

**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**

REVISED DATE: January 17, 2017 (originally submitted November 18, 2015)

SUBMITTED TO: Ms. Jenny Skufa  
Incidental Take Authorization Coordinator  
Illinois Department of Natural Resources  
One Natural Resources Way  
Springfield, IL 62702

PROJECT APPLICANT: McHenry County Division of Transportation  
Attn: Benjamin Redding, Design Manager  
16111 Nelson Road  
Woodstock, IL 60098

PROJECT NAME: O'Brien Road over the Nippersink Creek Bridge Replacement

COUNTY: McHenry

AREA OF IMPACT: 3,940 SF (0.09 ACRES)

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 area to be affected is O'Brien Road over the Nippersink Creek in Hebron, Illinois (Township 46N, Range 7E, Sections 19 and 30). See attached Location Map, Aerial Photograph, site photographs of the project site, and plan sheets for additional information. The project lies within the Nippersink Creek Illinois Natural Areas Inventory Site #1506. The bridge and roadway are under the jurisdiction of Hebron Township.**

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

**The historical range of Slippershell (*Alasmidonta viridis*) is from southern Ontario to southern Alabama, and from South Dakota east to New York, including the Great Lakes Basin and the Mississippi, Ohio and Tennessee River systems. Their usual habitat consists of substrates including sand, mud or fine gravel. Like other freshwater mussels, this species obtains its nutrition from filter feeding, requiring clean and clear waters to siphon needed food sources. Increased siltation in a water body inhibits this filter process and restricts the amount of available food for the individual. Currently, the Slippershell is rarely found in its range and is now restricted to a limited number of clean, clear creeks and headwaters of rivers. The life span of this species is not known. Slippershell larvae (called glochidea) are known to primarily parasitize two species of fish: Johnny Darters (*Etheostoma nigrum*) and Mottled Sculpin (*Cottus bairdi*). These fish must be present for the mussel to complete its life cycle, and therefore the appropriate habitat for these fish hosts must also be present. The expansion of invasive zebra mussels (*Dreissena polymorpha*), which attach to and smother native mollusks, poses additional threats to the Slippershell mussel.**

**A biological survey for mussels was performed by the McHenry County Conservation District on September 17, 2015. A total of eight Slippershell mussels were found; five live and three recently deceased. A copy of the Mussel Survey Field Sheet and map of survey limits is attached.**

**C) description of project activities** that will result in taking of an endangered or threatened species, including practices 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.

**The existing bridge superstructure will be removed and replaced with a new three span reinforced concrete slab. The existing abutments and piers will remain and be reused in place. Stone riprap will be placed on the abutment slopes and around the piers for scour control.**

**Riprap placed in the creek for scour control would be considered habitat alteration. The area of permanent impact to the channel due to the riprap is 2945 square feet (0.068 acres). An additional area of temporary impacts of 995 square feet will occur due to cofferdam installation and dewatering during riprap installation. Therefore the total potential impact area to Slippershell is 3,940 square feet or 0.09 acres. Cofferdams will be constructed from upland areas. No equipment will be placed in the stream at any time during the project.**

**The proposed riprap areas will be dewatered prior to excavation of the riprap bed and the placement of riprap. Temporary cofferdams will be used to facilitate dewatering and control erosion and sediment during the in-stream work. The cofferdams will be constructed of non-erodible material (i.e. sand bags, prefabricated rigid barriers, sheet piling) and shall be constructed to withstand expected high flows. Then, the coffered areas will be dewatered to aid in riprap installation. During dewatering, the intake hose will be placed in a stabilized sump pit and the outlet discharged above the water line on a non-erodible energy dissipating surface.**

Stone riprap (RR4, 9” median size) will then be placed around the bridge abutments and piers as a permanent scour countermeasure. The bed for the riprap will be excavated so the finished surface of the riprap will conform to the existing channel. All excavated material will be removed from the channel and disposed in an upland location. The stone riprap will be placed by mechanical means to its full course thickness in one operation. Staging of materials will also be in an upland area. Temporary stockpiling of riprap or excavated material in the channel will not be allowed.

Normal flow within the stream will be maintained at all times. No construction debris will be deposited into the stream channel. All materials used for the cofferdams will be removed to upland areas at the completion of construction. Construction is planned for summer 2017. The duration of construction is estimated to be two months. A U.S. Army Corps of Engineers (USACE) 404 permit is required for the project. Application to the USACE was made on September 6, 2016. The USACE has assigned number LRC-2016-00647 to the project. A copy of the application is attached.

The proposed improvement rehabilitates the bridge on the existing alignment and will not increase the capacity of the roadway.

D) explanation of the anticipated **adverse effects on listed species**; how will the applicant’s proposed actions impact each of the species’ life cycle stages.

**Siltation within otherwise clear water ways from erosion and construction practices can inhibit the mussel’s crucial filter feeding functions. Increased suspended sediment can affect any mussel populations both within the project limits and downstream from the site if the proper precautions are not taken. Already established individuals may be crushed or smothered by construction work if individuals are not relocated, which may be difficult as adults rarely grow larger than 1 inch long. Minimalizing the amount of disturbed area within the project limits is necessary to reduce as much stirring of sediment within the stream bed as possible.**

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).

A mussel survey was conducted by the McHenry County Conservation District on September 17, 2015 (attached). Five live and three dead Slippershell mussels were found within the study area which extended through the project area. It should be noted that the mussel survey study area extended 100 feet north and 100 feet south of the project area

According to the Illinois Endangered Species Protection Act (520 ILCS 10/2), the term ‘take’ means, in reference to animals, to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. Prior to initiating construction, all mussels within the limits of construction will be

**moved from their locations to suitable upstream habitat. All fish caught within the cofferdam will be relocated to suitable downstream habitat. Five (5) live Slippershell mussels were found during the September 17, 2015 survey. Assuming a 50 percent discovery rate of the mussels during this survey and an equivalent rate during the relocation effort, a total of five (5) Slippershell mussels may remain in the work area and require mitigation.**

**The footprint of the work zone has been minimized to reduce the impact to the mussel habitat. The total area of permanent habitat impact is approximately 3,940 square feet (approximately 0.09 acres). The length of impact along the stream channel will be approximately 70 linear feet. The amount of habitat affected is equal to the area required to install the stone riprap.**

**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.).**

**Similar, if not higher quality, habitat exists both upstream and downstream of the project area. After work is complete, the streambed and habitats will be controlled by natural processes, namely flooding. If measures are taken to minimize substrate disturbance in the area around the bridge, Slippershell mussels should move back into the area over time.**

**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.
- Minimization measures include timing work when species is less sensitive or reducing the project footprint.
- Mitigation is additional beneficial actions that will be taken for the species such as needed research, conservation easements, propagation, habitat work, or recovery planning.
- It is the **applicants responsibility to propose mitigation measures**. IDNR expects applicants to provide species conservation benefits 5.5 times larger than their adverse impact.

**All mussels (including Slippershell) will be moved from their locations within both the temporary and permanent limits of construction to suitable upstream habitat within the adjacent stream channel. Relocation will be performed by the McHenry County Conservation District. Siltation has the greatest potential to cause harm to remaining mussels downstream of the bridge. Soil conserving practices, including perimeter erosion barrier, ditch checks, seeding and erosion control blanket, will be implemented to minimize the amount of eroded soil entering the channel.**

**A Stormwater Pollution Prevention Plan (SWPPP) will be included within the project plans regardless of whether or not this project requires NPDES documentation. A copy of the SWPPP is attached.**

**A donation to the Forest Preserve District of DuPage County's Urban Stream Research Center's propagation of native mussels is proposed in-lieu of on-site mitigation. The IDNR has determined a compensatory mitigation of \$5,580 for potential taking of Slippershell at this project. Potential impacts, rareness of species, vulnerability of habitat, and uncertainty of population abundance in the project area and the State were considered by the IDNR and the mitigation was scaled to roughly 20% of a mussel propagation project value.**

**Therefore, the applicant will provide \$5,580 to the Forest Preserve District of DuPage County's Urban Stream Research Center for propagation of native mussels. This check will be issued within 6 months after formal implementation of the ITA.**

D) plans for monitoring the effects of the proposed actions on endangered or threatened species, such as species and habitat monitoring before and after construction, include a plan for follow-up reporting to IDNR.

**Specified erosion and sediment control practices in the Stormwater Pollution Prevention Plan will be implemented. Inspections to ensure proper working order and maintenance of practices will be made daily by the engineering staff with the McHenry County Division of Transportation. Additional inspections will be made immediately prior to and following events of heavy rain for the area as indicated in the Stormwater Pollution Prevention Plan. A mussel survey will be conducted at the project and relocation sites two (2) years and five (5) years following completion of the proposed project. The McHenry County Conservation District will complete the surveys. In addition to completing the survey using the same methodology implemented during the September 17, 2015 survey, mussels will be marked during the first survey so that population dynamics can be documented using results from the second survey. Survey results will be sent to the IDNR within 60 days of completion of each survey.**

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

**The installation and effectiveness of the soil conserving practices will be monitored daily by engineering staff with the McHenry County Division of Transportation. If through daily monitoring, eroded soil is observed leaving the jobsite or limits of construction, additional soil conserving practices, including those not included in the Stormwater Pollution Prevention Plan, shall be installed or measures taken to minimize soil erosion.**

F) verification that adequate funding exists to support and implement all 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.

**The project is funded by a combination of 80% federal funding (Surface Transportation Program) and 20% local funding. This funding will cover all costs associated with implementation of the Conservation Plan including mussel relocation, mitigation and follow-up surveys.**

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.

**The only alternative which does not result in the taking of the listed species is to leave the existing bridge in place. The bridge would continue in its deteriorated condition. Normal maintenance will not correct the structural deficiencies of the bridge. These deficiencies could lead to closure of the road or sudden collapse and potential injury or loss of life; both human and to the subject fragile species. The “do nothing” approach is not considered feasible or prudent because it poses an unacceptable safety hazard and places intolerable restrictions on travel and transport.**

**Another alternative is to leave the existing bridge in place and build another bridge on a nearby alignment. There would be no disturbance at the existing bridge site, but there would be in-stream impacts required to construct the new bridge. There is similar habitat located upstream and downstream from the existing bridge and the in-stream work required to construct the new bridge would likely result in a take of the species at the alternate location. This alternative is not considered practical since it would result in a take of the species at the proposed bridge site.**

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 Slippershell is fairly widespread in Illinois. The reason for inclusion on the list of threatened species in Illinois is because of its severe reduction in range in the state. It still occurs in many localities in Illinois and the Fox River drainage including: Somonauk Creek, Little Rock Creek, East Branch Big Rock Creek, Blackberry Creek, Waubensee Creek, Nippersink Creek, Rob Roy Creek, and an additional location in Tyler Creek at Eagle Heights Park. Disturbance area for this project is estimated to be as little as roughly 2945 square feet.**

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

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



McHenry County Division of Transportation  
16111 Nelson Road  
Woodstock, IL 60098



McHenry County Conservation District  
18410 U.S. Highway 14  
Woodstock, IL 60098

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;

**The McHenry County Division of Transportation is responsible for securing authorization for incidental take of state-listed species; securing all permits including NPDES, Section 404 and Office of Water Resources; inspection of the work and contractor compliance with the contract documents. A progress report will be submitted to the IDNR by the end of January following project completion.**

Project construction is anticipated to begin in Summer 2017. The duration of construction is estimated to be two months. Slippershell relocation will be conducted no more than 30 days prior to the start of construction. A mussel survey will be conducted at the project site two (2) years and five (5) years following completion of the proposed project. Survey results will be sent to the IDNR within 60 days of completion of each survey.

