ARKANSAS DEPARTMENT OF TRANSPORTATION
ARDOT.gov | IDriveArkansas.com | Scott E. Bennett, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261
Phone: 501.569.2000 | Voice/TTY 711 | Fax: 501.569.2400

May 15, 2018

Ms. M. Elaine Edwards
Chief, Regulatory Division
Little Rock District Corps of Engineers
P.O. Box 867
Little Rock, AR 72203-0867

RE: Job Number 070379
Hurricane Creek Str. & Apprs.
Route 172, Section 1
Calhoun County

Dear Ms. Edwards:

Enclosed are the Categorical Exclusion, supporting illustrations and proposed construction plans for the referenced project. The proposed ARDOT project will replace the existing bridge over Hurricane Creek on Highway 172 in Calhoun County. The existing 47' x 26' timber frame bridge supported by multi-beam timer substructure will be replaced with a 12' x 7' x 56' quintuple reinforced concrete box culvert on existing location. The existing roadway consists of two 10' travel lanes with 2-foot wide gravel shoulders, and the proposed improvements will include two 10' travel lanes with 4-foot shoulders on either side. A detour road, approximately 70' downstream of the existing bridge, will be used during construction for maintenance of traffic.

Construction of the box culvert over Hurricane Creek will permanently clear 0.63 acre of bottomland hardwood forested wetlands. Permanent stream impacts resulting from the bridge replacement are estimated at 0.04 acre. Temporary stream impacts resulting from the detour are estimated at 0.02 acre with 64 feet of Hurricane Creek routed through temporary pipe culverts. Temporary bottomland hardwood forested wetland impacts due to the temporary detour during construction are estimated at 0.93 acre. Construction of the proposed box culvert and removal of the existing structure, over Hurricane Creek, will not require any work roads.

Total wetland impacts are estimated at 1.56 acres, and total impacts to other waters of the United States are estimated at less than 0.1 acre. The ARDOT proposes the use of 20.1 wetland credits to mitigate the 1.56 acres of wetland

impacts. The wetland credits will be mitigated at an approved mitigation bank servicing the area.

The proposed project will not impact State or Federal lands, National or State wild or scenic rivers, Extraordinary Resource water bodies, or Ecologically Sensitive Waters.

Please review this project for concurrence that construction can proceed under the terms of a Nationwide 23 for Approved Categorical Exclusions. If additional information is required, please contact Kayti Ewing or Josh Seagraves of my staff at (501) 569-2522.

Sincerely,

Brenda Pace

for John Fleming
Division Head
Environmental Division

JF:JS:KE:ym

Enclosures
Categorical Exclusion
Supporting Illustrations
Proposed Construction Plans

ARKANSAS DEPARTMENT OF TRANSPORTATION
ARDOT.gov | IDriveArkansas.com | Scott E. Bennett, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2000

# INTEROFFICE MEMORANDUM

**March 16, 2018**

**TO:** Master Files

**FROM:** John Fleming, Division Head, Environmental Division

**SUBJECT:** Job Number 070379
FAP Number NHPP-0007(29)
Hurricane Creek Str. & Apprs. (S)
Route 172, Section 1
Bridge Number M2208
Calhoun County
Tier 2 Categorical Exclusion

The Environmental Division has reviewed the referenced project and it falls within the definition of a Tier 2 Categorical Exclusion under 23 Code of Federal Regulations, Section 771.117, and the ARDOT/FHWA Memorandum of Agreement on the processing of Categorical Exclusions. A public hearing will not be offered for this project.

The purpose of this project is to replace a structurally deficient bridge on Highway 172 in Calhoun County. Total length of the project is 0.134 mile. A project location map is attached.

The existing Hurricane Creek Bridge (Bridge Number M2208) consists of a 3-span, 47' x 26' timber frame structure supported by a multi-beam timber substructure, timber end caps, and asphalt surfacing. The bridge has a sufficiency rating of 31.7. The existing roadway approaches consist of two 10-foot wide paved travel lanes with 2-foot wide gravel shoulders. Existing right of way width is 80 feet.

Proposed improvements include replacing the bridge with a quintuplet 12' x 7' x 56' box culvert on existing location. A detour road used during

construction will be located 70' downstream. The new approaches will consist of two 10-foot wide paved travel lanes with 4-foot wide shoulders. The average new right of way width will be 170 feet. Approximately 1.1 acres of additional right of way will be required for this project with 0.36 acre of temporary construction easements.

Design data for this project is as follows:

| Design Year | Average Daily Traffic | Percent Trucks | Design Speed |
|---|---|---|---|
| 2018 | 250 | 11 | 55 mph |
| 2038 | 300 | 11 | 55 mph |

There are no relocations, environmental justice issues, floodplains, prime farmland, cultural resources, or wellhead protection areas/public water supplies associated with this project. Field inspections found no evidence of existing underground storage tanks or hazardous waste deposits.

The official species list obtained through the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation website identifies the Pink Mucket (*Lampsilis abrupta*) and Rabbitsfoot (*Theliderma cylindrica*) as potentially occurring within the proposed project area. A 'no effect' determination was made for the federally listed mussel species, as there is no suitable habitat in the project area. The USFWS species list is attached.

Temporary bottomland hardwood forested wetland impacts due to the temporary detour during construction are estimated at 0.93 acre. Temporary stream impacts resulting from the detour are estimated at 0.02 acre with 64 feet of Hurricane Creek routed through temporary pipe culverts. Approximately 0.63 acre of bottomland hardwood forested wetland will be permanently cleared for construction and maintenance of the proposed box culvert. Permanent stream impacts resulting from the bridge replacement are estimated at 0.04 acre. The proposed quintuple box culvert will permanently impact approximately 58 feet of Hurricane Creek.

Total wetland impacts are estimated at 1.56 acres. Some of the impacted wetlands are within existing right of way. Total impacts to other waters of the U.S. are estimated at less than 0.1 acre. The ARDOT proposes the use of 20.1 wetland credits to mitigate the 1.56 acres of wetland impacts. The wetland

credits will be mitigated at an approved mitigation bank servicing the area. Construction of the proposed project should be allowed under the terms of a Nationwide Permit 23 for Approved Categorical Exclusions.

Noise predictions have been made for this project utilizing the Federal Highway Administration's TNM 2.5 (Traffic Noise Model) procedures. These procedures indicate that noise levels are below the FHWA noise criteria beyond the project's proposed right of way limits. Any increases in roadway noise levels will not be the result of the proposed project, but instead a result of traffic volume increases during the planning period (Year 2038). Therefore, any noise level increases will occur independently of this proposed project, and no project related noise impacts are anticipated. In compliance with Federal guidelines, local authorities will not require notification.

