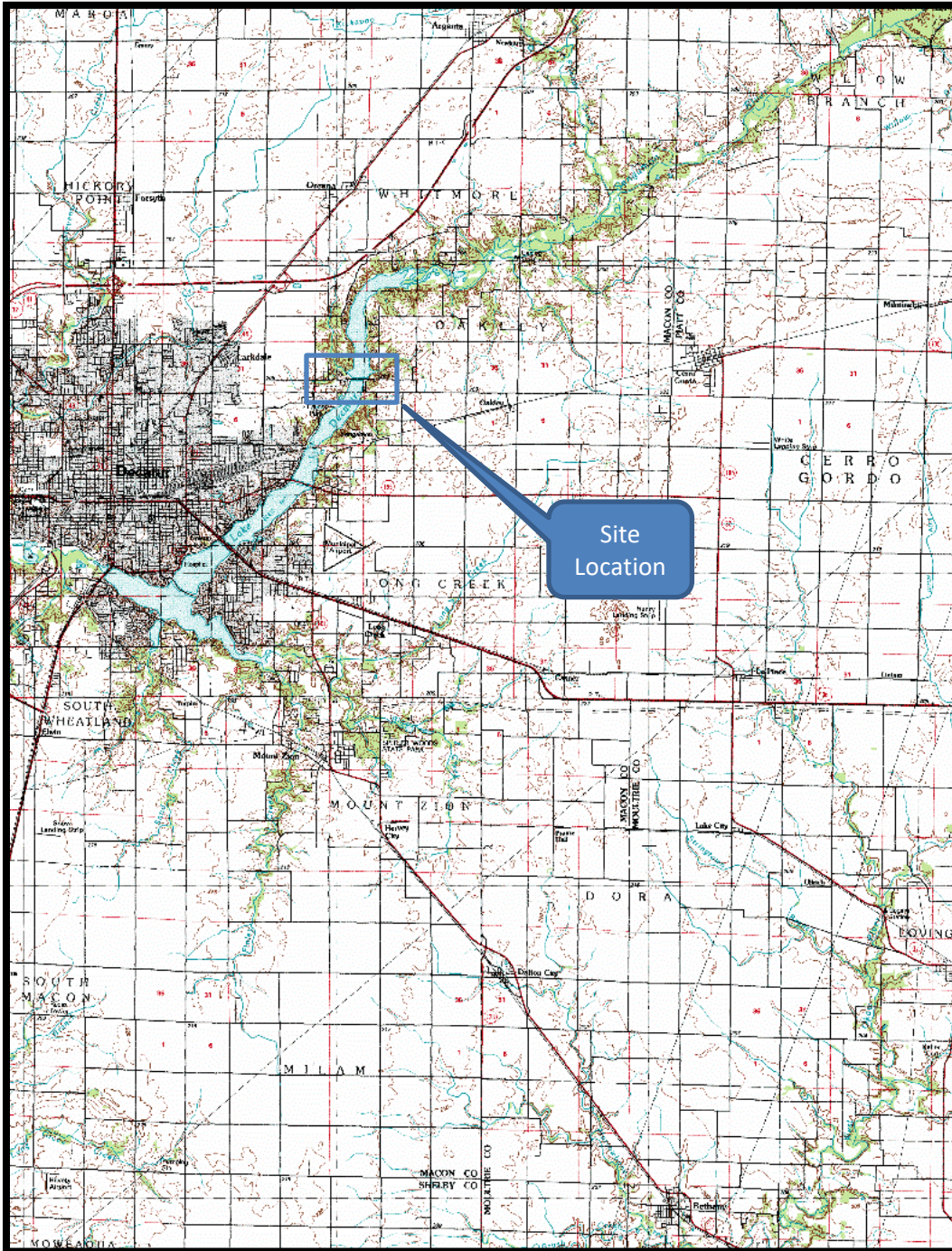
CHASTAIN & ASSOCIATES LLC

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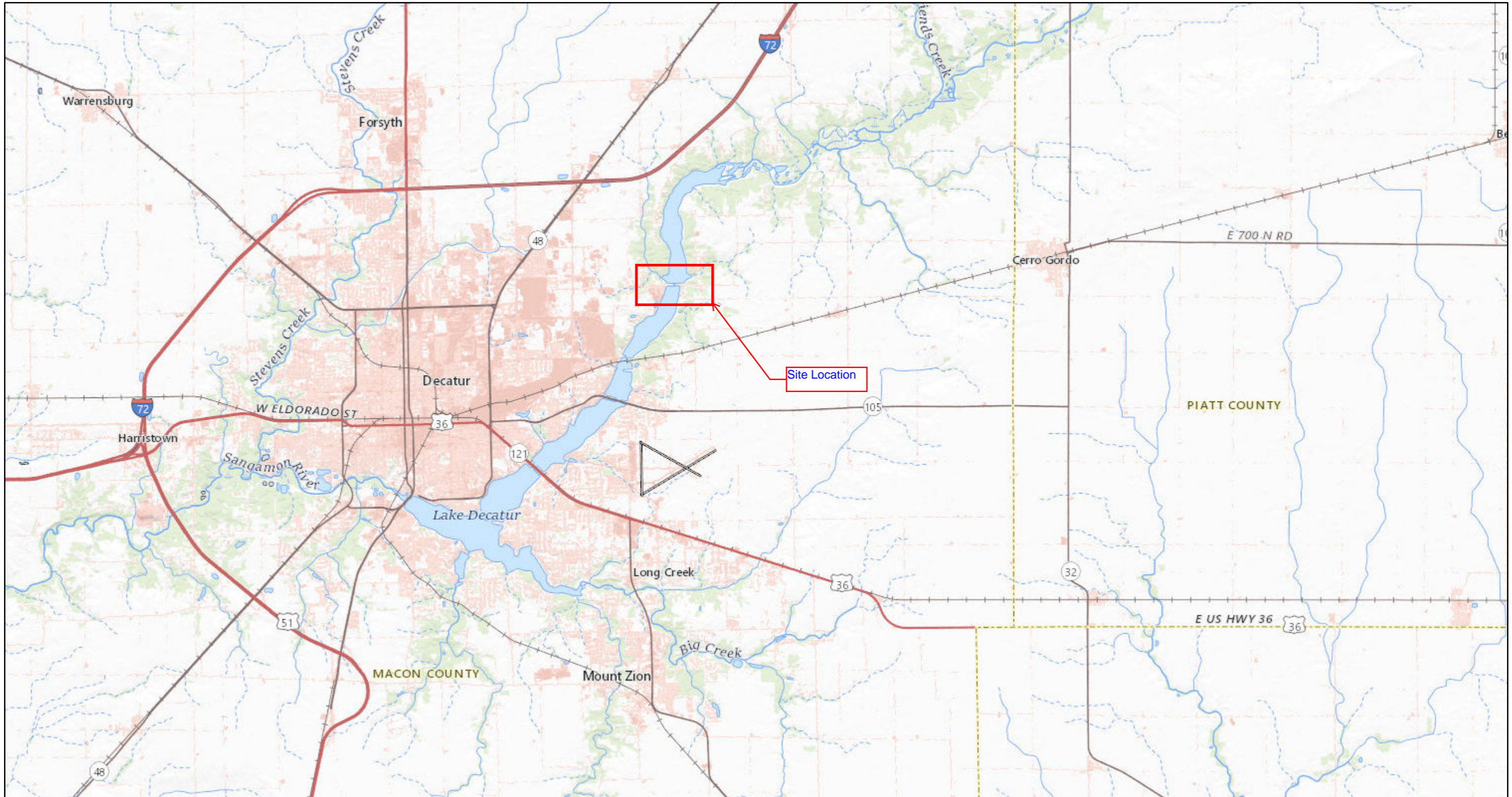


Attachment 1: Project Location Map
Macon County Hwy Map



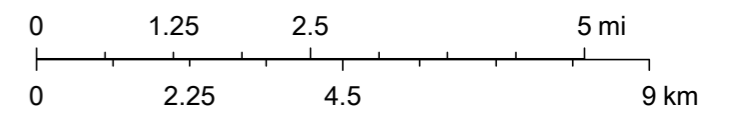
Attachment 2: Project Location Map
USGS 100k Topographic Series (Decatur)