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

**The Illinois Department of Natural Resources shall be responsible for the review of this Conservation Plan and for subsequent issuance of the Incidental Take Authorization.**

**This project is authorized by the Illinois Department of Transportation, who oversees the use of state-distributed funding among local agencies.**

D) assurance of compliance with all other federal, State and local regulations pertinent to the proposed action and to execution of the conservation plan;

**The McHenry County Division of Transportation, as directed by the Illinois Department of Transportation, exclusively abides by the National Environmental Policy Act and all associated state and federal environmental laws in carrying out its mission of performing the most environmentally sensitive methods of transportation planning and engineering.**

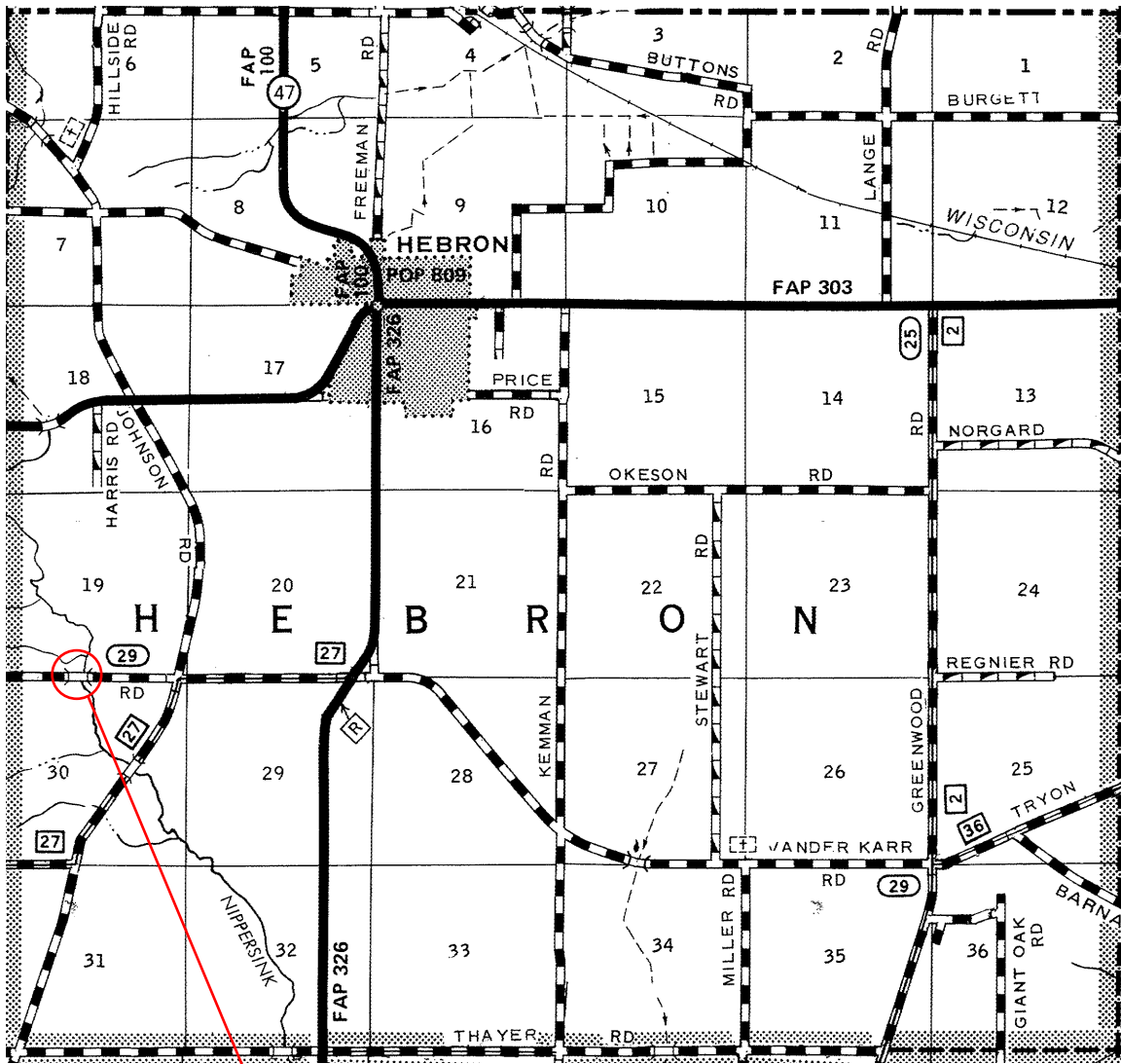
E) copies of any final **federal authorizations for a taking** already issued to the applicant, if any.

**Not applicable. The Slippershell mussel is not federally threatened or endangered.**

**Enclosures:**

**Location Map  
Aerial Photograph  
Site Photographs  
Mussel Survey  
Joint Permit Application  
Plan and Profile  
General Plan and Elevation  
Erosion Control Plan  
Erosion Control Standards  
Storm Water Pollution Prevention Plan**





T 46 N

R 7 E, 3RD PM

Structure Location  
Sec: 14-00432-00-BR

Location Map



**LEGEND**

PROJECT AREA



SURVEYED WETLAND BOUNDARY



APPROXIMATE WETLAND BOUNDARY



**Aerial Photograph  
O'Brien Road**

Scale: 1" = 30'

**HLR** **Hampton, Lenzini and Renwick, Inc.**  
Civil & Structural Engineers . Land Surveyors . Environmental Services  
ELGIN . SPRINGFIELD . WOODRIDGE  
www.hltrengineering.com



Subject bridge, facing southwest, spring 2015



Subject bridge, facing southeast, spring 2015.

**Freshwater MUSSEL Survey**  
**McHenry County Conservation District**



**Area ID:** BAW    **MCCD Site?** Yes    **Township:** Hebron    T46N R7E    **Section:** 19, 30    **Document#** **MU2015F268**

**Stream:** *Nippersink Creek*    **Basin:** Fox    **Date of Survey:** 9/17/2015

**Stream Condition:** Mixed    **Collectors:** Collins, Jablonski, 2 interns    **General Comments:** Not a timed survey; substrate was 50% sand, 40% silt, 10% cobble

**Collection Method:** Crawl

**MCI:** *(Mussel Classification Index)*

**Location Comment:**

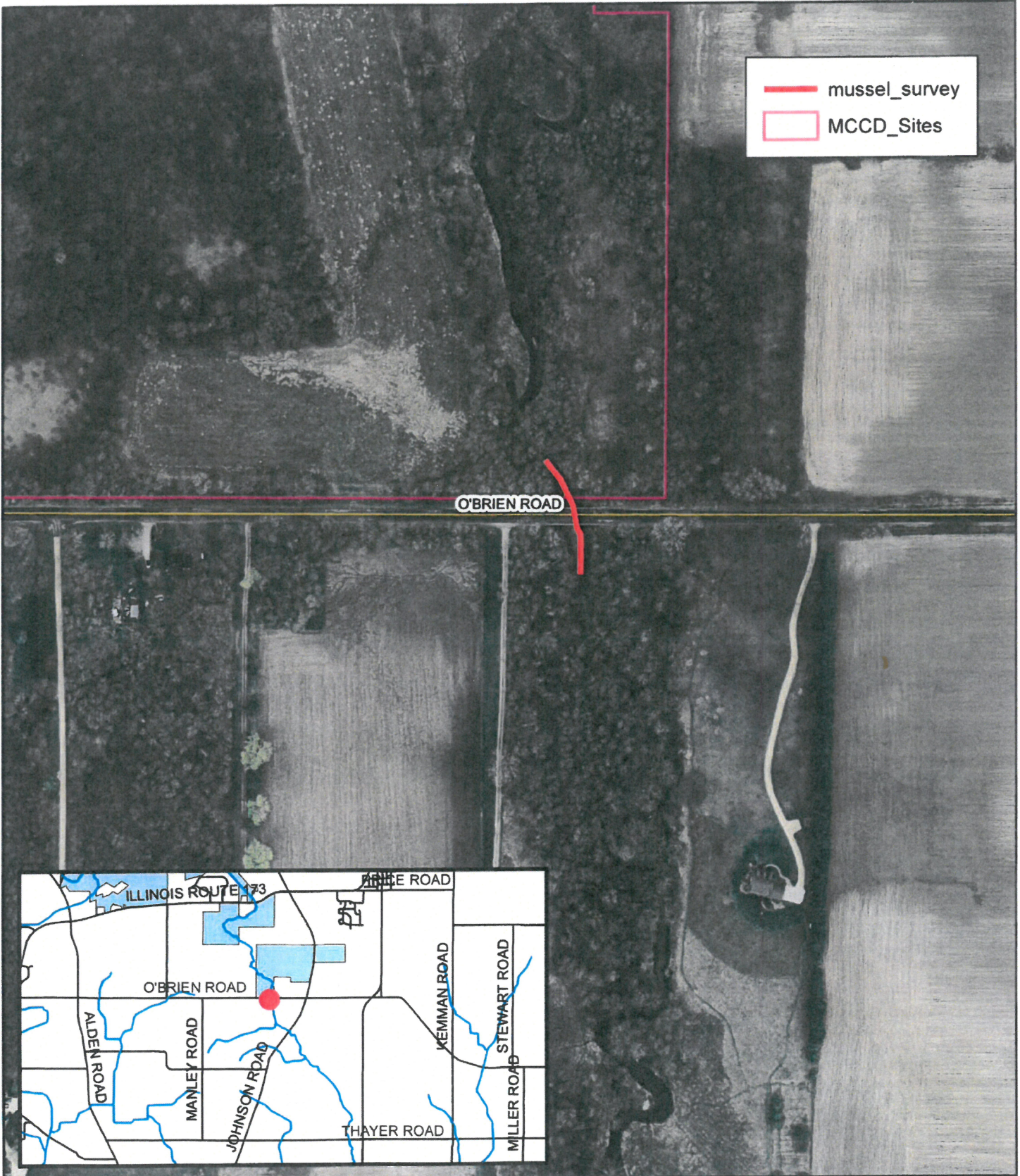
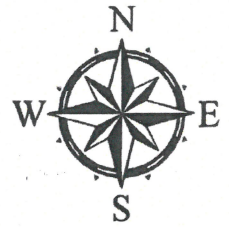
Survey for bridge work at O'Brien Road (includes reach both north and south of bridge)