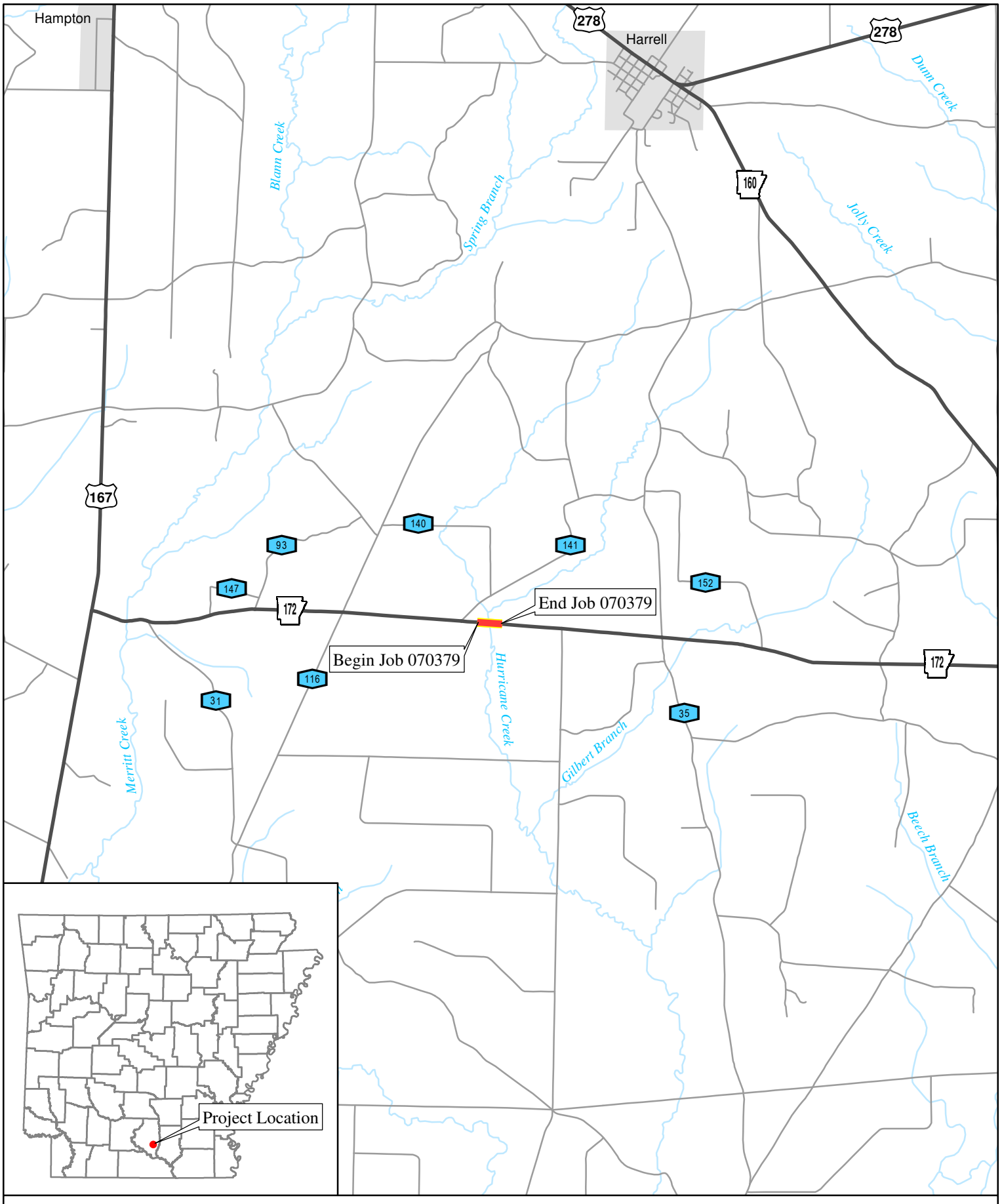
Attachments:
- Project Location Map
- SHPO Clearance
- Environmental Study Checklist
- USFWS Species List
- Design Sheets

Approved:

Kevin Thornton
Assistant Chief Engineer-Planning

JF:TT:fc

c: Program Management
- Right of Way
- Roadway Design
- Bridge Division
- District 7
- FHWA
- Master File


Hampton
Harrell
278
278
160
167
172
172
93
140
141
147
152
116
31
35
Blann Creek
Spring Branch
Dunn Creek
Jolly Creek
Merritt Creek
Hurricane Creek
Gilbert Branch
Beech Branch
End Job 070379
Begin Job 070379
Project Location
N
0 2,000 4,000
Feet
ARDOT - Environmental GIS - Dudley
March 14, 2018
Job 070379
Hurricane Creek Str. & Apprs.
(Hwy. 172)
Calhoun County
Project Location

ARKANSAS DEPARTMENT OF TRANSPORTATION
ArDOT.gov | IDriveArkansas.com | Scott E. Bennett, P.E., Director
10324 Interstate 30 | P.O. Box 2261 | Little Rock, AR 72203-2261
Phone: 501.569.2000 | Voice/TTY 711 | Fax: 501.569.2400

100489
FHWA

February 20, 2018

RECEIVED
ARDOT
FEB 26 2018
ENVIRONMENTAL
DIVISION

AHPP
FEB 20 2018

Ms. Stacy Hurst
Arkansas Historic Preservation Program
1100 North Street
Little Rock, Arkansas 72201

Re: Job Number 070379
Hurricane Str. & Apprs. (S)
Calhoun County

Dear Ms. Hurst:

Please find enclosed a Project Identification Form (PIF) for the above referenced project. This project proposes to replace Bridge Number M2208 on Highway 172 in Calhoun County. If you have any questions or require additional information about the project, please contact Milton Hughes of my staff at 501-569-2080.

Sincerely,

Brenda Price

for John Fleming
Division Head
Environmental Division

Enclosures
PIF

JF:DW:MH:fc

Date 2/22/2018
No known historic properties will be affected by this undertaking. This effect determination could change should new information come to light.
Arkansas State Historic Preservation Officer

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480
http://www.fws.gov/arkansas-es

In Reply Refer To: February 23, 2018
Consultation Code: 04ER1000-2018-SLI-0590
Event Code: 04ER1000-2018-E-00850
Project Name: 070379 Richland Creek Str. & Apprs. (S)

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies endangered, threatened, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). **This letter only provides an official species list and technical assistance; if you determine that listed species and/or designated critical habitat may be affected in any way by the proposed project, even if the effect is wholly beneficial, consultation with the Service will be necessary.**

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found on our website.

**Please visit our website at http://www.fws.gov/arkansas-es/IPaC/home.html for species-specific guidance to avoid and minimize adverse effects to federally endangered, threatened, proposed, and candidate species.** Our web site also contains additional information on species life history and habitat requirements that may be useful in project planning.

**If your project involves in-stream construction activities, oil and natural gas infrastructure, road construction, transmission lines, or communication towers, please review our project specific guidance at http://www.fws.gov/arkansas-es/IPaC/ProjSpec.html.**

The karst region of Arkansas is a unique region that covers the **northern third of Arkansas** and we have specific guidance to conserve sensitive cave-obligate and bat species. **Please visit http://www.fws.gov/arkansas-es/IPaC/Karst.html to determine if your project occurs in the karst region and to view karst specific-guidance.** Proper implementation and maintenance of best management practices specified in these guidance documents is necessary to avoid adverse effects to federally protected species and often avoids the more lengthy formal consultation process.