The National Map Advanced Viewer



12/8/2020, 3:34:19 PM

1:144,448

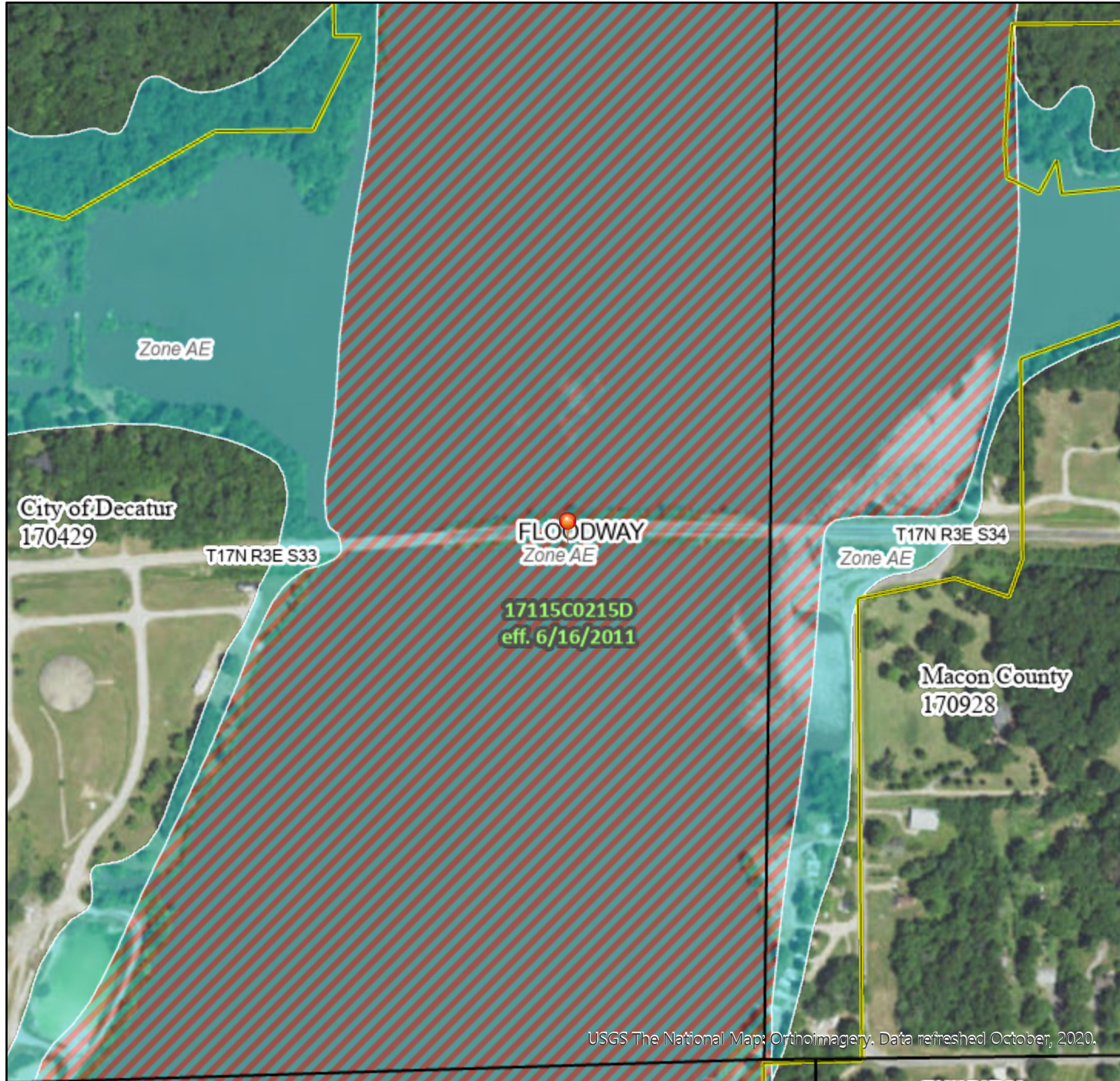


USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS

National Flood Hazard Layer FIRMMette



88°52'4"W 39°53'11"N



USGS The National Map, Orthoimagery. Data refreshed October, 2020.