Species	# Live	# Recent Dead	# Sub-Fossil	Voucher Specimen?	Reintroduction?	Species Comments	Rank of Importance	Intolerant?
<i>Strophitus undulatus</i> <b>Creeper</b>	1	0	0	No	No		3	
<i>Anodontoides ferussacianus</i> <b>Cylindrical papershell</b>	1	0	0	No	No		4	
<i>Venustaconcha ellipsiformis</i> <b>Ellipse</b>	0	0	1	No	No		2	Very
<i>Pyganodon(=Anodonta)grandis</i> <b>Giant floater</b>	20	3	0	No	No		5	
<i>Alasmidonta viridis</i> <b>Slippershell mussel</b>	5	3	0	No	No		1	Yes
<i>Lasmigona complanata</i> <b>White heelsplitter</b>	6	0	0	No	No		4	

<b>TOTALS =</b>	<b>40</b> <small>individuals</small>	33	6	1	<b>5</b>	<b>Live SPECIES</b>	<b>Average Rank of Importance: (by species)</b>	<b>3.2</b>
					<b>3</b>	<b>Dead SPECIES</b>		
					<b>6</b>	<b>TOTAL SPECIES</b>	<b>Average Rank of Importance: (by live individuals)</b>	<b>4.1</b>



Mussel Survey- Nippersink Creek  
16-SEP-2015  
Site: Winding Creek  
Nippersink Creek  
Mussel Survey for O'Brien Bridge Project



## JOINT APPLICATION FORM FOR ILLINOIS

### ITEMS 1 AND 2 FOR AGENCY USE


1. Application Number	2. Date Received
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### 3. and 4. (SEE SPECIAL INSTRUCTIONS) NAME, MAILING ADDRESS AND TELEPHONE NUMBERS

<b>3a. Applicant's Name:</b> <b>Benjamin Redding, P.E.</b> Company Name (if any): McHenry County Division of Transportation Address: <b>16111 Nelson Road</b> <b>Woodstock, IL 60098</b>  Email Address: BARedding@co.mchenry.il.us	<b>3b. Co-Applicant/Property Owner Name</b> (if needed or if different from applicant):  Company Name (if any):  Address:   Email Address:	<b>4. Authorized Agent (an agent is not required):</b> <b>Joe Frazee, P.E.</b> Company Name (if any): Hampton, Lenzini, & Renwick, Inc. Address: <b>3085 Stevenson Drive, Suite 201</b> <b>Springfield, IL 62703</b>  Email Address: jwfrazee@hlreng.com
Applicant's Phone Nos. w/area code Business: 815-334-4980 Residence: Cell: Fax: 815-334-4989	Applicant's Phone Nos. w/area code Business: Residence: Cell: Fax:	Agent's Phone Nos. w/area code Business: 217-546-3400 Residence: Cell: Fax: 217-546-8116

### STATEMENT OF AUTHORIZATION

I hereby authorize, Hampton, Lenzini, & Renwick to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.


2016.09.02  
 Applicant's Signature Date

### 5. ADJOINING PROPERTY OWNERS (Upstream and Downstream of the water body and within Visual Reach of Project)

Name	Mailing Address	Phone No. w/area code
a. Info available upon request		
b.		
c.		
d.		

**6. PROJECT TITLE:**  
**Hebron Township, O'Brien Road over Nippersink Creek, Sec. 14-00432-00-BR**

### 7. PROJECT LOCATION:

LATITUDE: <b>42.44319</b> °N LONGITUDE: <b>88.46286</b> °W	UTM's Northing: Easting:										
STREET, ROAD, OR OTHER DESCRIPTIVE LOCATION <b>O'Brien Road</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">LEGAL DESCRIPT</th> <th style="width: 15%;">QUARTER</th> <th style="width: 15%;">SECTION</th> <th style="width: 15%;">TOWNSHIP NO.</th> <th style="width: 15%;">RANGE</th> </tr> <tr> <td style="text-align: center;">SW</td> <td style="text-align: center;">19</td> <td style="text-align: center;">46N</td> <td style="text-align: center;">7E</td> <td></td> </tr> </table>	LEGAL DESCRIPT	QUARTER	SECTION	TOWNSHIP NO.	RANGE	SW	19	46N	7E	
LEGAL DESCRIPT	QUARTER	SECTION	TOWNSHIP NO.	RANGE							
SW	19	46N	7E								
<input type="checkbox"/> IN OR <input checked="" type="checkbox"/> NEAR CITY OF TOWN (check appropriate box) Municipality Name <b>2.5 miles SW of Hebron</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; text-align: center;"> <b>Nippersink Creek</b> </td> <td style="width: 30%; text-align: center;">                 RIVER MILE                  (if applicable)             </td> </tr> </table>	<b>Nippersink Creek</b>	RIVER MILE (if applicable)								
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%;">COUNTY</th> <th style="width: 20%;">STATE</th> <th style="width: 50%;">ZIP CODE</th> </tr> <tr> <td style="text-align: center;"><b>McHenry</b></td> <td style="text-align: center;"><b>IL</b></td> <td style="text-align: center;"><b>60034</b></td> </tr> </table>	COUNTY	STATE	ZIP CODE	<b>McHenry</b>	<b>IL</b>	<b>60034</b>					
COUNTY	STATE	ZIP CODE									
<b>McHenry</b>	<b>IL</b>	<b>60034</b>									

8. PROJECT DESCRIPTION (Include all features):

The project consists of rehabilitating the existing public roadway bridge by removing the existing superstructure and replacing it with a new three-span continuous reinforced concrete slab on the existing abutments and piers. Stone riprap will be placed on the existing abutment slopes as a scour countermeasure. Work below the ordinary high water mark includes excavation for 1V:2H abutment slopes and installation of stone riprap. A wetland delineation conducted on May 26, 2015, identified one wetland area within the project limits. Nippersink Creek has a tributary area of 21.1 square miles at this location. The proposed length of disturbance is 70 feet measured along the stream channel.

9. PURPOSE AND NEED OF PROJECT:

The purpose of this project is to rehabilitate the existing structurally deficient bridge to provide a safe stream crossing for the traveling public.

**COMPLETE THE FOLLOWING FOUR BLOCKS IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**

10. REASON(S) FOR DISCHARGE:

The abutment slopes and pier piles will be protected with stone riprap.

11. TYPE(S) OF MATERIAL BEING DISCHARGED AND THE AMOUNT OF EACH TYPE IN CUBIC YARDS FOR WATERWAYS:

TYPE: Stone riprap  
 AMOUNT IN CUBIC YARDS:  
 210 cubic yards

12. SURFACE AREA IN ACRES OF WETLANDS OR OTHER WATERS FILLED (See Instructions)

0.07 acres (3000 sq. ft.) wetlands

13. DESCRIPTION OF AVOIDANCE, MINIMIZATION AND COMPENSATION (See instructions)

1. The bridge substructure is being reused to minimize impacts to wetlands.
2. The amount of riprap proposed is the minimum needed to protect the structure.
3. Wetland impacts will be mitigated with purchased wetland credits per the Illinois Interagency Wetland Policy Act.

14. Date activity is proposed to commence  
 April 2017

Date activity is expected to be completed  
 June 2017

15. Is any portion of the activity for which authorization is sought now complete?  
 Month and Year the activity was completed

Yes  No

NOTE: If answer is "YES" give reasons in the Project Description and Remarks section. Indicate the existing work on drawings.

16. List all approvals or certification and denials received from other Federal, interstate, state, or local agencies for structures, construction, discharges or other activities described in this application.

<u>Issuing Agency</u>	<u>Type of Approval</u>	<u>Identification No.</u>	<u>Date of Application</u>	<u>Date of Approval</u>	<u>Date of Denial</u>
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17. CONSENT TO ENTER PROPERTY LISTED IN PART 7 ABOVE IS HEREBY GRANTED.

Yes  No

18. APPLICATION VERIFICATION (SEE SPECIAL INSTRUCTIONS)

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

*R. Dabney*

Signature of Applicant or Authorized Agent

20160902

Date

*Joseph W. Franze*

Signature of Applicant or Authorized Agent

9/6/2016

Date

Signature of Applicant or Authorized Agent

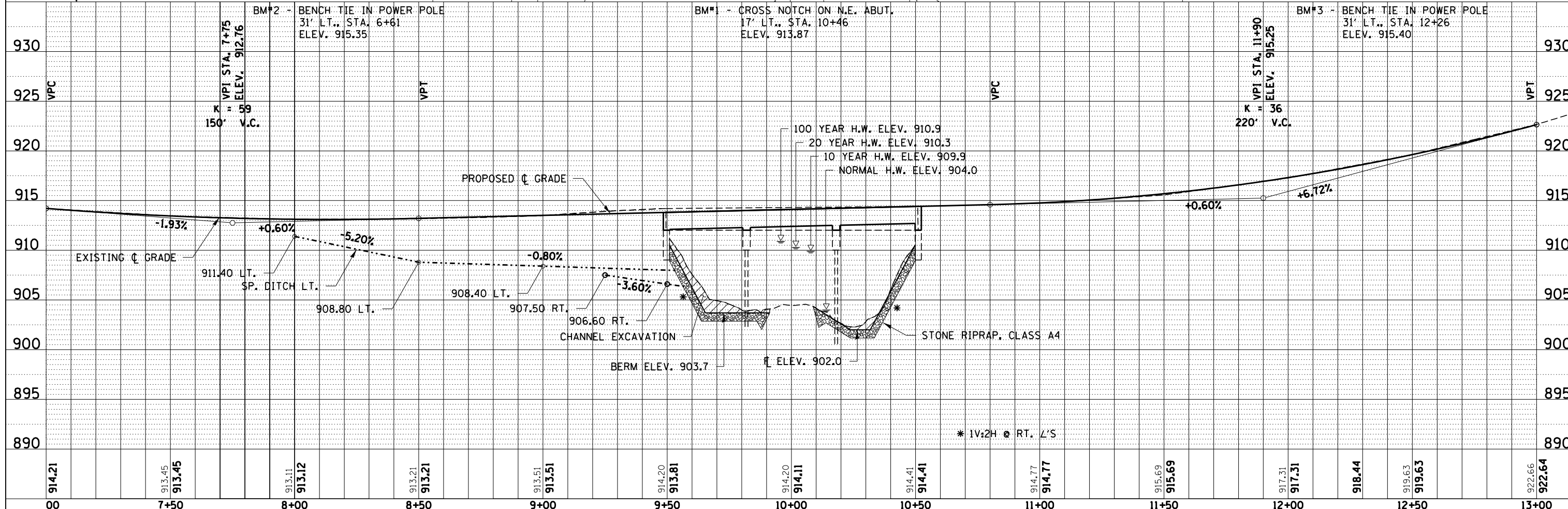
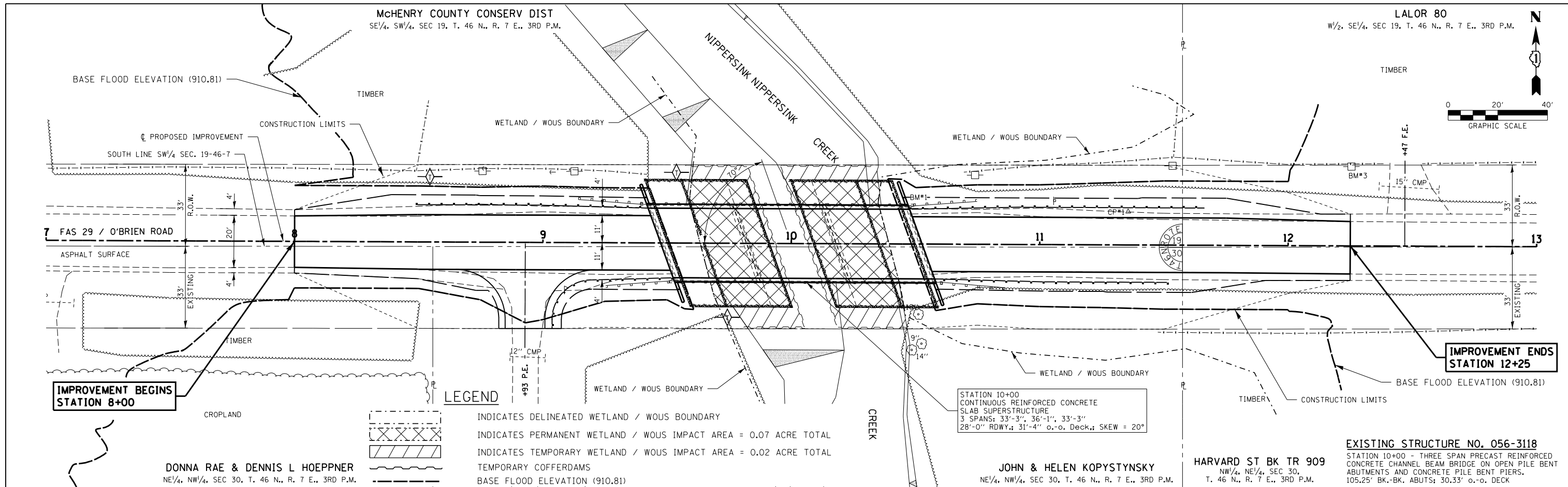
Date