**If your species list includes any mussels, Northern Long-eared Bat, Indiana Bat, Yellowcheek Darter, Red-cockaded Woodpecker, or American Burying Beetle, your project may require a presence/absence and/or habitat survey prior to commencing project activities.** Please check the appropriate species-specific guidance on our website to determine if your project requires a survey. We strongly recommend that you contact the appropriate staff species lead biologist (see office directory or species page) prior to conducting presence/absence surveys to ensure the appropriate level of effort and methodology.

**Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further.** Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make “no effect” determinations. If you determine that your proposed action will have “no effect” on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take “after-the-fact.” For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, **the accuracy of this species list should be verified after 90 days.** This verification can be

completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Arkansas Ecological Services Field Office**
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

# Project Summary

Consultation Code: 04ER1000-2018-SLI-0590

Event Code: 04ER1000-2018-E-00850

Project Name: 070379 Richland Creek Str. & Apprs. (S)

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: A bridge replacement in Calhoun County.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/33.45080155938223N92.42209493832863W


Counties: Calhoun, AR

# Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

## Clams

| NAME | STATUS |
|---|---|
| Pink Mucket (pearlymussel) *Lampsilis abrupta*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/7829 | Endangered |
| Rabbitsfoot *Quadrula cylindrica cylindrica*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/5165 | Threatened |

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# ARDOT ENVIRONMENTAL IMPACTS ASSESSMENT FORM

**ARDOT Job Number** 070379 **FAP Number** NHPP-0007(29)

**Job Title** Hurricane Creek Str. & Apprs. (S)

| Environmental Impacts | None | Minor | Significant | Comments |
|---|---|---|---|---|
| Air Quality | X | | | |
| Construction Impacts | | X | | Temporary |
| Cultural Resources | X | | | SHPO approval attached |
| Economic | X | | | |
| Endangered Species | X | | | "No effect" determination |
| Energy Resources | X | | | |
| Environmental Justice/Title VI | X | | | |
| Fish and Wildlife | | X | | Minor during construction |
| Floodplains | X | | | |
| Forest Service Property | X | | | |
| Hazardous Materials/Landfills | X | | | |
| Land Use Impacts | X | | | |
| Migratory Birds | X | | | |
| Navigation/Coast Guard | X | | | |
| Noise Levels | X | | | |
| Prime Farmland | X | | | |
| Protected Waters | X | | | |
| Public Recreation Lands | X | | | |
| Public Water Supply/WHPA | X | | | |
| Relocatees | X | | | |
| Section 4(f)/6(f) | X | | | |
| Social | X | | | |
| Underground Storage Tanks | X | | | |
| Visual Impacts | X | | | |
| Stream Impacts | | X | | Section 404 NW23 Permit |
| Water Quality | | X | | Temporary during construction |
| Wetlands | | X | | 1.56 acres impacted |
| Wildlife Refuges | X | | | |

Section 401 Water Quality Certification Required? No

Short-term Activity Authorization Required? Yes

Section 404 Permit Required? Yes Type NW23

Remarks:

Signature of Evaluator Dan Nix Date March 15, 2018

Date Sent: February 22, 2018

# ROADWAY DESIGN REQUEST

Job Number 070379 FAP No. _____ County Calhoun

Job Name Hurricane Creek Str. & Apprs. (S)

Design Engineer Primary Design Environmental Staff _____

Brief Project Description Bridge replacement

A. Existing Conditions:

Roadway Width: 20'-0" Shoulder Type/Width: 2' gravel

Number of Lanes and Width: 2 @ 10' Existing Right-of-Way: 80'

Sidewalks? N/A Location: _____ Width: _____

Bike Lanes? N/A Location: _____ Width: _____

B. Proposed Conditions:

Roadway Width: 20'-0" Shoulder Type/Width: 4' – 2' paved

Number of Lanes and Width: 2 @ 10' Proposed Right-of-Way: 170'

Sidewalks? N/A Location: _____ Width: _____

Bike Lanes? N/A Location: _____ Width: _____

C. Construction Information:
If detour: Where: 70' rt. downstream Length: 900'

D. Design Traffic Data:
2018 ADT: 250 2038 ADT: 300 % Trucks: 11
Design Speed: 55 m.p.h.

E. Approximate total length of project: 0.134 mile(s)

F. Justification for proposed improvements: Replace structurally deficient bridge

G. Total Relocatees: 0 Residences: 0 Businesses: 0

H. Have you coordinated with any outside agencies (e.g., FHWA, City, County, etc.)? N/A

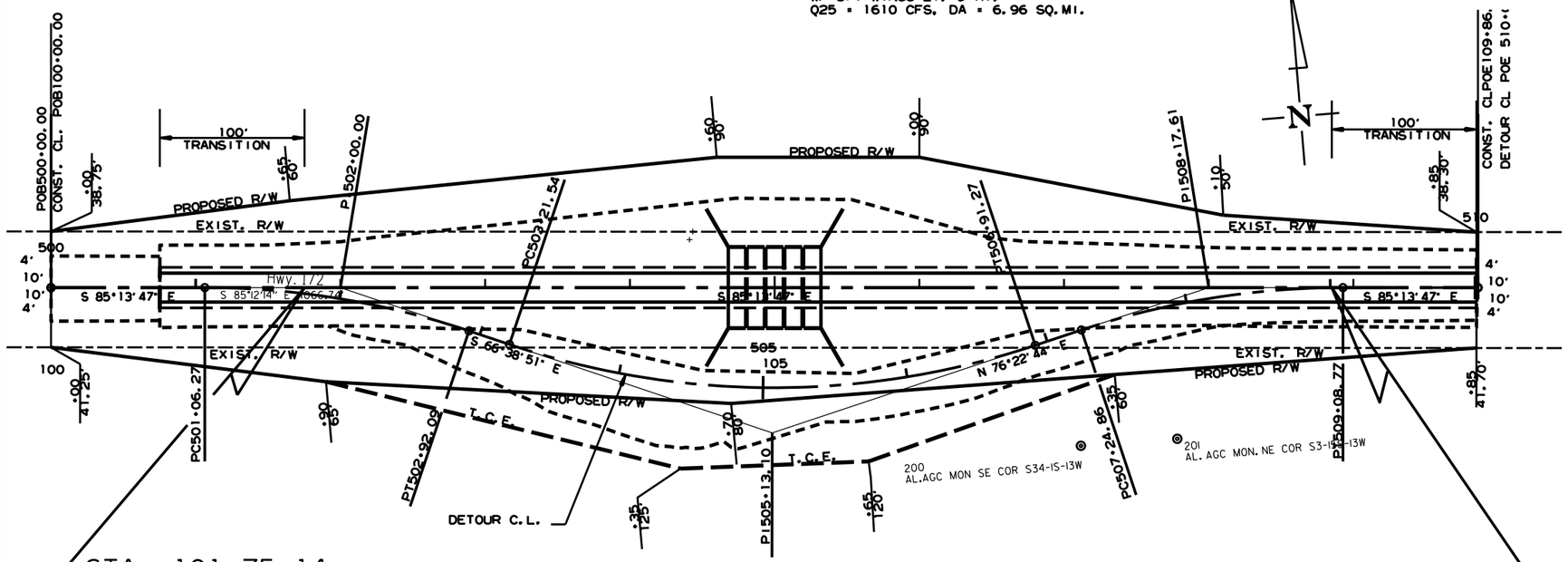
| Agency/Official | Person Contacted | Date |
|---|---|---|
| | | |
| | | |
| | | |