88°51'27"W 39°52'44"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/8/2020 at 4:18 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX 5 – Photographs



Photo 1 – Looking East Along South Side of Road from West End of Project



Photo 2 – Looking East Along North Side of Road from West End of Project



Photo 3 – Looking East Along South Side of Road West of West Bridge



Photo 4 – Looking East Along North Side of Road West of West Bridge



Photo 5 – Looking East Along South Side of Road from West End of West Bridge



Photo 6 – Looking East Along North Side of Road from West End of West Bridge



Photo 7 – Looking West Along North Side of Road from Causeway Between Bridges



Photo 8 – Looking Northeast At Causway Between Bridges



Photo 9 – Looking North At South Face of Roadway Embankment East of East Bridge



Photo 10 – Looking West Along South Side of Road from Sangamon Road



Photo 11 – Looking East Along North Side of Road at East End of Project



Photo 12 – Looking East Along South Side of Road from East End of Project



Picture 1: SN 058-3032 – Looking North



Picture 2: SN 058-3032 – Looking Southwest



Picture 3: SN 058-3032 – West Abutment (Looking South)



Picture 4: SN 058-3032 Top of Bridge Deck (Looking East)



Picture 5: SN 058-3033 – Looking Northeast



Picture 6: SN 058-3033 – West Abutment (Looking Northwest)



Picture 7: SN 058-3033 – East Abutment (Looking South)



Picture 8: SN 058-3033 Top of Bridge Deck (Looking East)

APPENDIX 6 – GIS Shape Files of Construction Limits (Digital)

APPENDIX 7 – IDOT Cultural Clearance
Memo



Illinois Department of Transportation

Memorandum

To: Bureau of Local Roads Attn: Mark Reitz
From: Jack Elston By: Brad Koldehoff
Subject: Cultural Resources - No Historic Properties Affected Clearance
Date: October 6, 2020

Macon County
FAU 7355, CH 24, Reas Bridge Road
Decatur, Mt Zion, Long Creek
Sec. 12-00251-00-BR
Job No. P-95-042-99
ISAS Log 19133
Seq. 13921G

For the above referenced undertaking, IDOT's qualified Cultural Resources staff hereby make a **"No Historic Properties Affected"** finding pursuant to Section 106 of the National Historic Preservation Act.

This finding concludes the Section 106 process in accordance with the stipulations of the Programmatic Agreement Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Illinois, executed March 6, 2018 by FHWA, Illinois SHPO, IDOT and the Advisory Council on Historic Preservation.

No further cultural resources coordination is required for this undertaking, unless design modifications or new information indicate that historic properties may be affected. After coordination with Local Roads any potential site impacts have been avoided. However, if archaeological sites cannot be avoided, then, additional coordination with my office is required.

A handwritten signature in black ink, reading "Brad Koldehoff".

Brad H. Koldehoff
Cultural Resources Unit Chief
Bureau of Design & Environment

BK:km



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

Macon County
Decatur
FAU 7355/CH 24, Macon County Beltway
Bridge Replacement
Reas Bridge Road over Lake Decatur
Structure Numbers: 058-3032 & 058-3033
Section: 12-00251-00-BR
IDOT Sequence #13921G
ISAS Log #19133
SHPO Log #002012709

September 22, 2020

RECEIVED

SEP 22 2020

PRESERVATION SERVICES

IHPA REVIEW

H/A _____
AC CONCUR JK 9/25/20
AR _____
File _____

FEDERAL 106 PROJECT

Archaeology – No Historic Properties Affected

Ms. Carol J. Wallace
Cultural Resources Coordinator
Illinois State Historic Preservation Office
Illinois Department of Natural Resources
1 Old State Capitol Plaza
Springfield, Illinois 62701

Dear Ms. Wallace:

In continuing consultation with your office for the above referred undertaking, Macon County and the Illinois Department of Transportation (IDOT) in coordination with the Federal Highway Administration (FHWA) plan to construct a beltway around Decatur. The current project section involves the replacement of the two bridges that carry Reas Bridge Road over Lake Decatur. In accordance with the project Memorandum of Agreement, ratified July 7, 2016, an archaeological survey was conducted. The attached Archaeological Survey Short Report (ASSR) documents the survey completed by Illinois State Archaeological Survey (ISAS) personnel for the 22-acre Area of Potential Effects (APE). No sites were identified, and the undertaking with avoid impacts to the Wheeler Cemetery, which is protected by the Illinois Cemetery Act (760 ILCS 100).