- Corps of Engineers Revised 2010     IL Dep't of Natural Resources     IL Environmental Protection Agency     Applicant's Copy

SEE INSTRUCTIONS FOR ADDRESS

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	ALIGNED		
	CHECKED		
	FILED		
	NO.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES		
	CHECKED		
	STRUCTURE		
	NOTATIONS		
	CHD		
	NO.		



FILE NAME = 150107-sht-p&p.dgn	USER NAME = *USER*	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>McHENRY COUNTY DIVISION OF TRANSPORTATION</b>	<b>PLAN &amp; PROFILE</b> <b>O'BRIEN ROAD</b>	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3088 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = *SCALE*	DRAWN - L.G.C.	REVISED -			29	14-00432-00-BR	McHENRY		
PLOT DATE = 3/2/2016	CHECKED - S.W.M.	DATE - 07/30/15	REVISED -			HEBRON ROAD DISTRICT CONTRACT NO.				
						ILLINOIS FED. AID PROJECT				

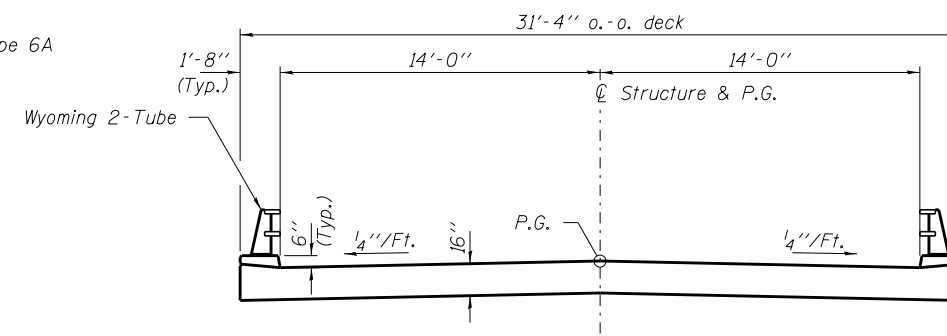
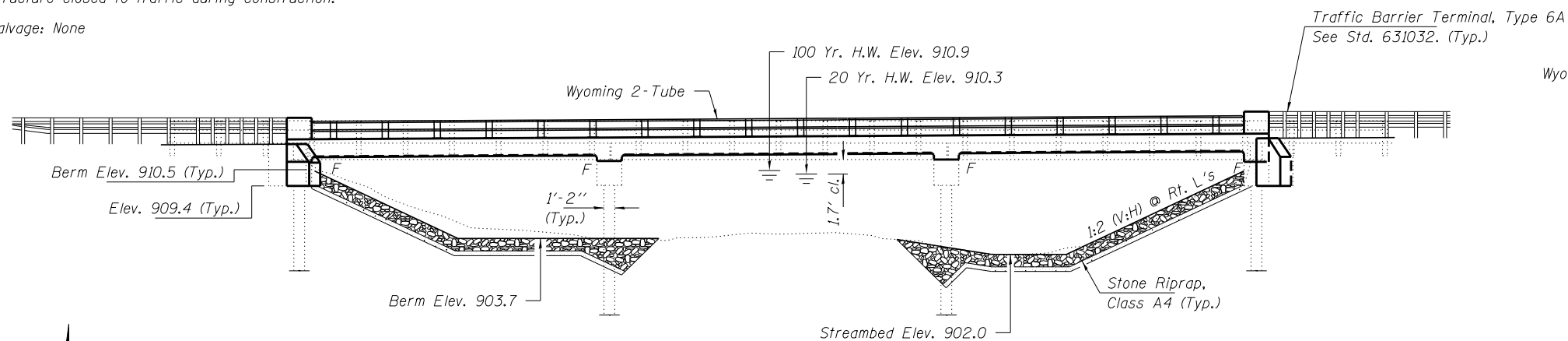


BENCHMARK: Cross notch on N.E. abutment. 17' Lt., Sta. 10+46, Elev. 913.87.

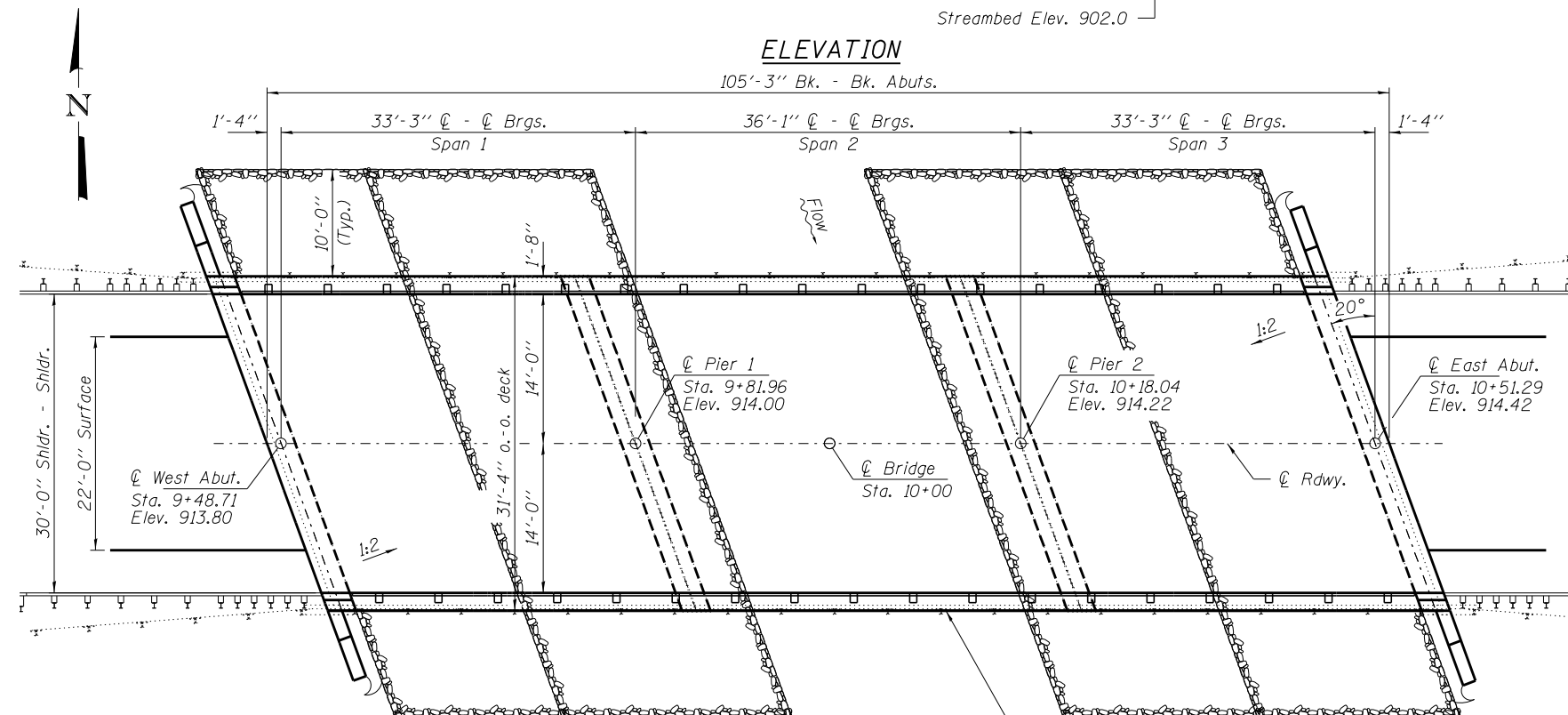
EXISTING STRUCTURE: SN 056-3118 Sta. 10+00. Three span precast concrete slab bridge on open pile bent abutments and concrete pile bent piers. 101.0' fc.-fc. abuts., 30.3' o.-o. deck.

Structure closed to traffic during construction.

Salvage: None



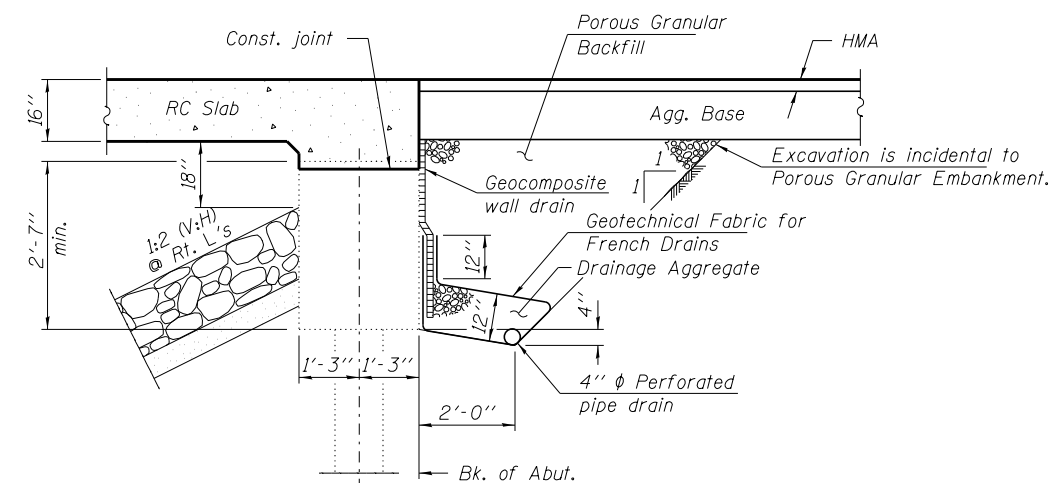
CROSS SECTION  
(Looking East)



ELEVATION

105'-3" Bk. - Bk. Abuts.