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070379 | | |

(2) PLAN AND PROFILE SHEETS

# PRELIMINARY
SUBJECT TO REVISION

STA. 105+00.00 CONSTRUCT QUINT.
12' X 7' X 56' R.C. BOX CULVERTS
W/ 3:1 WINGS LT. & RT.
Q25 = 1610 CFS, DA = 6.96 SQ.MI.



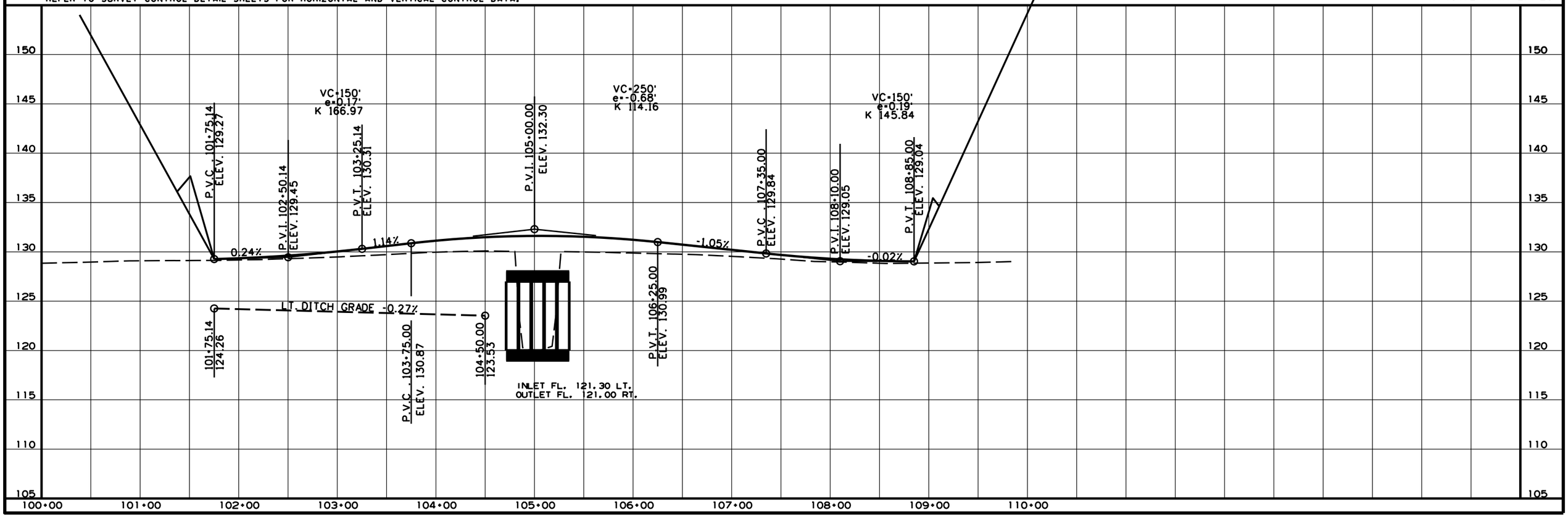

STA. 101+75.14
BEGIN JOB 070379

STA. 104+80 - STA. 105+26 IN PLACE
46' X 25' CLEAR ROADWAY BRIDGE NO. M2208
CONSISTING OF TIMBER STRINGER, MULTI BEAM.
REMOVAL OF EXISTING BRIDGE STRUCTURE = 1.00 LUMP SUM

STA. 108+85.00
END JOB 070379

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 172 MAIN LANES



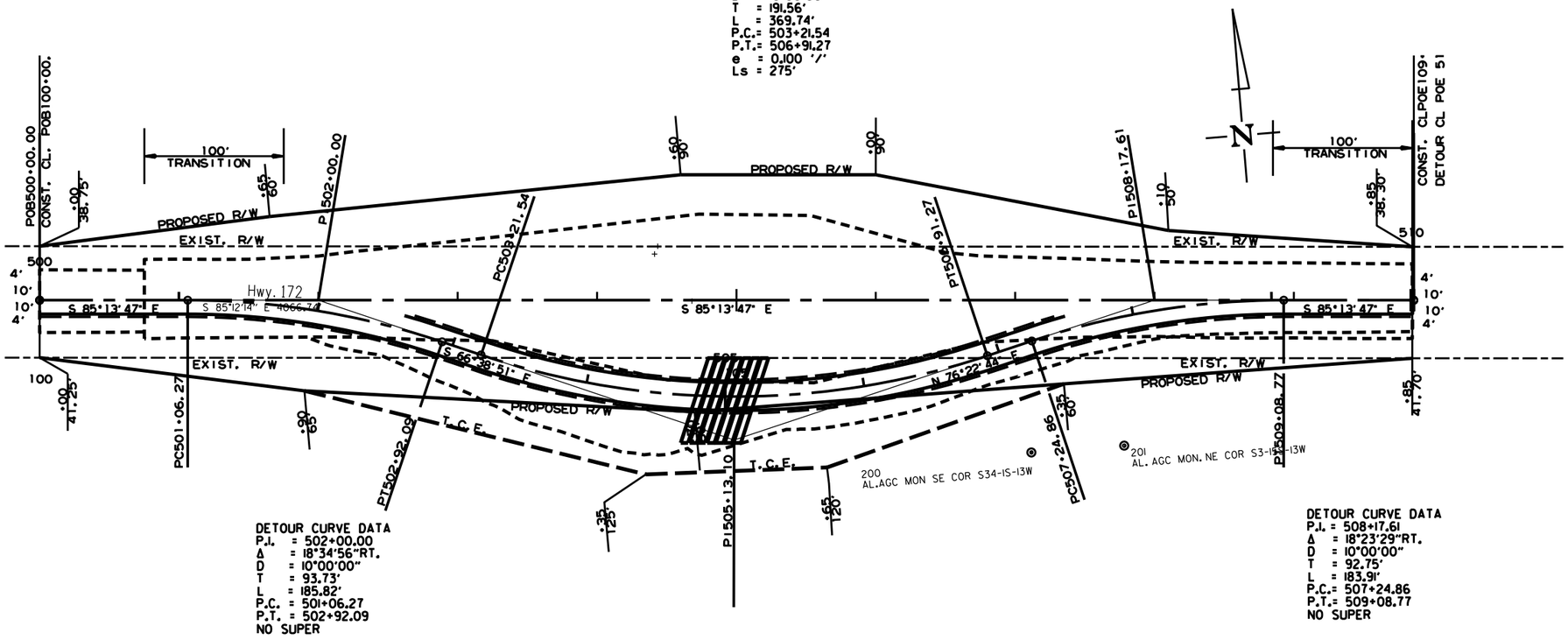
| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED.RD. DIST.NO. | STATE | FED.AID PROJ.NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|---|---|---|
| | | | | 6 | ARK. | | | |
| | | | | JOB NO. | | 070379 | | |