In coordination with FHWA, we request concurrence from the State Historic Preservation Officer (SHPO) in our finding of No Historic Properties Affected. In accordance with 36 CFR Part 800.3(c)(4), FHWA and IDOT will proceed to the next step in the Section 106 process if we do not receive a written response from your office within 30 days.

Sincerely,

Brad H. Koldehoff
Cultural Resources Unit Chief
Bureau of Design & Environment

CONCUR

By: Robert Appleson
Deputy State Historic Preservation Officer

Date: 9-30-2020

APPENDIX 8 – USACOE Nationwide
Permit #14



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, ROCK ISLAND DISTRICT
PO BOX 2004 CLOCK TOWER BUILDING
ROCK ISLAND, ILLINOIS 61204-2004

April 1, 2020

Operations Division

SUBJECT: CEMVR-OD-P-2016-1456

Macon County Highway Dept.
Attn: Bruce Bird
2405 N. Woodford Street
Decatur, Illinois 62521

Dear Mr. Bird:

Our office has reviewed your application received November 26, 2019, regarding the proposed bridge replacement over Lake Decatur, both East and West sections of Reas Bridge, located in Section 33, Township 17 North, Range 3 East, over Lake Decatur, City of Decatur, Macon County, Illinois.

Your project is covered under Nationwide Permit No. 14, as published in the enclosed Fact Sheet No. 8 (IL), provided you meet the permit conditions for the nationwide permits, which are included in the Fact Sheet. The Corps has also made a determination of no effect on federally threatened and endangered species or critical habitat. The Illinois Environmental Protection Agency (IEPA) has also issued Section 401 Water Quality Certification with conditions for this nationwide permit. Please note these additional conditions included in the Fact Sheet. The decision regarding this action is based on information found in the administrative record, which documents the District's decision-making process, the basis for the decision, and the final decision.

This verification is valid until March 18, 2022, unless the nationwide permit is modified, reissued, or revoked. It is your responsibility to remain informed of changes to the nationwide permit program. We will issue a public notice announcing any changes if and when they occur. Furthermore, if you commence or are under contract to commence this activity before the date the nationwide permit is modified or revoked, you will have twelve months from that date to complete your activity under the present terms and conditions of this nationwide permit. If your project plans change, you should contact our office for another determination.

This authorization does not eliminate the requirement that you must still acquire other applicable Federal, state, and local permits. If you have not already coordinated your project with the Illinois Department of Natural Resources – Offices of Water Resources, please contact them at 217/782-3863 to determine if a floodplain development permit is required for your project. You may contact the IEPA Facility Evaluation Unit at 217/782-3362 to determine whether additional authorizations are required from the IEPA. Please send any electronic correspondence to Epa.401.docs@illinois.gov.

You are required to complete and return the enclosed "Completed Work Certification" form upon completion of your project in accordance with General Condition No. 30 of the nationwide permits.

Should you have any questions, please contact our Regulatory Branch by letter, or telephone Mrs. Jackie M. Groves at 309/794-5351 or email me at Jackie.m.groves@usace.army.mil.

Sincerely,

Trevor Popkin
Chief, Illinois/Missouri Section
Regulatory Branch

When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s), of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

Transferee

Date

Enclosures

Copy Furnished: (w/o enclosures)

Mr. William Milner, P.E.
Section Chief - Downstate Regulatory
Programs
Illinois Department of Natural Resources
Office of Water Resources
1 Natural Resources Way
Springfield, Illinois 62702
bill.milner@illinois.gov (email)

Mr. Darin LeCrone, P.E.
Illinois Environmental Protection Agency
Div. of Water Pollution Control, Sect. 15
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
Darin.LeCrone@illinois.gov (email)

Chastain & Associates LLC
Attn: Jeremy Buening
5 North Country Club Road
Decatur, Illinois 62521

COMPLETED WORK CERTIFICATION

Permit Number: CEMVR-OD-P-2016-1456

Name of Permittee: Macon County Highway Dept.

County/State: Macon / Illinois

Date of Issuance: April 1, 2020

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Engineer District, Rock Island
ATTN: Regulatory Branch
Clock Tower Building
Post Office Box 2004
Rock Island, Illinois 61204-2004

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above reference permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

JMG

APPENDIX 9 – INHS Research Proposal

A Proposed Plan to Compensate for Potential Adverse Impacts to Kirtland's Snake from Proposed Improvements at Rea's Bridge, Macon County, IL

Prepared by:
Andrew Kuhns, Herpetologist
Biotic Survey and Assessment Program
Illinois Natural History Survey
Prairie Research Institute
University of Illinois at Urbana Champaign

Scope: The Illinois Department of Transportation (IDOT) is preparing a Conservation Plan per 17 Ill Adm Code Part 1080 for the potential take of Kirtland's Snake from proposed improvements to Structures 058-3032 and 058-3033 carrying Rea's Bridge Road (CH 24) over Lake Decatur in Macon County Illinois (BDE Seq. N. 20252).

Near Lake Decatur, the Illinois Natural Heritage Database depicts the presence of 8 Element of Occurrence Records (EORs) for Kirtland's Snake (**Figure 1**). These EORs are clustered in three Element of Occurrence ID's (EO ID) locations Sportsmen's Park (11309), Star Route Road (11316), and East Grove Road (11317). The Star Route Road cluster is closest to Rea's Bridge project area and it is from that cluster that take could occur.

To compensate for the potential take of Kirtland's Snake from the Star Route Road cluster and to aid in conservation of the species, IDOT proposes to fund an effort to update the 8 EORs and to survey for new EORs in the vicinity of Lake Decatur.

Methods: Due to fluctuations in population sizes, variability in activity patterns, and previously observed low detection rates of Kirtland's Snake, INHS will conduct repeated Visual Encounter Surveys (VES) at the 8 EORs and up to 15 novel sites around Lake Decatur that appear to have suitable habitat and may harbor undocumented populations of Kirtland's Snake. Each site will be surveyed 5 times during the Kirtland Snake activity season (April – October). VES methods will consist of a three-person crew, led by BSAP Herpetologist Andrew Kuhns. At each site the crew will conduct time constrained Visual Encounter Surveys. Surveys will last 15 minutes per site (45 minutes total effort per site, per survey) or until all perceived suitable habitat has been searched.