PLAN



SECTION THRU ABUTMENT  
(Horiz. dim. @ Rt. L's)

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications & all interims.  
Loading HL-93  
Proposed construction  
No FWS allowed

LOADING HS-20

Existing construction

DESIGN STRESSES

NEW CONSTRUCTION

$f'_c = 5,000$  psi  
 $f_y = 60,000$  psi (Reinf.)

EXISTING CONSTRUCTION

$f'_c = 3,500$  psi  
 $f_y = 40,000$  psi

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.076g  
Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.126g  
Soil Site Class = D

DESIGN SCOUR ELEVATION TABLE

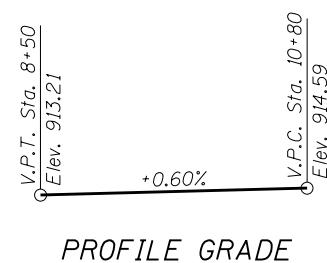
Event/Limit State	Design Scour Elevations (ft.)				Item 113
	W. Abut.	W. Pier	E. Pier	E. Abut.	
Q100	908.5	898.3	896.3	908.5	7
Q200	908.5	896.1	895.1	908.5	
Design	908.5	898.1	896.1	908.5	
Check	908.5	896.1	895.1	908.5	

WATERWAY INFORMATION

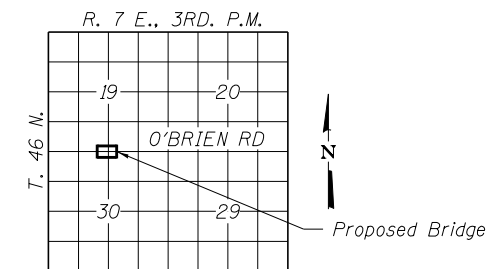
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	1880	430	430	909.89	0.46	0.46	910.35	910.35
	20	2217	470	470	910.31	0.54	0.54	910.85	910.85
Base	100	2758	520	520	910.89	0.65	0.65	911.54	911.54
	200	3080	560	560	911.22	0.71	0.71	911.93	911.93

10 Year Velocity through Existing Bridge = 4.4 fps

10 Year Velocity through Proposed Bridge = 4.4 fps



PROFILE GRADE



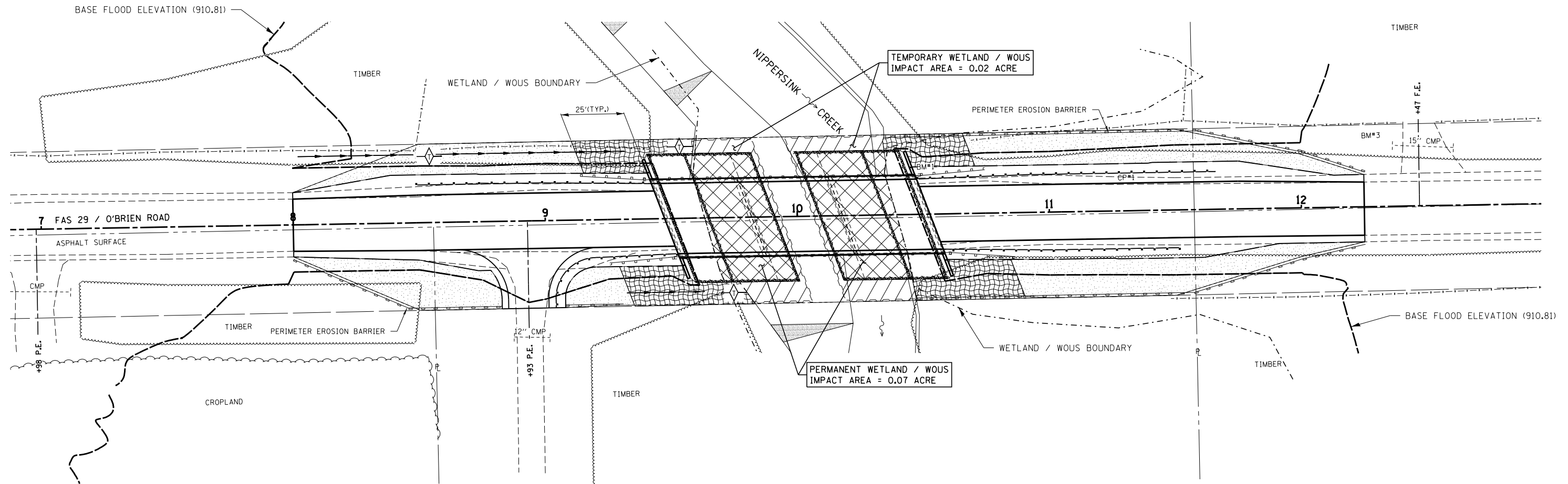
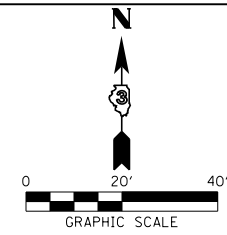
LOCATION SKETCH

GENERAL PLAN & ELEVATION  
F.A.S. 29 / O'BRIEN ROAD  
OVER NIPPERSINK CREEK  
SECTION 14-00432-00-BR  
HEBRON TOWNSHIP  
McHENRY COUNTY  
STATION 10+00  
STRUCTURE NO. 056-3118

FILE NAME = 150107-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS McHENRY COUNTY DIVISION OF TRANSPORTATION	GENERAL PLAN & ELEVATION STRUCTURE NO. 056-3118	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -			29	14-00432-00-BR	McHENRY	-	
3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE =	DRAWN - R.D.H.	REVISED -			HEBRON ROAD DISTRICT				CONTRACT NO.
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT DATE = 3/2/2016	CHECKED - S.W.M.	REVISED -			ILLINOIS FED. AID PROJECT				

# EROSION CONTROL PLAN & STORMWATER POLLUTION PREVENTION PLAN

THIS PROJECT DISTURBS 0.6 ACRES OF TOTAL LAND AREA. COMPLIANCE WITH THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER PERMIT IS ONLY NECESSARY IF A PROJECT DISTURBS 1 OR MORE ACRES OF TOTAL LAND AREA; AN NPDES STORMWATER PERMIT IS NOT REQUIRED FOR THIS PROJECT.



### LEGEND

- INDICATES DELINEATED WETLAND / WOUS BOUNDARY
- INDICATES PERMANENT WETLAND / WOUS IMPACT AREA = 0.07 ACRE TOTAL
- INDICATES TEMPORARY WETLAND / WOUS IMPACT AREA = 0.02 ACRE TOTAL
- STONE RIPRAP CLASS A4 (SEE BRIDGE PLANS FOR LAYOUT)
- SEEDING CLASS 4A (SPECIAL), EROSION CONTROL BLANKET & TOPSOIL
- SEEDING CLASS 2 (SPECIAL), EROSION CONTROL BLANKET AND TOPSOIL
- TEMPORARY DITCH CHECKS
- TEMPORARY COFFERDAMS
- PERIMETER EROSION BARRIER
- BASE FLOOD ELEVATION (910.81)
- APPROACH GUARDRAIL TERMINAL SECTIONS

FILE NAME = 150107-sht-erosion.dgn	USER NAME = \$USER\$	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>McHENRY COUNTY DIVISION OF TRANSPORTATION</b>	<b>EROSION CONTROL PLAN</b> <b>O'BRIEN ROAD</b>	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. <small>3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959</small>	PLOT SCALE = *SCALE*	DRAWN - R.D.H.	REVISED -			29	14-00432-00-BR	McHENRY		
PLOT DATE = 3/2/2016	DATE = 02/22/16	CHECKED - S.W.M.	REVISED -			HEBRON ROAD DISTRICT		CONTRACT NO.		ILLINOIS FED. AID PROJECT

SCALE: 20:1      SHEET NO. 1 OF 3 SHEETS      STA.      TO STA.