(2) DETOUR PLAN AND PROFILE SHEETS

# PRELIMINARY
SUBJECT TO REVISION

DETOUR CURVE DATA
P.I. = 505+13.10
Δ = 36°58'25" LT.
D = 10°00'00"
T = 191.56'
L = 369.74'
P.C.= 503+21.54
P.T.= 506+91.27
e = 0.100 '/'
Ls = 275'

STA. 505+06 INSTALL
SEPTUPLE 60" X 64" TEMPORARY
PIPE CULVERTS ON 18° LT. FWD. SKEW



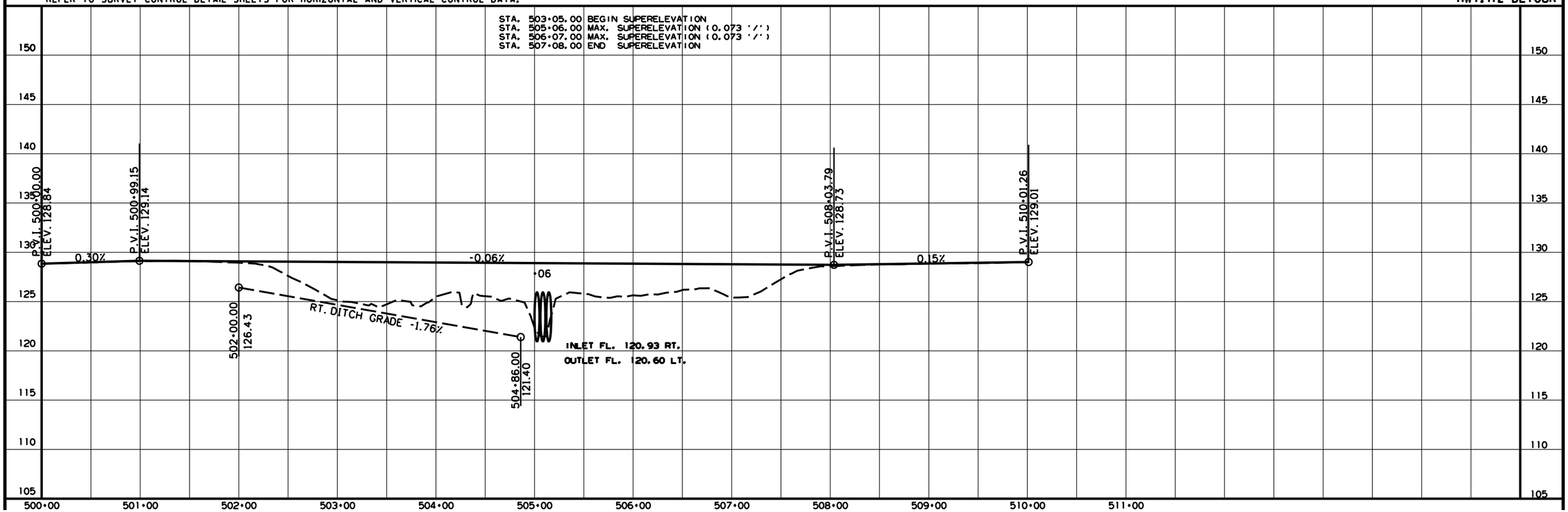

DETOUR CURVE DATA
P.I. = 502+00.00
Δ = 18°34'56"RT.
D = 10°00'00"
T = 93.73'
L = 185.82'
P.C. = 501+06.27
P.T. = 502+92.09
NO SUPER

DETOUR CURVE DATA
P.I. = 508+17.61
Δ = 18°23'29"RT.
D = 10°00'00"
T = 92.75'
L = 183.91'
P.C.= 507+24.86
P.T.= 509+08.77
NO SUPER

REFER TO SURVEY CONTROL DETAIL SHEETS FOR HORIZONTAL AND VERTICAL CONTROL DATA.

HWY. 172 DETOUR

STA. 503+05.00 BEGIN SUPERELEVATION
STA. 505+06.00 MAX. SUPERELEVATION (0.073 '/')
STA. 506+07.00 MAX. SUPERELEVATION (0.073 '/')
STA. 507+08.00 END SUPERELEVATION



## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: 070379 Hurricane Creek Str. & Apprs. City/County: Calhoun County Sampling Date: 8/9/2017

Applicant/Owner: ArDOT State: AR Sampling Point: Plot 1

Investigator(s): Kayti Ewing Section, Township, Range: 34, 14S, 13W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR or MLRA): LRR P Lat: 33.450710° Long: -92.422262° Datum: WGS

Soil Map Unit Name: Guyton soils NWI classification: Forested Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ 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? | Yes ✓ No _____ | **Is the Sampled Area within a Wetland?** Yes ✓ No _____ |
| Hydric Soil Present? | Yes ✓ No _____ | |
| Wetland Hydrology Present? | Yes ✓ No _____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

**Wetland Hydrology Present?** Yes ✓ No _____

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

Remarks:

**VEGETATION (Four Strata)** – Use scientific names of plants.

Sampling Point: **Plot 1**

| Tree Stratum (Plot size: ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Quercus phellos | 35 | Yes | FACW |
| 2. Quercus nigra | 25 | Yes | FAC |
| 3. Magnolia virginiana | 20 | Yes | FACW |
| 4. Liquidambar styraciflua | 15 | No | FAC |
| 5. Acer rubrum | 5 | No | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 = Total Cover | | |
| 50% of total cover: 50 | 20% of total cover: 20 | | |
| Sapling/Shrub Stratum (Plot size: ) | | | |
| 1. Ilex opaca | 25 | Yes | FAC |
| 2. Liquidambar styraciflua | 10 | Yes | FAC |
| 3. Quercus phellos | 10 | Yes | FACW |
| 4. Callicarpa americana | 5 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 50 = Total Cover | | |
| 50% of total cover: 25 | 20% of total cover: 10 | | |
| Herb Stratum (Plot size: ) | | | |
| 1. Carex joorii | 15 | Yes | OBL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 15 = Total Cover | | |
| 50% of total cover: 7.5 | 20% of total cover: 3 | | |
| Woody Vine Stratum (Plot size: ) | | | |
| 1. Brunnichia ovata | 20 | Yes | FACW |
| 2. Smilax glauca | 15 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 35 = Total Cover | | |
| 50% of total cover: 17.5 | 20% of total cover: 7 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 0 (A) | | 0 (B) |

Prevalence Index = B/A = 0

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ___

Remarks: (If observed, list morphological adaptations below).

## SOIL

Sampling Point: **Plot 1**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 5/2 | 80-98 | 10YR 4/4 | 2-20 | C | PL | silt loam | |
| 6-12 | 10YR 6/2 | 80-98 | 10YR 4/4 | 2-20 | C | PL | silt loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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?** **Yes** ✓ **No** _____

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: 070379 Hurricane Creek Str. & Apprs. City/County: Calhoun County Sampling Date: 8/9/2017

Applicant/Owner: ArDOT State: AR Sampling Point: Plot 2

Investigator(s): Kayti Ewing Section, Township, Range: 34, 14S, 13W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR or MLRA): LRR P Lat: 33.451050° Long: -92.421646° Datum: WGS

Soil Map Unit Name: Guyton soils NWI classification: Forested Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ 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? | Yes ✓ | No _____ | **Is the Sampled Area within a Wetland?** Yes ✓ No _____ |
| Hydric Soil Present? | Yes ✓ | No _____ | |
| Wetland Hydrology Present? | Yes ✓ | No _____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No ✓ | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No ✓ | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No ✓ | Depth (inches): _____ |

**Wetland Hydrology Present?** Yes ✓ No _____

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

Remarks:

**VEGETATION (Four Strata)** – Use scientific names of plants.

Sampling Point: **Plot 2**

| Tree Stratum (Plot size: ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Quercus phellos | 35 | Yes | FACW |
| 2. Quercus nigra | 35 | Yes | FAC |
| 3. Magnolia virginiana | 20 | Yes | FACW |
| 4. Acer rubrum | 10 | No | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 100 | = Total Cover | |
| 50% of total cover: 50 | 20% of total cover: 20 | | |
| **Sapling/Shrub Stratum** (Plot size: ) | | | |
| 1. Liquidambar styraciflua | 25 | Yes | FAC |
| 2. Quercus phellos | 10 | No | FACW |
| 3. Callicarpa americana | 5 | No | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 40 | = Total Cover | |
| 50% of total cover: 20 | 20% of total cover: 8 | | |
| **Herb Stratum** (Plot size: ) | | | |
| 1. Eupatorium rotundifolium | 15 | Yes | FAC |
| 2. Saccharum brevibarbe | 10 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 25 | = Total Cover | |
| 50% of total cover: 12.5 | 20% of total cover: 5 | | |
| **Woody Vine Stratum** (Plot size: ) | | | |
| 1. Brunnichia ovata | 15 | Yes | FACW |
| 2. Smilax glauca | 10 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 25 | = Total Cover | |
| 50% of total cover: 12.5 | 20% of total cover: 5 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 0 (A) | | 0 (B) |

Prevalence Index = B/A = 0

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ___

Remarks: (If observed, list morphological adaptations below).

## SOIL

Sampling Point: **Plot 2**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-7 | 10YR 5/2 | 80-98 | 10YR 4/6 | 2-20 | C | PL | silt loam | |
| 7-12 | 10YR 6/2 | 80-98 | 10YR 4/6 | 2-20 | C | PL | silt loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

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

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ 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?** **Yes** ✓ **No** _____

Remarks:

**Appendix II**

# Summary 2002 Charleston SOP for Calculating Required Mitigation Credits

## Definitions

**Cumulative impact** factor, $\sum AA_i$ stands for the sum of the acres of adverse impacts to aquatic areas for the overall project. When computing this factor, round to the nearest tenth decimal place using even number rounding. Thus 0.01 and 0.050 are rounded down to give a value of zero while 0.051 and 0.09 are rounded up to give 0.1 as the value for the cumulative impact factor. The cumulative impact factor for the overall project must be used in each area column on the Required Mitigation Credits Worksheet.

**Duration** means the length of time adverse impacts will last (in years).

**Dominant impact** factors include fill, impound, drain, dredge, clear, and shade.

**Existing Condition** means the degree of disturbance.

***Fully functional*** means the system type is functionally naturally. Examples: pristine wetlands or riverine habitats, wetlands with no effective drainage.

***Slightly impaired*** means site disturbances have occurred but functional recovery could be reversed through natural processes, such as clear-cut wetlands, utility corridors, wetlands with ditches that impair but don't eliminate wetland hydrology.

***Impaired*** means functional recovery from disturbance is unlikely to occur naturally. Bedded pine monoculture, severely fragmented areas, channelized streams. Vegetated ditches are here included.

***Very impaired*** means full recovery would require major restoration effort. Filled areas, drained wetlands.

**Location** is here defined for the GCMBS in order to increase mitigation ratios for impacts occurring further from the mitigation site.

***On site*** is here defined as impacts occurring in the Black River, Cache River/Bayou DeView, and Lower White River Wetland Planning Areas.

***Off site*** is here defined as impacts occurring in the L'Anguille River, St. Francis, and Big Creek Wetland Planning Areas.

**Lost Type** categories are based on the suite of functions that they perform.

***Type A*** includes: Riverine systems including headwaters and riparian zones
Bottomland hardwoods

***Type B*** includes: Seeps and bogs
Savannahs and flatwoods
Depressions
Pocosins and bays

***Type C*** includes: Man-made lakes and ponds
Vegetated lake littoral
Impoundments

Other habitat types need to be evaluated and assigned a category ranking. Farmed wetlands and vegetated ditches are here defined as Type C. Scrub-Shrub wetlands are here defined as Type B.

**Priority Category** means designated areas of aquatic systems that provide functions of recognized importance because of their inherent functions, their position in the landscape, or their rarity.

***Primary priority*** areas provide important contributions to biodiversity or high levels of functions contributing to landscape or human values. Examples include Wild and Scenic Rivers, Heritage or TNC natural areas, national wildlife refuges, old growth communities, etc.

***Secondary priority*** areas include bay forest, high elevation seep, pond cypress pond, upland depression swamp forest, etc.

***Tertiary priority*** areas include cypress-tupelo swamps, bottomland hardwood, pine flatwoods, etc.

**Addendum to Charleston Compensatory** Mitigation Method dated September 19, 2002
This supplement should be used within the Little Rock District Corps of Engineers geographic boundary as a regional modification. Page 23 of 73:

**Lost Type**

**Type A**

-Swamps (Bald Cypress or Tupelo)
-Fens and Seeps
-Rare and Unique Regional Wetlands (such as fens, seeps, and sand depressions)
-Bottomland hardwood wetlands

**Type B**

-Swamps (other than Bald Cypress or Tupelo)
-Wet meadows
-Natural pond borders
-Herbaceous and forested depressions

**Type C**

-Man-made lakes and ponds
-Vegetated lake littoral
-Impoundments
-Shallow cove areas

Page 25 of 73:

**Priority Category**

**Primary Priority**

Designated Primary Priority Areas include:
-Wild and Scenic Rivers
-Outstanding Resource Waters
-Essential Fish Habitat
-Waters on the 303(d) list
-Trout waters
-State Heritage Trust Preserves
-National Wildlife Refuges
-Waters officially designated by State or Federal agencies as high priority areas
-Old growth climax communities that have unique habitat structural complexity likely to support rare communities of plants or animals. And the following categories of rare aquatic systems:
-Upland Bog
-Fens
-Sandpond
-Wet prairie
-Piedmont Seepage Forest

-Limestone Sink
-Bald Cypress and Tupelo Gum Swamps

**Secondary Priority**

-Carolina Bay
-High Elevation Seep
-Bay Forest
-Salt Shrub Thicket
-Bottomland hardwood
-Swale Pocosin
-Pond Cypress Pond
-Seepage Pocosin
-Upland Depression Swamp Forest

**Tertiary Priority**

-Non-alluvial wetland forest
-Pine flatwoods
-Non-alluvial herbaceous/scrub shrub wetlands
-Waters of the US excluding streams (i.e. ponds)

ADVERSE IMPACT FACTORS FOR WETLANDS AND OTHER WATERS OF THE U.S. EXCLUDING STREAMS

| FACTORS | OPTIONS | | | | | |
|---|---|---|---|---|---|---|
| **Lost Type** | Type C<br>0.2 | | Type B<br>2.0 | | Type A<br>3.0 | |
| **Priority Category** | Tertiary<br>0.5 | | Secondary<br>1.5 | | Primary<br>2.0 | |
| **Existing Condition** | Very Impaired<br>0.1 | Impaired<br>1.0 | | Slightly Impaired<br>2.0 | | Fully Functional<br>2.5 |
| **Duration** | Seasonal<br>0.1 | 0 to 1<br>0.2 | 1 to 3<br>0.5 | 3 to 5<br>1.0 | 5 to 10<br>1.5 | Over 10<br>2.0 |
| **Dominant Impact** | Shade<br>0.2 | Clear<br>1.0 | Dredge<br>1.5 | Drain<br>2.0 | Impound<br>2.5 | Fill<br>3.0 |
| **Cumulative Impact** | $0.05 \times \sum AA_i$ | | | | | |
| **Location** | On Site<br>0.0 | | | Off Site<br>3.0 | | |

## REQUIRED MITIGATION CREDITS WORKSHEET

| Factor | Bottomland Hardwood Wetlands | Bottomland Hardwood Wetlands | Bottomland Hardwood Wetlands |
|---|---|---|---|
| Lost Type | **Type A<br>3.0** | **Type A<br>3.0** | **Type A<br>3.0** |
| Priority Category | **Secondary<br>1.5** | **Secondary<br>1.5** | **Secondary<br>1.5** |
| Existing Condition | **Slightly Impaired<br>2.0** | **Slightly Impaired<br>2.0** | **Slightly Impaired<br>2.0** |
| Duration | **Over 10<br>2.0** | **Over 10<br>2.0** | **Over 10<br>2.0** |
| Dominant Impact | **Temporary Fill<br>3.0** | **Permanently Clear<br>1.0** | **Temporarily Clear<br>1.0** |
| Cumulative Impact | **0.1** | **0.1** | **0.1** |
| Location | **Off Site<br>3.0** | **Off Site<br>3.0** | **Off Site<br>3.0** |
| Sum of r Factors | $R_1 = 14.6$ | $R_2 = 12.6$ | $R_2 = 12.6$ |
| Impacted Area | $AA_1 = 0.22$ | $AA_2 = 0.63$ | $AA_2 = 0.71$ |
| R x AA= | 3.21 | 7.94 | 8.95 |

**Total Required Credits = $\sum$ (R x AA) = 20.09**

PCN CheckList

Job Number:___070379_____

Job Name:____Hurricane Creek Str. & Apprs._____

Natural Resource Employee:__Kayti Ewing_____

Does your project occur within (or within a mile of) a special resource waterbody (e.g.ERW, ESW, Natural and Scenic or Wild and Scenic)? No

If yes, PCN required and Individual Water Quality Certification.

Name of waterbody:_____

Is this a maintenance project involving removal of accumulated sediments near a bridge or culvert? No

A NWP No 14 with more than 0.1 acre impacts OR a discharge into special aquatic site including wetlands, OR in one of the following counties: Cleburne, Van Buren, Conway, Faulkner, OR White? No

Is the project a NWP23? Yes

Is the project in wetlands in one of the following counties: Ashley, Clay, Jackson, Lawrence, Woodruff or Craighead or any of the following waters of the US: Fens, Bogs, Seeps, Dune Depressions or Cache River and adjacent wetlands downstream of Hwy 18? No

Is the project in one of the following counties: Benton or Stone? No

Is the project impacting one of the following creeks or rivers: Saline River (or its major forks Alum, North, Middle, or South), Antoine River, Arkansas River, Big Brushy Creek (Montgomery Co.), Big Creek (Little Red River), Black River, Brush Creek (Perry and Yell co), Buffalo Creek (Polk Co.), Buffalo River, Caddo River, Clear Fork (Scott Co.), Cassatot River, Current River, Eleven Point River, Fiddlers Creek (Montgomery and Yell Co.), Fourche LaFave River (including Dry Fork and South Fork), Frog Bayou, Illinois River (including Muddy Fork), Irons Fork (Polk Co.), Ouachita River (including Iron, North, and South Forks), Kings River, L' Anguille River, Lewis Creek (Polk Co.), Left Hand and Right Hand Chutes Little River and Ditches, Little Brushy Creek (Montgomery Co.), Little Missouri River (Below Greeson), Little River (above and below Millwood), Little Red River (including Middle, South, Archey, Devil's Forks, Beech and Turkey Creeks), Mississippi River, Mountain Fork River (Polk Co.), Muddy Creek, Myatt Creek, Rainy Creek (Montgomery Co.), Red River, Robinson Creek (Polk and Sevier Co.), Rolling Fork (Below DeQueen Reservoir), Saline River (including the Alum, Middle, North and South Forks), Saline River (below Dierks Reservoir), Spring River (including South Fork), St. Francis River and Floodway (including Clark Corner Cutoff, Cross County Ditch, the following ditches 10, 123, 60, 61, and 9, Iron Mines Creek, Little Bay Ditch, Little Slough Ditch, St. Francis Bay, and Straight Slough), Strawberry River, Tyronza River, War Eagle Creek, and the White River? No

If you selected yes to any of the questions above a PCN is required

IF PCN is required, is the project in an impaired waterbody for turbidity/siltation, a waterbody with a TMDL for turbidity/siltation or within a mile of one the above? If yes individual Water Quality Certification Required. __No_____

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arkansas Ecological Services Field Office
110 South Amity Suite 300
Conway, AR 72032-8975
Phone: (501) 513-4470 Fax: (501) 513-4480
http://www.fws.gov/arkansas-es

In Reply Refer To: February 23, 2018
Consultation Code: 04ER1000-2018-SLI-0590
Event Code: 04ER1000-2018-E-00850
Project Name: 070379 Richland Creek Str. & Apprs. (S)

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies endangered, threatened, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). **This letter only provides an official species list and technical assistance; if you determine that listed species and/or designated critical habitat may be affected in any way by the proposed project, even if the effect is wholly beneficial, consultation with the Service will be necessary.**

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found on our website.

**Please visit our website at http://www.fws.gov/arkansas-es/IPaC/home.html for species-specific guidance to avoid and minimize adverse effects to federally endangered, threatened, proposed, and candidate species.** Our web site also contains additional information on species life history and habitat requirements that may be useful in project planning.

**If your project involves in-stream construction activities, oil and natural gas infrastructure, road construction, transmission lines, or communication towers, please review our project specific guidance at http://www.fws.gov/arkansas-es/IPaC/ProjSpec.html.**

The karst region of Arkansas is a unique region that covers the **northern third of Arkansas** and we have specific guidance to conserve sensitive cave-obligate and bat species. **Please visit http://www.fws.gov/arkansas-es/IPaC/Karst.html to determine if your project occurs in the karst region and to view karst specific-guidance.** Proper implementation and maintenance of best management practices specified in these guidance documents is necessary to avoid adverse effects to federally protected species and often avoids the more lengthy formal consultation process.

**If your species list includes any mussels, Northern Long-eared Bat, Indiana Bat, Yellowcheek Darter, Red-cockaded Woodpecker, or American Burying Beetle, your project may require a presence/absence and/or habitat survey prior to commencing project activities.** Please check the appropriate species-specific guidance on our website to determine if your project requires a survey. We strongly recommend that you contact the appropriate staff species lead biologist (see office directory or species page) prior to conducting presence/absence surveys to ensure the appropriate level of effort and methodology.

**Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further.** Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make “no effect” determinations. If you determine that your proposed action will have “no effect” on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take “after-the-fact.” For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, **the accuracy of this species list should be verified after 90 days.** This verification can be

completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Arkansas Ecological Services Field Office**
110 South Amity Suite 300
Conway, AR 72032-8975
(501) 513-4470

# Project Summary

Consultation Code: 04ER1000-2018-SLI-0590

Event Code: 04ER1000-2018-E-00850

Project Name: 070379 Richland Creek Str. & Apprs. (S)

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: A bridge replacement in Calhoun County.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/33.45080155938223N92.42209493832863W


Counties: Calhoun, AR

# Endangered Species Act Species

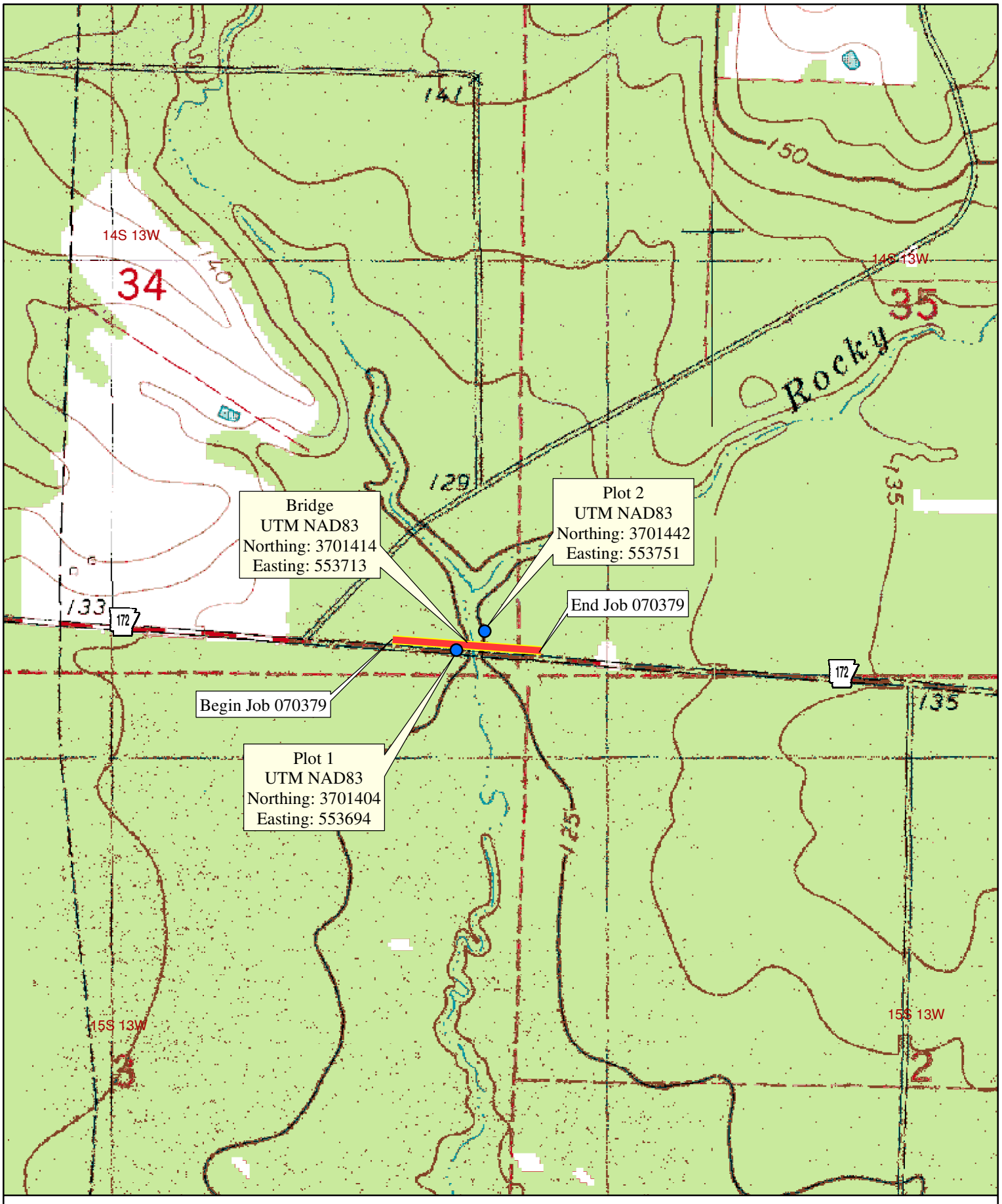
There is a total of 2 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

## Clams

| NAME | STATUS |
|---|---|
| Pink Mucket (pearlymussel) *Lampsilis abrupta*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/7829 | Endangered |
| Rabbitsfoot *Quadrula cylindrica cylindrica*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/5165 | Threatened |

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.


Bridge
UTM NAD83
Northing: 3701414
Easting: 553713
Plot 2
UTM NAD83
Northing: 3701442
Easting: 553751
End Job 070379
Begin Job 070379
Plot 1
UTM NAD83
Northing: 3701404
Easting: 553694
14S 13W
34
35
Rocky
15S 13W
3
2
172
N
0
500
1,000
Feet
ARDOT - Environmental GIS - Dudley
May 7, 2018
Job 070379
Hurricane Creek Str. & Apprs.
(Hwy. 172)
Calhoun County
Project Location