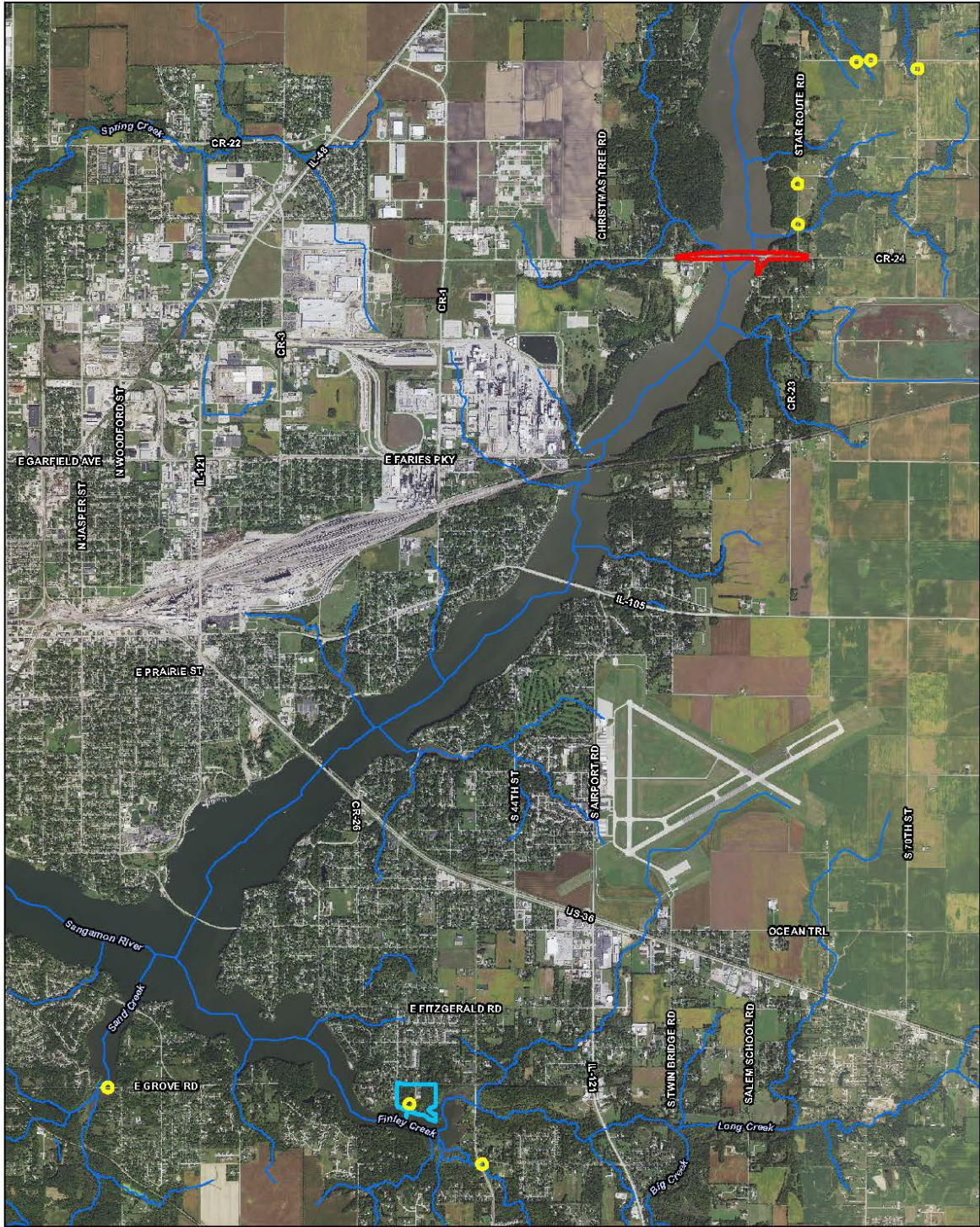
Schedule: The tasking will be sent to INHS upon issuance of the ITA by the Illinois Department of Natural Resources (IDNR). Surveys are anticipated to occur in September and October of 2021 and then April, May, and June of 2022. Late 2022, reports will be submitted to the IDOT BDE for coordination with the IDNR.

Deliverables: All EORs will be submitted to IDNR within 10 days of observation as required by the State of Illinois Endangered and Threatened Species Special Use Permit issued to A. R. Kuhns. Within 90 days of the completion of the surveys, INHS will submit an INHS/IDOT Statewide Biological Survey & Assessment Program Aquatic Survey Report to IDOT detailing the findings of the surveys including updated EOR records and any newly discovered populations at the novel sites.

Budget: IDOT’s support of this Kirtland’s Snake research is valued at **\$4926.37**. The value of support is estimated based on personnel effort to complete this mitigation and includes estimated travel expenses based on current state mileage rates for 5 trips to the survey sites (**Table 1**).

Table 1. Estimated value of the Illinois Department of Transportation’s contribution towards Kirtland’s Snake surveys as mitigation for the from proposed improvements at Rea’s Bridge, Macon County, IL (BDE Seq. No. 20252).

EXPENSE		RATE	EXPENSE
HERPETOLOGIST	Salary	5 days	\$ 1,273.43
	Fringe (0.5339)		\$ 679.88
GRADUATE ASSISTANT	Salary	5% of \$23000	\$ 1,150.00
	Fringe (0.0991)		\$ 114.00
OTHER (NON-SURS)	Salary	40 hr. @12.50/hr.	\$ 500.00
	Fringe (0.0766)		\$ 38.00
FRINGE BENEFITS	Fringe		\$ 831.88
ALL PERSONNEL	Total		\$ 2,923.43
TRAVEL - DOMESTIC		500 mi @ \$0.56	\$ 350.00
SUBTOTAL			4105.31
F&A	Negotiated 20%		821.06
TOTAL VALUE			\$ 4,926.37



Kirtland's snake EOR locations near Lake Decatur in Macon County, Illinois.



Figure 1. Element Occurrence Records for Kirtland's Snake around Lake Decatur, Macon County, Illinois.