**GENERAL NOTES FOR SOIL EROSION AND SEDIMENT CONTROL**

- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED ACCORDING TO THE STANDARDS AND SPECIFICATIONS IN THE 2013 ILLINOIS URBAN MANUAL (IUM), THE ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED MARCH 1, 2016 AND THE PLAN DETAILS.
- THE McHENRY-LAKE SOIL AND WATER CONSERVATION DISTRICT (MLSWCD) MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITIES, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON SITE AT ALL TIMES. IT SHALL BE PRESENTED UPON REQUEST FROM ANY AUTHORIZED AGENT.
- THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE ENGINEER AND MLSWCD.
- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INFORM ANY SUB-CONTRACTOR(S) WHO MAY PERFORM WORK ON THIS PROJECT, OF THE REQUIREMENTS IN IMPLEMENTING AND MAINTAINING THESE EROSION CONTROL PLANS AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS SET FORTH BY THE ILLINOIS EPA.
- SOIL EROSION AND SEDIMENT CONTROL FEATURES SHALL BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF UPLAND DISTURBANCE. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER TO MINIMIZE EROSION. SOIL STABILIZATION MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS AND THE USE OF TEMPORARY OR PERMANENT MEASURES.
- PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO, ADDITIONAL PHASES OF DEVELOPMENT AND OFF-SITE BORROW OR WASTE AREAS) A SUPPLEMENTARY EROSION CONTROL PLAN SHALL BE SUBMITTED TO THE OWNER FOR REVIEW BY THE MLSWCD.
- THE CONTRACTOR SHALL CLEAN UP AND GRADE THE WORK AREA AS THE PROJECT PROGRESSES TO ELIMINATE THE CONCENTRATION OF RUNOFF. THE PAVEMENT SHALL BE CLEANED DAILY TO REMOVE EARTH MATERIAL TO THE SATISFACTION OF THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
- ALL TEMPORARY EROSION CONTROL MEASURES MUST BE MAINTAINED AND IMMEDIATELY REPLACED AS NEEDED AND AS DIRECTED BY THE ENGINEER. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL INSPECTION AND REPAIR. THE CONTRACTOR SHALL INSPECT AND COMPLETE MAINTENANCE OF ALL ITEMS A MINIMUM OF EVERY 7 DAYS AND WITHIN 24 HOURS OF A ONE-HALF INCH RAINFALL. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SEEDING IS ACHIEVED. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
- REMOVAL OF TRAPPED SEDIMENT SHALL BE PAID FOR AS EARTH EXCAVATION. SEDIMENT SHALL BE REMOVED WHEN SILTATION REACHES 50% OF THE HEIGHT OF THE BARRIER.
- TEMPORARY STOCKPILES OF MATERIALS MAY NOT BE LOCATED IN WETLANDS, FLOODPLAINS, OR DRAINAGE SWALES. THE LOCATION OF ANY TEMPORARY STOCKPILE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. STOCKPILES TO REMAIN IN PLACE MORE THAN THREE DAYS SHALL BE FURNISHED WITH EROSION & SEDIMENT CONTROL (I.E. PERIMETER EROSION BARRIER). STOCKPILES TO REMAIN IN PLACE FOR THIRTY DAYS OR MORE SHALL RECEIVE TEMPORARY SEEDING. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
- THE CONTRACTOR SHALL MAINTAIN AND PRESERVE ANY EXISTING SUB SURFACE DRAINAGE SYSTEMS (I.E. FIELD TILES) ACCORDING TO SECTION 611 OF THE IDOT STANDARD SPECIFICATIONS.
- CLEANING OF VEHICLES AND EQUIPMENT SHALL BE PERFORMED IN A MANNER TO AVOID POLLUTANT DISCHARGE TO OPEN WATERS TO THE MAXIMUM EXTENT POSSIBLE. IF THE CONTRACTOR PROPOSES TO USE AN ON-SITE WASHOUT LOCATION, THE CONTRACTOR SHALL SUBMIT A LOCATION AND DESIGN OF THE PROPOSED TEMPORARY CONCRETE WASHOUT FACILITY TO THE ENGINEER FOR APPROVAL AT LEAST 10 DAYS PRIOR TO THE FIRST POUR. THE PLAN SHALL CONFORM TO THE IUM STANDARD 654. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
- ALL NECESSARY MEASURES SHALL BE TAKEN TO CONTAIN ANY FUEL OR POLLUTION RUNOFF. LEAKY EQUIPMENT OR SUPPLIES SHALL BE IMMEDIATELY REPAIRED OR REMOVED FROM THE SITE.
- THE CONTRACTOR SHALL FURNISH AND PLACE TOPSOIL AND SHALL LAYER EROSION CONTROL BLANKET (IUM STANDARD 530) ON ALL DISTURBED EARTH SLOPES. EROSION CONTROL BLANKET WITH GREEN DYE IS NOT PERMITTED.
- TEMPORARY SEEDING SHALL BE COMPLETED ON ALL AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH CONSTRUCTION WILL BE STOPPED FOR A PERIOD OF MORE THAN 14 CALENDAR DAYS. WINTER SHUT DOWN SHALL BE ADDRESSED EARLY IN THE FALL GROWING SEASON SO THAT SLOPES AND OTHER BARE EARTH AREAS MAY BE STABILIZED WITH TEMPORARY AND/OR PERMANENT VEGETATIVE COVER FOR PROPER EROSION AND SEDIMENT CONTROL.
- TEMPORARY DITCH CHECKS SHALL BE AGGREGATE CONSTRUCTED ACCORDING TO HIGHWAY STANDARD 280001, ROLLED EXCELSIOR CONSTRUCTED ACCORDING TO IUM STANDARD 514, OR MANUFACTURED DITCH CHECKS INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

**IN-STREAM WORK NOTES**

- WORK IN THE WATERWAY SHALL BE TIMED TO TAKE PLACE DURING LOW OR NO-FLOW CONDITIONS. LOW FLOW CONDITIONS ARE FLOW AT OR BELOW THE NORMAL WATER ELEVATION.
- THE CONTRACTOR SHALL DESIGN AN IN-STREAM WORK PLAN TO ALLOW FOR THE CONVEYANCE OF THE 2-YEAR PEAK FLOW PAST THE WORK AREA WITHOUT OVERTOPPING THE COFFERDAM. THE 2-YEAR PEAK FLOW RATE IS ESTIMATED AS 560 CFS. THE CONTRACTOR SHALL SUBMIT PLANS OF THE PROPOSED COFFERDAM TO THE ENGINEER FOR APPROVAL PRIOR TO WORK.
- WATER SHALL BE ISOLATED FROM THE IN-STREAM WORK AREA USING A COFFERDAM CONSTRUCTED OF NON-ERODIBLE MATERIALS (STEEL SHEETS, AQUA BARRIERS, RIP RAP AND GEOTEXTILE LINER, ETC.). EARTHEN COFFERDAMS ARE NOT PERMISSIBLE.
- THE COFFERDAM SHALL BE CONSTRUCTED FROM THE UPLAND AREA AND NO EQUIPMENT MAY ENTER FLOWING WATER AT ANY TIME. IF THE INSTALLATION OF THE COFFERDAM CANNOT BE COMPLETED FROM SHORE AND ACCESS IS NEEDED TO REACH THE AREA TO BE COFFERED, OTHER MEASURES, SUCH AS THE CONSTRUCTION OF A CAUSEWAY, WILL BE NECESSARY TO ENSURE THAT EQUIPMENT DOES NOT ENTER THE WATER. ONCE THE COFFERDAM IS IN PLACE AND THE AREAS DEWATERED, EQUIPMENT MAY ENTER THE COFFERED AREA TO PERFORM THE WORK.
- IF BYPASS PUMPING IS NECESSARY, THE INTAKE HOSE SHALL BE PLACED ON A STABLE SURFACE OR FLOATED TO PREVENT SEDIMENT FROM ENTERING THE HOSE. THE BYPASS DISCHARGE SHALL BE PLACED ON A NON-ERODIBLE, ENERGY DISSIPATING SURFACE PRIOR TO REJOINING THE STREAM FLOW AND SHALL NOT CAUSE EROSION. FILTERING OF BYPASS WATER IS NOT NECESSARY UNLESS THE BYPASS WATER HAS BECOME SEDIMENT-LADEN AS A RESULT OF THE CURRENT CONSTRUCTION ACTIVITIES.
- DURING DEWATERING OF THE COFFERED AREA, THE HOSE INTAKE SHALL BE PLACED IN A SUMP PIT (IUM STANDARD 650) AND THE OUTLET DISCHARGED ON A NON-ERODIBLE ENERGY DISSIPATING SURFACE. ALL SEDIMENT-LADEN WATER MUST BE FILTERED. POSSIBLE OPTIONS FOR SEDIMENT REMOVAL INCLUDE BAFFLE SYSTEMS, ANIONIC POLYMER SYSTEMS, DEWATERING BAGS, OR OTHER APPROPRIATE METHODS. WATER SHALL HAVE SEDIMENT REMOVED PRIOR TO BEING RE-INTRODUCED TO THE DOWNSTREAM WATERWAY. A STABILIZED CONVEYANCE FROM THE DEWATERING DEVICE TO THE WATERWAY MUST BE IDENTIFIED IN THE PLAN. DISCHARGE WATER IS CONSIDERED CLEAN IF IT DOES NOT RESULT IN A VISUALLY IDENTIFIABLE DEGRADATION OF WATER CLARITY. THE EXACT MEANS, METHODS, AND LOCATIONS OF DEWATERING SHALL BE SHALL BE APPROVED BY THE ENGINEER AND MLSWCD BEFORE COMMENCEMENT OF WORK.
- THE AREA FROM THE TOE TO THE TOP OF THE SIDE SLOPE SHALL BE TEMPORARILY STABILIZED DURING CONSTRUCTION TO REDUCE THE POTENTIAL FOR EROSION. ALL AREAS DISTURBED DUE TO CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO PROPOSED CONDITIONS AND FULLY STABILIZED PRIOR TO ACCEPTING FLOWS.

**SOIL STABILIZATION CHART**

STABILIZATION TYPE	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
PERMANENT SEEDING				A		*	*					
DORMANT SEEDING	B										B	
TEMPORARY SEEDING			C									
EROSION CONTROL	D											

- A. SEEDING CLASS 2 (SPECIAL) SEEDING CLASS 4A (SPECIAL)  
 B. INCREASE SEEDING RATE BY 25% WHEN DORMANT SEEDING  
 C. TEMPORARY EROSION CONTROL SEEDING AND MULCH, METHOD 2  
 D. EROSION CONTROL BLANKET (PERMANENT SEED AREAS ONLY)

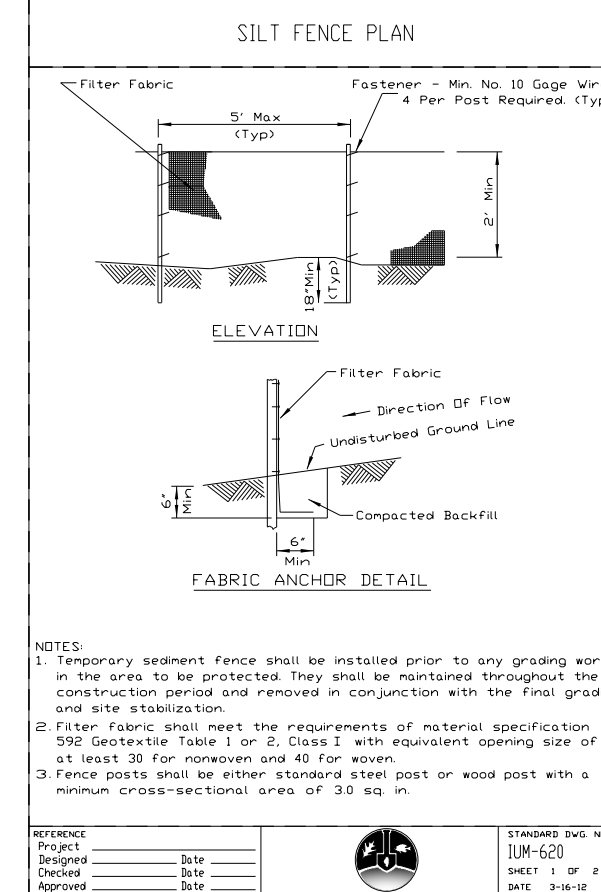
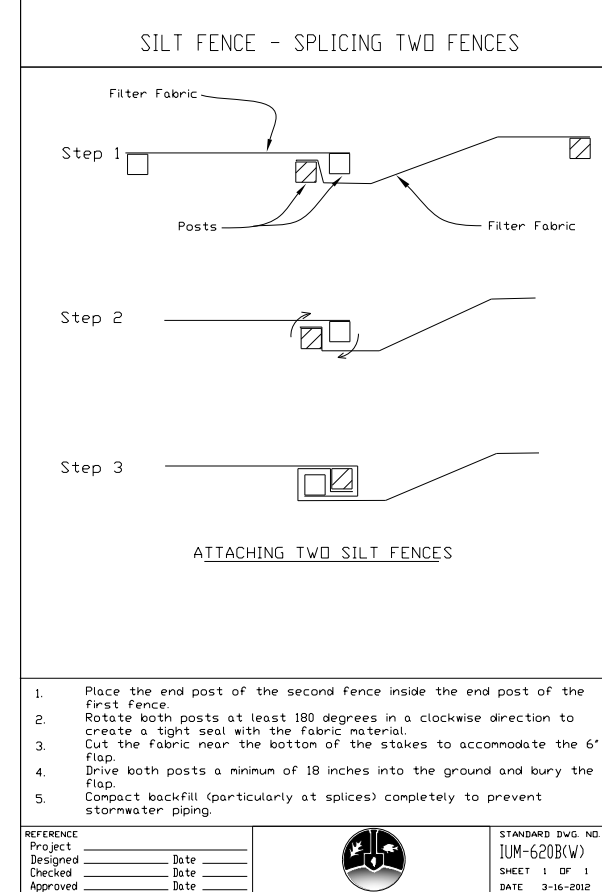
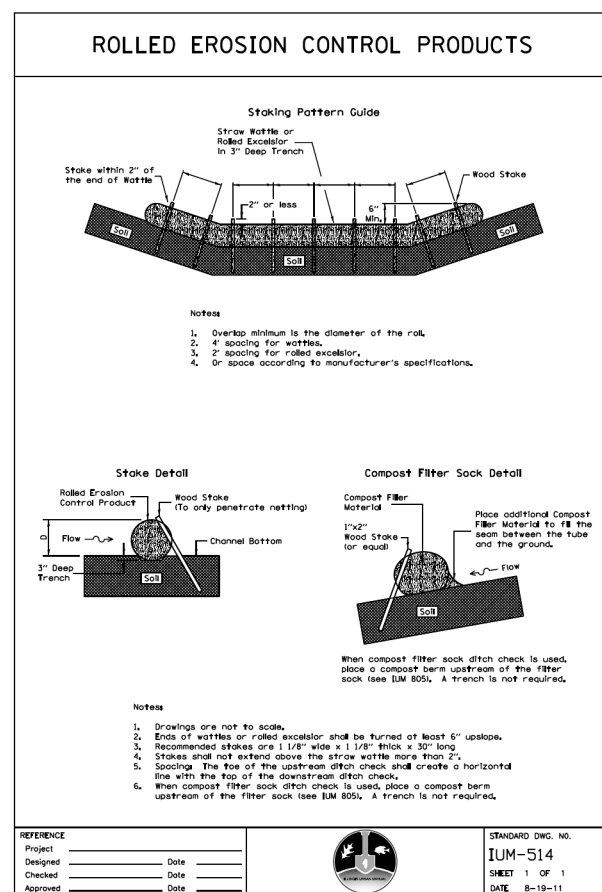
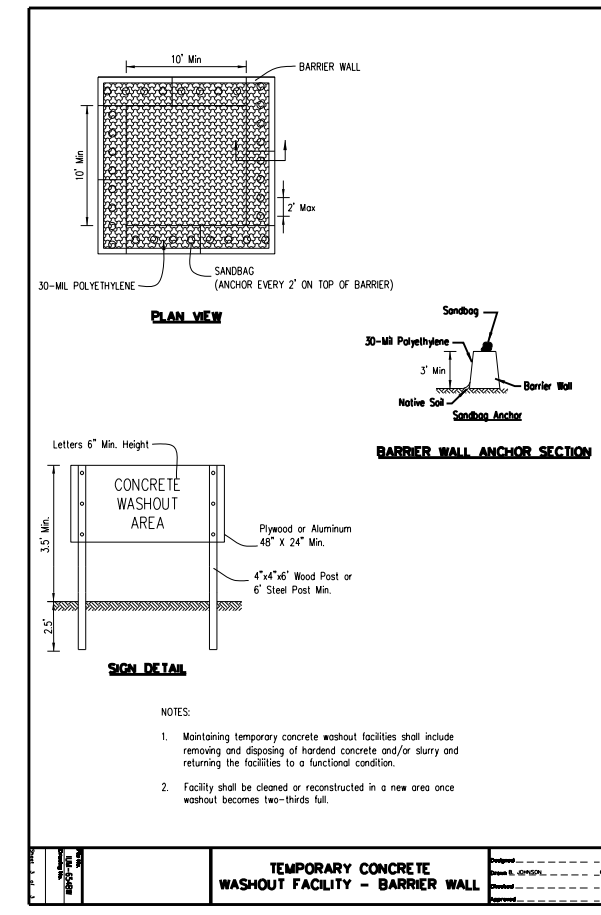
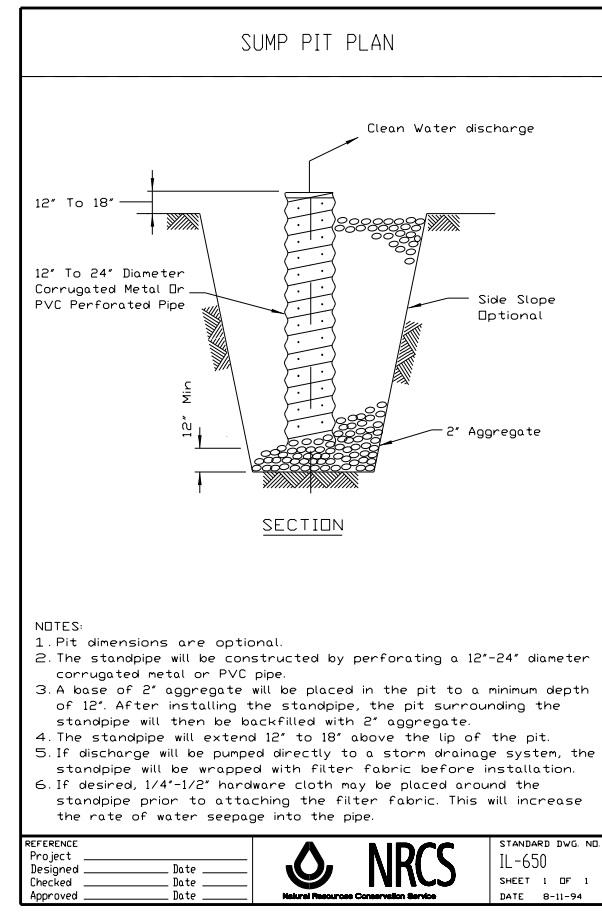
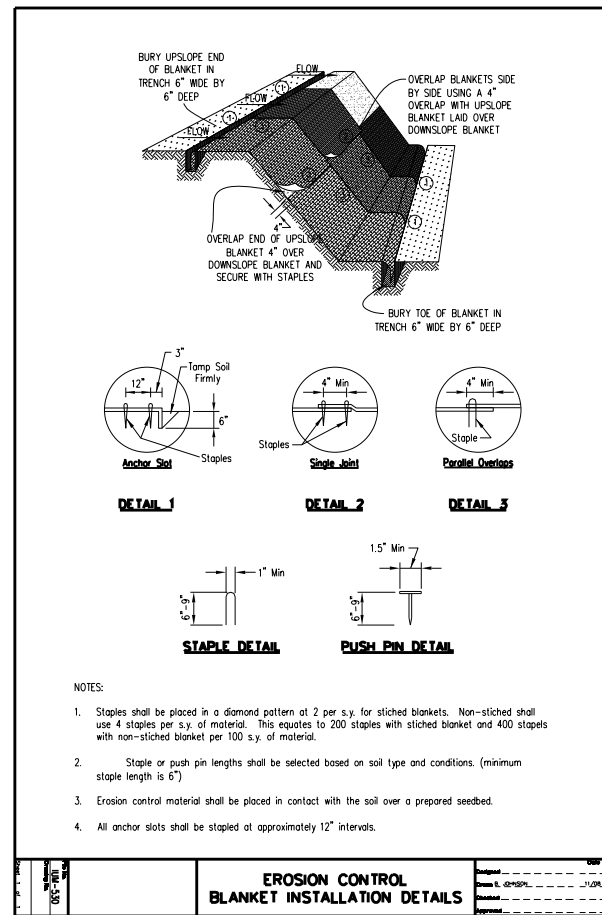
\* IRRIGATION MAY BE NEEDED DURING JUNE AND JULY

SEEDING MIXTURES		
CLASS - TYPE	SEEDS	LB/ACRE
2- ROADSIDE MIXTURE	TALL FESCUE	100
	PERENNIAL RYEGRASS	50
	CREeping RED FESCUE	40
	RED TOP	10
4A- LOW PROFILE NATIVE GRASS	ANDROPOGON SCOPARIUS (LITTLE BLUE STEM)	5
	BOUTELOUA CURTIPENDULA (SIDE-OATS GRAMA)	5
	ELYMUS CANADENSIS (CANADA WILD RYE)	1
	SPOROBOLUS HETEROLEPSIS (PRAIRIE DROPSEED)	0.5
	ANNUAL RYEGRASS	25
	OATS SPRING	25
	PERENNIAL RYEGRASS	15

**RECOMMENDED CONSTRUCTION SEQUENCE FOR EROSION CONTROL**

- INSTALL TEMPORARY EROSION CONTROL MEASURES
- REMOVE EXISTING BRIDGE DECK
- INSTALL COFFERDAMS AND DEWATER IN-STREAM WORK AREA
- EXCAVATE ABUTMENT SLOPES AND PLACE RIPRAP
- REMOVE COFFERDAMS
- CONSTRUCT EMBANKMENT FOR SHOULDER WIDENING AND GRADE DITCHES
- INSTALL TRAFFIC BARRIERS
- PERMANENT STABILIZATION OF ALL DISTURBED AREAS WITH VEGETATION
- REMOVE TEMPORARY EROSION CONTROL MEASURES

FILE NAME = 150107-sht-erosion.dgn	USER NAME = \$USER\$	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS McHENRY COUNTY DIVISION OF TRANSPORTATION</b>	<b>EROSION CONTROL STANDARDS O'BRIEN ROAD</b>	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L.S./P.E./S.E. CORP. 184.000959	PLOT SCALE = \$SCALE\$	CHECKED - S.W.M.	REVISED -			29	14-00432-00-BR	McHENRY		
PLOT DATE = 3/2/2016	DATE - 01/28/15	REVISED -				HEBRON ROAD DISTRICT		CONTRACT NO.		
						SCALE:	SHEET NO. 2 OF 3 SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT



FILE NAME = 150107-sht-erosion.dgn	USER NAME = \$USER\$	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>McHENRY COUNTY DIVISION OF TRANSPORTATION</b>	<b>EROSION CONTROL STANDARDS</b> <b>O'BRIEN ROAD</b>	F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
HAMPTON, LENZINI AND RENWICK, INC. 3035 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM L5 / PE / SE CORP. 184.000959	PLOT SCALE = *SCALE*	DRAWN - T.W.K.	REVISED -			29	14-00432-00-BR	McHENRY			
PLOT DATE = 3/2/2016	DATE - 01/28/15	CHECKED - S.W.M.	REVISED -			HEBRON ROAD DISTRICT		CONTRACT NO.		ILLINOIS FED. AID PROJECT	
		DATE - 01/28/15	REVISED -			SCALE:	SHEET NO. 3 OF 3 SHEETS	STA.	TO STA.		



Route FAS 29 / O'Brien Road	Marked Route	Section 14-00432-00-BR
Project Number BRS-0029(207)	County McHenry	Contract Number

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issues by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

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

Print Name Mr. Benjamin Redding	Title Design Manager	Agency McHenry County Div. of Trans.
Signature		Date

**I. Site Description**

A. Provide a description of the project location (include latitude and longitude):

The project is located on O'Brien Road over Nippersink Creek approximately 2.5 miles southwest of Hebron in the SW ¼ of Sec. 19 and the NW ¼ of Sec. 30, Twp 46 N, R 7 E, 3rd PM, McHenry County, Illinois. (42.443192° N, 88.462860° W).

B. Provide a description of the construction activity which is subject of this plan:

The proposed bridge rehabilitation includes removal and replacement of the existing bridge deck, construction of guardrail and the placement of stone riprap for scour control. Temporary cofferdams will be constructed in the creek to facilitate dewatering and access for riprap installation.

C. Provide the estimated duration of this project:

Construction is planned for summer 2017. The duration of construction is estimated to be two months.

D. The total area of the construction site is estimated to be 0.64 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 0.56 acres.

E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

$$C = ( 0.34 \text{ acres paved} \times 0.95 + 0.06 \text{ acres open water} \times 1.0 + 0.24 \text{ acres grass} \times 0.25 ) / 0.64 = 0.69$$

F. List all soils found within project boundaries. Include map unit name, slope information and erosivity:

The USDA Soil Survey of McHenry County identifies the soil types within the project limits and is hereby incorporated by reference in this plan.

G. Provide an aerial extent of wetland acreage at the site:

There are 0.12 acres of wetlands associated with the channel and banks of Nippersink Creek. The plan sheets show the delineated limits of wetlands.

H. Provide a description of potentially erosive areas associated with this project:

Erosive areas consist of the roadway embankment slopes and stream channel.

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g. steepness of slopes, length of scopes, etc.):

1. Install temporary erosion control measures (roadway embankment)
2. Install cofferdams and dewater piers 1 and 2 (channel)
3. Excavate areas for riprap placement (channel and abutment slopes)
4. Place riprap on abutment slopes and around piers (channel and abutment slopes)
5. Remove temporary works (channel)
6. Install traffic barriers (embankment slopes)
7. Perform permanent seeding. (channel banks and embankment slopes)

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent off site sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

The bridge and roadway are under the jurisdiction of the Hebron Township.

L. The following is a list of General NPDES ILR40 permittees within whose reporting jurisdiction this project is located.

McHenry County

M. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

Nippersink Creek

N. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

The delineated wetland sites to the north and south of the project are to remain undisturbed.

O. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- Floodplain
- Wetland Riparian
- Threatened and Endangered Species
- Historic Preservation
- 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity, or siltation
- Applicable Federal, Tribal, State or Local Programs
- Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

Nippersink Creek

a. The name(s) of the listed water body, and identification of all pollutants causing impairment:

total suspended solids

b. Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

Perimeter erosion barrier will be placed around the site during construction. All disturbed areas that will not be paved will be stabilized with permanent vegetation and erosion control blanket.

c. Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

Drainage is via overland flow to the stream channel.

d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

The areas inside the cofferdams around the piers will be dewatered prior to work. Dewatering discharges will be placed on a non-erodible surface and will flow across an energy dissipating surface prior to rejoining the stream flow.

2. TMDL (fill out this section if checked above)

a. The name(s) of the listed water body:

b. Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

c. If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet the allocation:

P. The following pollutants of concern will be associated with this construction project:

- Soil Sediment
- Concrete
- Concrete Truck waste
- Concrete Curing Compounds
- Solid waste Debris
- Paints
- Solvents
- Fertilizers / Pesticides
- Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)
- Antifreeze / Coolants
- Waste water from cleaning construction equipment
- Other (specify) \_\_\_\_\_
- Other (specify) \_\_\_\_\_
- Other (specify) \_\_\_\_\_
- Other (specify) \_\_\_\_\_
- Other (specify) \_\_\_\_\_

**II. Controls**

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in I.C. above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

A. **Erosion and Sediment Controls:** At a minimum, controls must be coordinated, installed, and maintained to:

1. Minimize the amount of soil exposed during construction activity;
2. Minimize the disturbance of steep slopes;
3. Maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible;

site- specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(B)(1) and II(B)(2), stabilization measures shall be initiated **immediately** where construction activities have temporarily or permanently ceased, but in no case more than **one (1) day** after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

1. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.
2. On areas where construction activity has temporarily ceased and will resume after fourteen (14) days, a temporary stabilization method can be used.

The following stabilization practices will be used for this project:

- |   |  |
|---|--|
| <input type="checkbox"/> Preservation of Mature Vegetation            | <input checked="" type="checkbox"/> Erosion Control Blanket / Mulching |
| <input checked="" type="checkbox"/> Vegetated Buffer Strips           | <input type="checkbox"/> Sodding                                       |
| <input type="checkbox"/> Protection of Trees                          | <input type="checkbox"/> Geotextiles                                   |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding | <input type="checkbox"/> Other (specify) _____                         |
| <input type="checkbox"/> Temporary Turf (Seeding, Class 7)            | <input type="checkbox"/> Other (specify) _____                         |
| <input checked="" type="checkbox"/> Temporary Mulching                | <input type="checkbox"/> Other (specify) _____                         |
| <input checked="" type="checkbox"/> Permanent Seeding                 | <input type="checkbox"/> Other (specify) _____                         |

Describe how the stabilization practices listed above will be utilized during construction:

Temporary Erosion Control Seeding and Mulch will be applied to all disturbed areas that have not been brought to final grade and where construction will be stopped for more than 14 days.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

Permanent Seeding – All turf areas disturbed by construction will be stabilized with permanent seeding following the final grading. Seeding mixtures will be as shown on the plans in accordance with IDOT Standard Specifications.

Erosion Control Blanket will be placed on the seeded areas areas to protect the soil from erosion until permanent vegetation is established.

A Vegetated Buffer of native species will be planted along the channel banks to filter runoff prior to release into the stream.

- C. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

The following stabilization practices will be used for this project:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Perimeter Erosion Barrier | <input type="checkbox"/> Rock Outlet Protection                |
| <input checked="" type="checkbox"/> Temporary Ditch Check     | <input checked="" type="checkbox"/> Riprap                     |
| <input type="checkbox"/> Storm Drain Inlet Protection         | <input type="checkbox"/> Gabions                               |
| <input type="checkbox"/> Sediment Trap                        | <input type="checkbox"/> Slope Mattress                        |
| <input type="checkbox"/> Temporary Pipe Slope Drain           | <input type="checkbox"/> Retaining Walls                       |
| <input type="checkbox"/> Temporary Sediment Basin             | <input type="checkbox"/> Slope Walls                           |
| <input type="checkbox"/> Temporary Stream Crossing            | <input type="checkbox"/> Concrete Revetment Mats               |
| <input type="checkbox"/> Stabilized Construction Exits        | <input type="checkbox"/> Level Spreaders                       |
| <input type="checkbox"/> Turf Reinforcement Mats              | <input checked="" type="checkbox"/> Other (specify) Cofferdams |
| <input type="checkbox"/> Permanent Check Dams                 | <input type="checkbox"/> Other (specify) _____                 |
| <input type="checkbox"/> Permanent Sediment Basin             | <input type="checkbox"/> Other (specify) _____                 |
| <input type="checkbox"/> Aggregate Ditch                      | <input type="checkbox"/> Other (specify) _____                 |



Paved Ditch

Other (specify) \_\_\_\_\_

Describe how the structural practices listed above will be utilized during construction:

Perimeter Erosion Barrier will be placed at the toe of the roadway embankment to intercept runoff and filter sediment before leaving the project area.

Temporary Ditch Checks will be placed across the roadside ditches to reduce velocity until vegetation is established.

Cofferdams - A protective barrier will be placed around the bridge piers in the channel to control infiltration of water and release of sediment during excavation and placement of riprap.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

Stone Riprap – Class A5 stone riprap will be used as permanent scour countermeasure on the abutment slopes and around the bridge piers.

**D. Treatment Chemicals**

Will polymer flocculents or treatment chemicals be utilized on this project:  Yes  No

If yes above, identify where and how polymer flocculents or treatment chemicals will be utilized on this project.

\_\_\_\_\_

**E. Permanent Storm Water Management Controls:** Provided below is a description of measures that will be installed during the construction process to control volume and pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water act.

1. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined on the basis of the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design & Environment Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

2. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of permanent storm water management controls:

Runoff will be conveyed to the stream via overland flow across vegetated areas. No change to the existing drainage conditions is anticipated from this improvement. No additional stormwater management controls will be installed as part of this project

**F. Approved State or Local Laws:** The management practices, controls, and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

The contract plans contain an erosion and sediment control plan that identifies the locations of structural and non-structural controls to be installed on-site and the areas where stabilization practices are expected to occur. The plan was designed to in accordance with IDOT erosion and sediment control policies.

G. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342a.

1. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:
  - Approximate duration of the project, including each stage of the project
  - Rainy season, dry season, and winter shutdown dates
  - Temporary stabilization measures to be employed by contract phases
  - Mobilization time frame
  - Mass clearing and grubbing/roadside clearing dates
  - Deployment of Erosion Control Practices
  - Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
  - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
  - Paving, saw-cutting, and any other pavement related operations
  - Major planned stockpiling operations
  - Time frame for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
  - Permanent stabilization activities for each area of the project
2. The Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:
  - Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
  - Material delivery, Storage, and Use - Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
  - Stockpile Management - Identify the location of both on-site and off-site stockpiles. Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
  - Waste Disposal - Discuss methods of waste disposal that will be used for this project.
  - Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.).
  - Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
  - Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
  - Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
  
  - Dewatering Activities - Identify the controls which will be used during dewatering operations to ensure sediments will not leave the construction site.
  - Polymer Flocculants and Treatment Chemicals - Identify the use and dosage of treatment chemicals and provide the Resident Engineer with Material Safety Data Sheets. Describe procedures on how the chemicals will be used and identify who will be responsible for the use and application of these chemicals. The selected individual must be trained on the established procedures.
  - Additional measures indicated in the plan.

### III. Maintenance

When requested by the Contractor, the Resident Engineer will provide general maintenance guides to the Contractor for the practices associated with this project. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

Temporary erosion control systems shall be left in place with proper maintenance until permanent erosion control is in place, and all turf areas seeded and established with a proper stand. Once permanent erosion control systems are functional, temporary items shall be removed, cleaned up and disturbed turf reseeded.

All maintenance of erosion control systems will be the responsibility of the Contractor. All locations where vehicles enter and exit the construction site and all other areas subject to erosion should also be inspected periodically.

**IV. Inspections**

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm or by the end of the following business or work day that is 0.5 inch or greater or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by e-mail at: [epa.swnoncomp@illinois.gov](mailto:epa.swnoncomp@illinois.gov), telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
Attn: Compliance Assurance Section  
1021 North Grand East  
Post Office Box 19276  
Springfield, Illinois 62794-9276

Additional Inspections Required:

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**V. Failure to Comply**

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.



**Contractor Certification Statement**

Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.G of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractors/subcontractor completing this form.

Route FAS 29 / O'Brien Road	Marked Route 	Section 14-00432-00-BR
Project Number BRS-0029(207)	County McHenry	Contract Number 

This certification statement is a part of SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

- Contractor
- Sub-Contractor

Print Name 	Signature 
Title 	Date 
Name of Firm 	Telephone 
Street Address 	City/State/Zip 

Items which the Contractor/subcontractor will be responsible for as required in Section II.G. of SWPPP: