



US Army Corps
of Engineers®
Little Rock District

JOINT PUBLIC NOTICE

CORPS OF ENGINEERS – STATE OF ARKANSAS

Application Number: MVK 2017-00338

Date: May 11, 2017

Comments Due: June 5, 2017

TO WHOM IT MAY CONCERN: **Comments are invited on the work described below. Please see the Public Involvement section for details on submitting comments.**

Point of Contact. If additional information is desired, please contact the project manager, Mr. Johnny McLean, telephone number: (501) 324-5295, mailing address: Little Rock District Corps of Engineers, Regulatory Division, PO Box 867, Little Rock, Arkansas 72203-0867, email address: Johnny.L.McLean@usace.army.mil.

Project Information. Pursuant to Section 404 of the Clean Water Act (33 U.S. Code 1344), notice is hereby given that

**Arkansas Highway and Transportation Department (AHTD)
PO Box 2261
Little Rock, Arkansas 72203-2261**

has requested authorization for the placement of dredged and fill material in waters of the United States associated with widening 4.3 miles of U.S. Highway 167 and replacing three bridges with three box culverts. The proposed project begins on the north side of Hampton and extends northward to State Highway 274. The project is located in sections 7, 8, 17, 18, 19, 20, 29, 30, 31 and 32, T. 13. S., R. 13 W., Calhoun County, Arkansas.

The overall purpose of the project is to construct a wider roadway and replace three structurally deficient bridges. The basic purpose of the project is to enhance safety. The project is not water dependent.

The entire project would be built on existing alignment and would add two travel lanes and a turn lane. The upgraded roadway would consist of four 12-foot-wide travel lanes with 8-foot-wide shoulders and an 11-foot-wide center turn lane. The average right-of-way width for the project is 130 feet and the total length for the project is 4.3 miles. The Federal Highway Administration approved this job as a categorical exclusion (CE) on May 31, 2016. A copy of the CE is available for viewing at the AHTD Central Office in Little Rock.

The project would cross seventeen stream segments impacting approximately 1,433 linear feet and fifteen wetland areas impacting approximately 3.9 acres. The only named stream on the project is Champagnolle Creek. There are three perennial stream segments, five unnamed intermittent streams and nine unnamed ephemeral streams. The perennial segments consist of Champagnolle Creek and two side or relief channels that are part of Champagnolle Creek. The primary impact to the unnamed streams would be extending box or pipe culverts. Approximately 896 linear feet of stream impacts would consist of crossing the streams perpendicularly and extending box or pipe culverts where total impacts at each crossing would

be less than 300 linear feet. Approximately 537 linear feet of stream impacts would consist of filling and realigning or relocating streams for embankment widening and culvert construction. Temporary work roads for culvert construction would be built at Champagnolle Creek and the two relief channels. The substrate for all of the streams is generally a mix of sand and silt and the overall water quality for each stream is generally good. Champagnolle Creek flows into the Ouachita River approximately twenty miles south of the project near Calion. The impacted wetlands consist of approximately 3.0 acres of bottomland hardwoods and 0.9 acres of herbaceous emergent wetlands. The impacted streams and wetlands exhibit moderate functions and values. Dominant vegetation in the wetlands consists of willow oak (*Quercus phellos*), water oak (*Quercus nigra*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), soft rush (*Juncus effusus*), lizard's tail (*Saururus cernuus*), and several species of sedges (*Carex spp.*). A total of approximately 29,350 cubic yards of permanent earthen material would be discharged into the streams and wetlands.

The project is located in the Gulf Coastal Plain Ecoregion. The project lies within the Lower Ouachita (hydrologic unit code 08040201) watershed. Lands adjacent to the project are primarily forested. These forested areas are primarily silvicultural with a few scattered residences. The majority of the project would be constructed within the existing highway right-of-way which has been previously impacted by roadway and utility construction.

Federally listed threatened or endangered species that are known to occur in Calhoun County include the Redcockaded Woodpecker (*Picoides borealis*) and the following mussels: Ouachita Rock-Pocketbook (*Arcidens wheeleri*), Pink Mucket (*Lampsilis abrupta*), Winged Mapleleaf (*Quadrula fragosa*), Rabbitsfoot (*Quadrula cylindrica*) and Spectaclecase (*Cumberlandia monodonta*). The AHTD consulted with the U.S. Fish and Wildlife Service (USF&WS) and determined that the project is not likely to adversely affect any threatened or endangered species since none are known to occur in the project area. Approximately 5.8 acres of prime farmland would be converted to highway right-of-way for highway construction. The State Historic Preservation Officer (SHPO) determined that the project would not affect any historic properties. There are no environmental justice issues associated with the project. The project would not relocate any residences or businesses. Calhoun County participates in the National Flood Insurance Program (NFIP). Some segments of the project lie within Zone A which is the designation for a Special Flood Hazard Area. The AHTD has determined that the project will not support incompatible use and development of the floodplain and adjacent properties should not be impacted nor have a greater flood risk than existed before construction of the project, and none of the encroachments will constitute a significant floodplain encroachment or a significant risk to property or life.

The AHTD attempted to cross the streams perpendicular to their paths and the alignment was shifted to the east or west at various locations in order to avoid or minimize impacts, however, complete avoidance was not possible. Also, the roadway was reduced from a four-lane divided highway to a five-lane highway (four lanes with a center turn lane) and this decreased the footprint of the project by approximately 30 percent. Temporary and permanent erosion control measures will minimize adverse impacts to streams and adjacent wetlands. The AHTD proposes to mitigate for the unavoidable impacts to 537 linear feet of stream and 3.9 acres of wetlands at an approved Mitigation Bank. Stream credit requirements were calculated utilizing the Little

Rock District Stream Method, and wetland credit requirements were calculated utilizing the Charleston Method. Copies of the stream credit and wetland credit worksheets are attached. The location and general plan for the proposed work are shown on the enclosed sheets 1 through 20 of 20.

Water Quality Certification. By copy of this public notice, the applicant is requesting water quality certification from the Arkansas Department of Environmental Quality (ADEQ) in accordance with Section 401(a)(1) of the Clean Water Act. Upon completion of the comment period and a public hearing, if held, a determination relative to water quality certification will be made. Evidence of this water quality certification or waiver of the right to certify must be submitted prior to the issuance of a Corps of Engineers permit.

Cultural Resources. The AHTD staff archeologists have reviewed topographic maps, the National Register of Historic Places, and other data on reported sites in the area. The FHWA is the lead agency for coordination with all associated Native American Nations and tribal governments. The District Engineer invites responses to this public notice from Federal, State, and local agencies; historical and archeological societies; Native American Nations and tribal governments and other parties likely to have knowledge of or concerns with historic properties in the area.

Endangered Species. Our preliminary determination is that the proposed activity will not affect listed Endangered Species or their critical habitat. A copy of this notice is being furnished to the U.S. Fish and Wildlife Service and appropriate state agencies and constitutes a request to those agencies for information on whether any other listed or proposed-to-be-listed endangered or threatened species may be present in the area which would be affected by the proposed activity.

Floodplain. We are providing copies of this notice to appropriate floodplain officials in accordance with 44 CFR Part 60 (Floodplain Management Regulations Criteria for Land Management and Use) and Executive Order 11988 on Floodplain Management.

Section 404(b)(1) Guidelines. The evaluation of activities to be authorized under this permit which involves the discharge of dredged or fill material will include application of guidelines promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act. These guidelines are contained in 40 Code of Federal Regulations (CFR) 230.

Public Involvement. Any interested party is invited to submit to the above-listed POC written comments or objections relative to the proposed work on or before **June 5, 2017**. Substantive comments, both favorable and unfavorable, will be accepted and made a part of the record and will receive full consideration in determining whether this work would be in the public interest. The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics,

aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request in writing within the comment period specified in this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. The District Engineer will determine if the issues raised are substantial and whether a hearing is needed for making a decision.

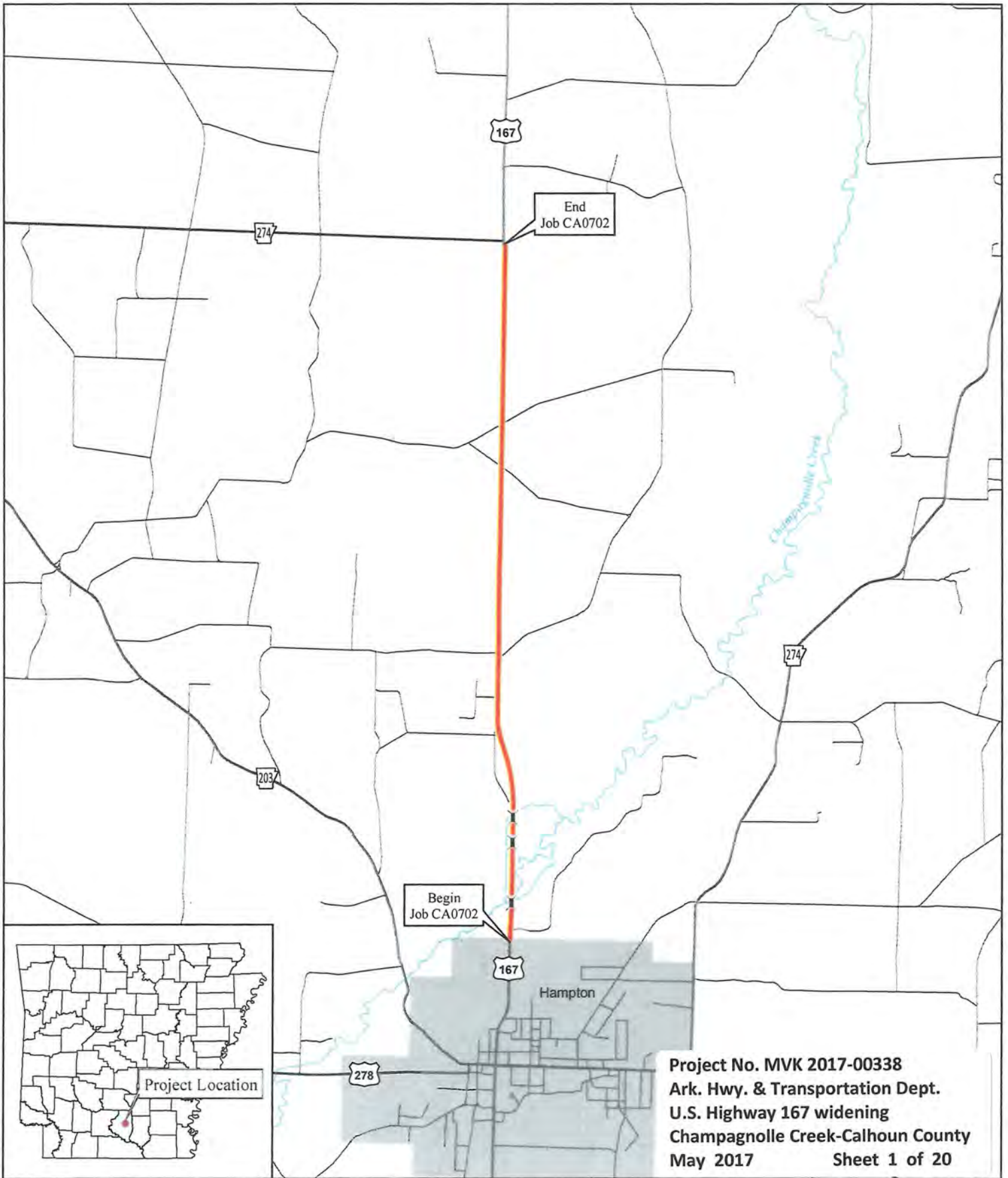
NOTE: The mailing list for this Public Notice is arranged by state and county(s) where the project is located, and also includes any addressees who have asked to receive copies of all public notices. Please discard notices that are not of interest to you. If you have no need for any of these notices, please advise us so that your name can be removed from the mailing list.

Enclosures

Approximate Coordinates of Project Center


Latitude: **33.55278** Longitude: **-92.46759**

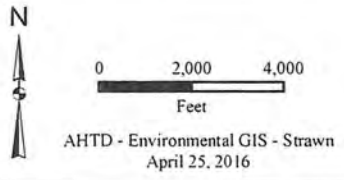
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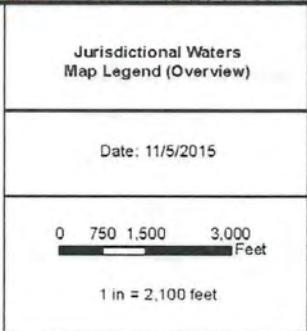
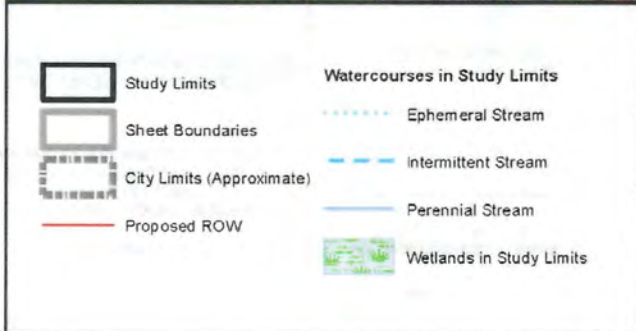
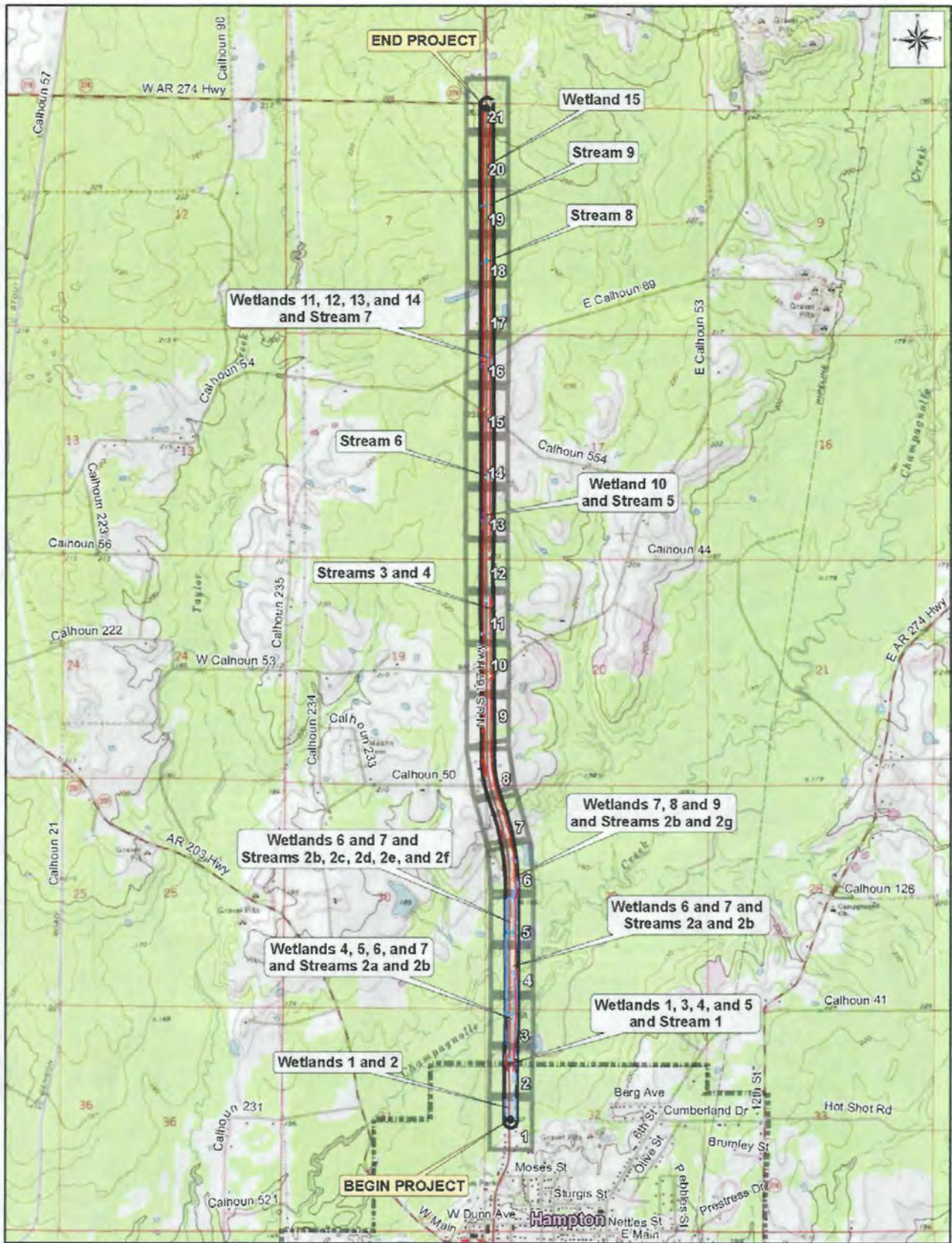


Project No. MVK 2017-00338
Ark. Hwy. & Transportation Dept.
U.S. Highway 167 widening
Champagneville Creek-Calhoun County
May 2017 **Sheet 1 of 20**

Job CA0702
Hampton - Hwy. 274
(Widening) (Hwy. 167)
Calhoun County

 **Project Location**



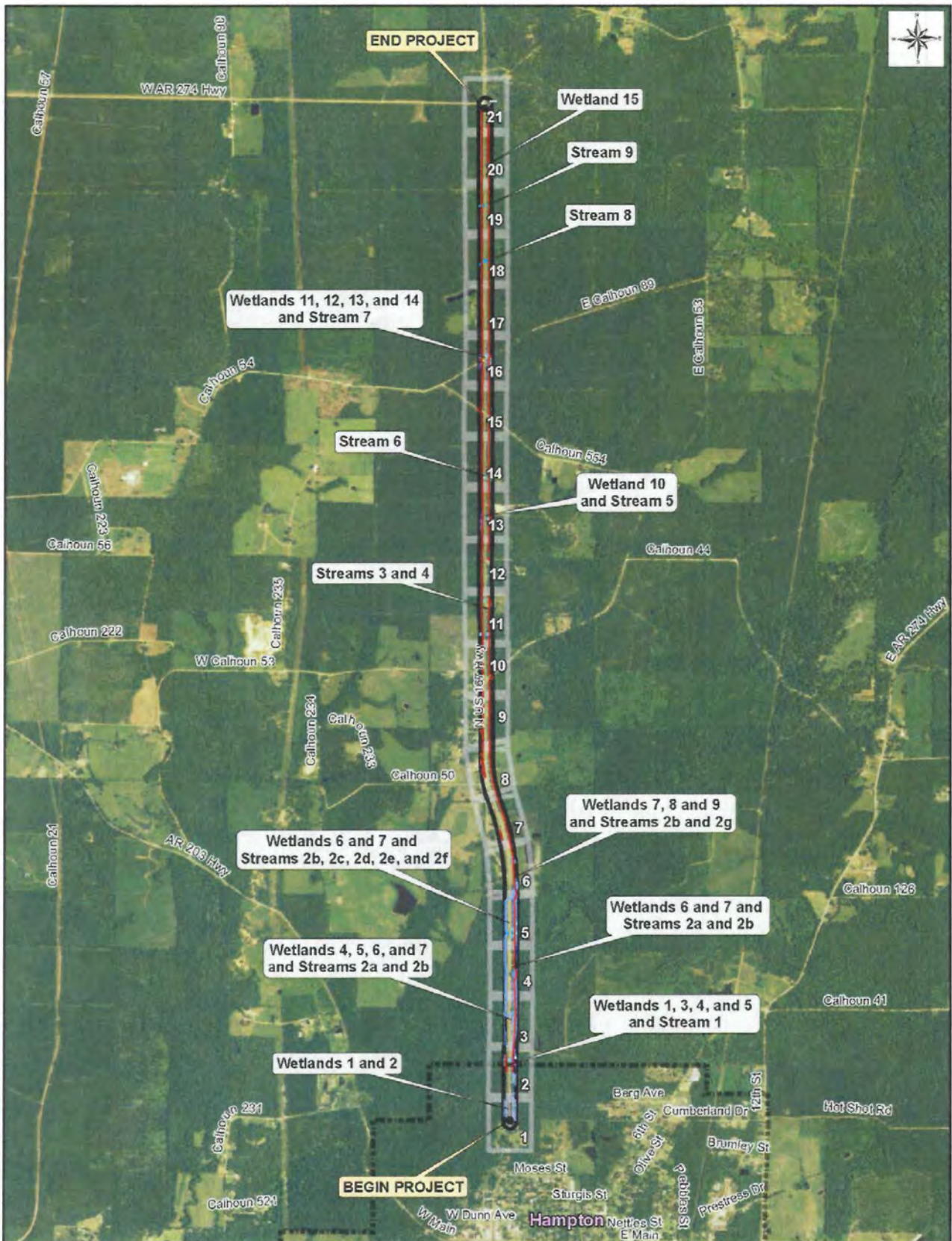


ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

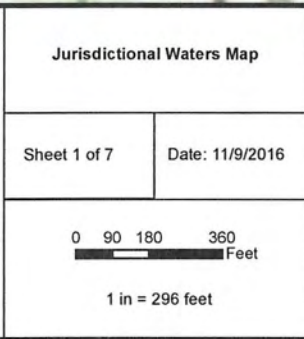
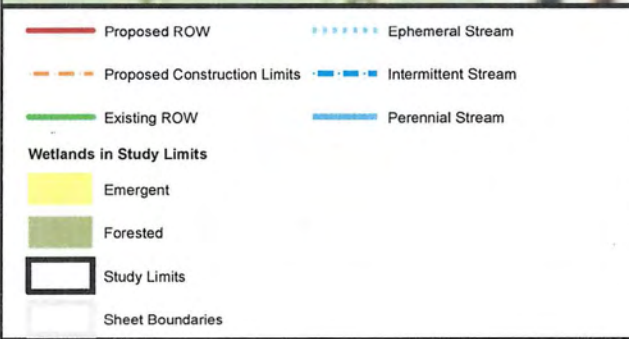
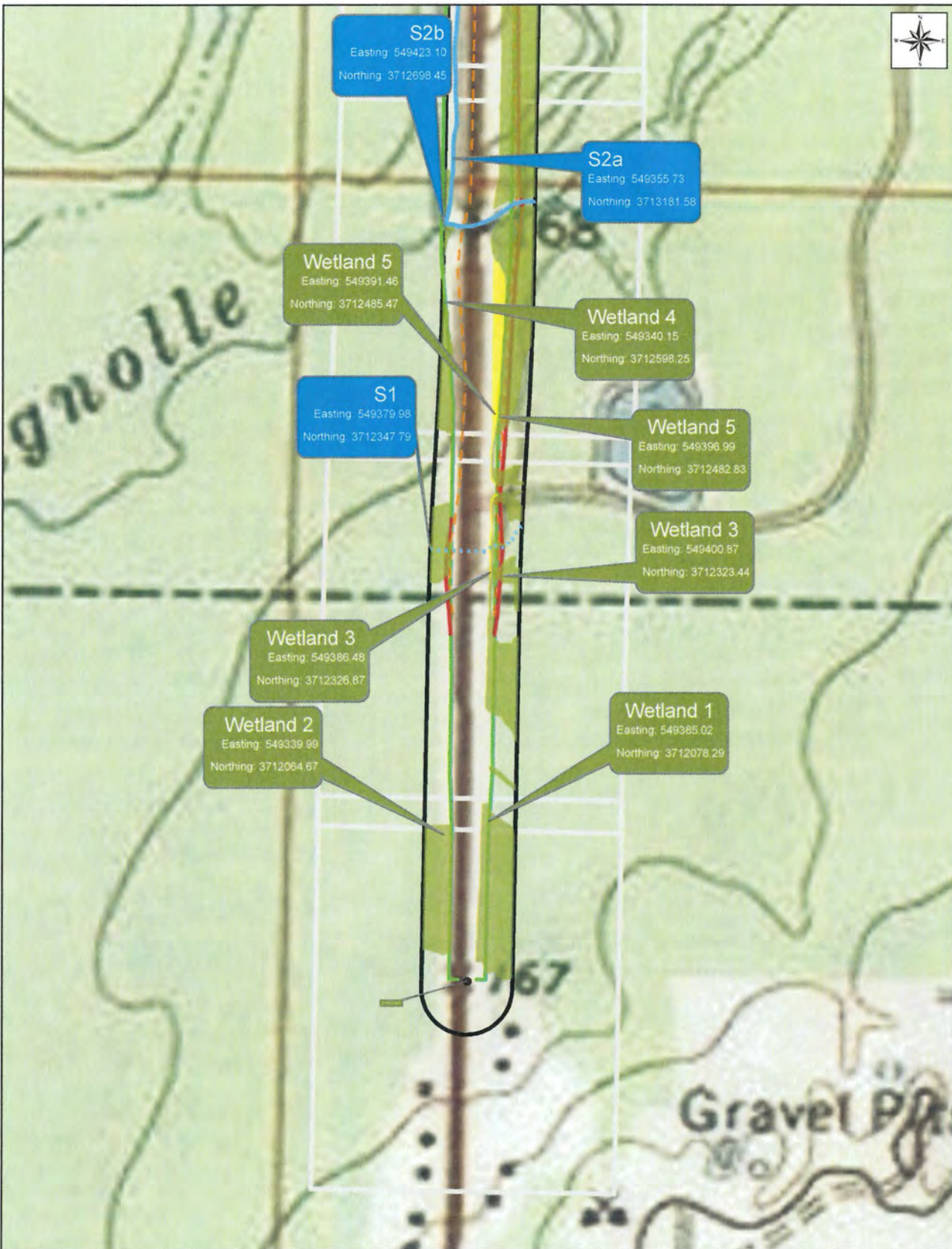
CONNECTING ARKANSAS PROGRAM
 HWY. 274 - HAMPTON (WIDENING) (S)
 HWY. 167 in
 CALHOUN COUNTY, ARKANSAS

JOB CA0702

Sheet 2 of 20



<p>Study Limits</p> <p>Sheet Boundaries</p> <p>City Limits (Approximate)</p> <p>Proposed ROW</p>	<p>Watercourses in Study Limits</p> <p>Ephemeral Stream</p> <p>Intermittent Stream</p> <p>Perennial Stream</p> <p>Wetlands in Study Limits</p>	<p>Jurisdictional Waters Map Legend (Overview)</p> <p>Date: 11/5/2015</p> <p>0 750 1,500 3,000 Feet</p> <p>1 in = 2,100 feet</p>	<p>ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT</p> <p>CONNECTING ARKANSAS PROGRAM HWY. 274 - HAMPTON (WIDENING) (S) HWY. 167 in CALHOUN COUNTY, ARKANSAS</p> <p>JOB CA0702</p> <p>Sheet 3 of 20</p>
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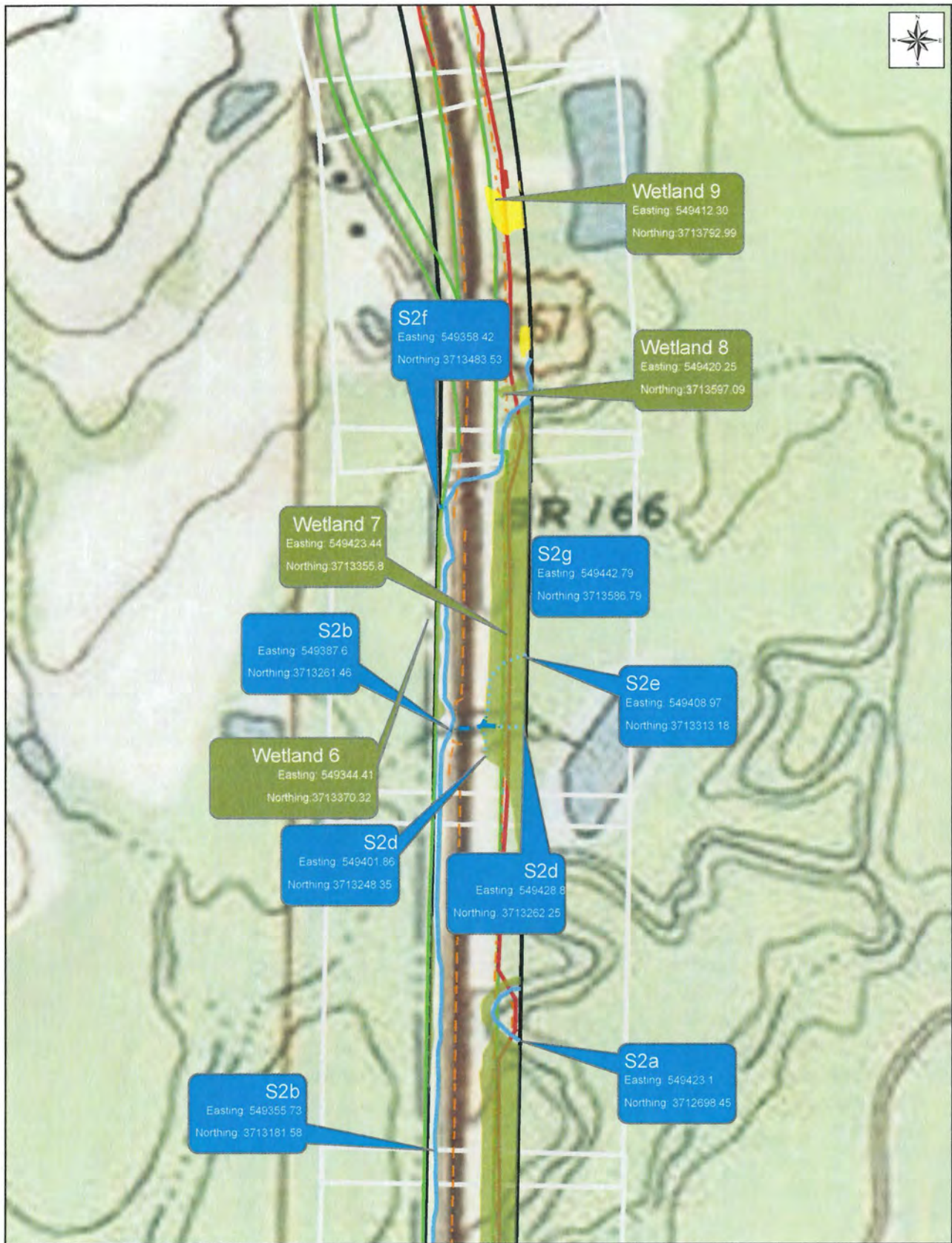


**ARKANSAS STATE HIGHWAY AND
TRANSPORTATION DEPARTMENT**

CONNECTING ARKANSAS PROGRAM
HWY. 274 - HAMPTON (WIDENING) (S)
HWY. 167 in
CALHOUN COUNTY, ARKANSAS

JOB CA0702

Sheet 4 of 20



	Proposed ROW		Ephemeral Stream
	Proposed Construction Limits		Intermittent Stream
	Existing ROW		Perennial Stream
Wetlands in Study Limits			
	Emergent		
	Forested		
	Study Limits		
	Sheet Boundaries		

Jurisdictional Waters Map

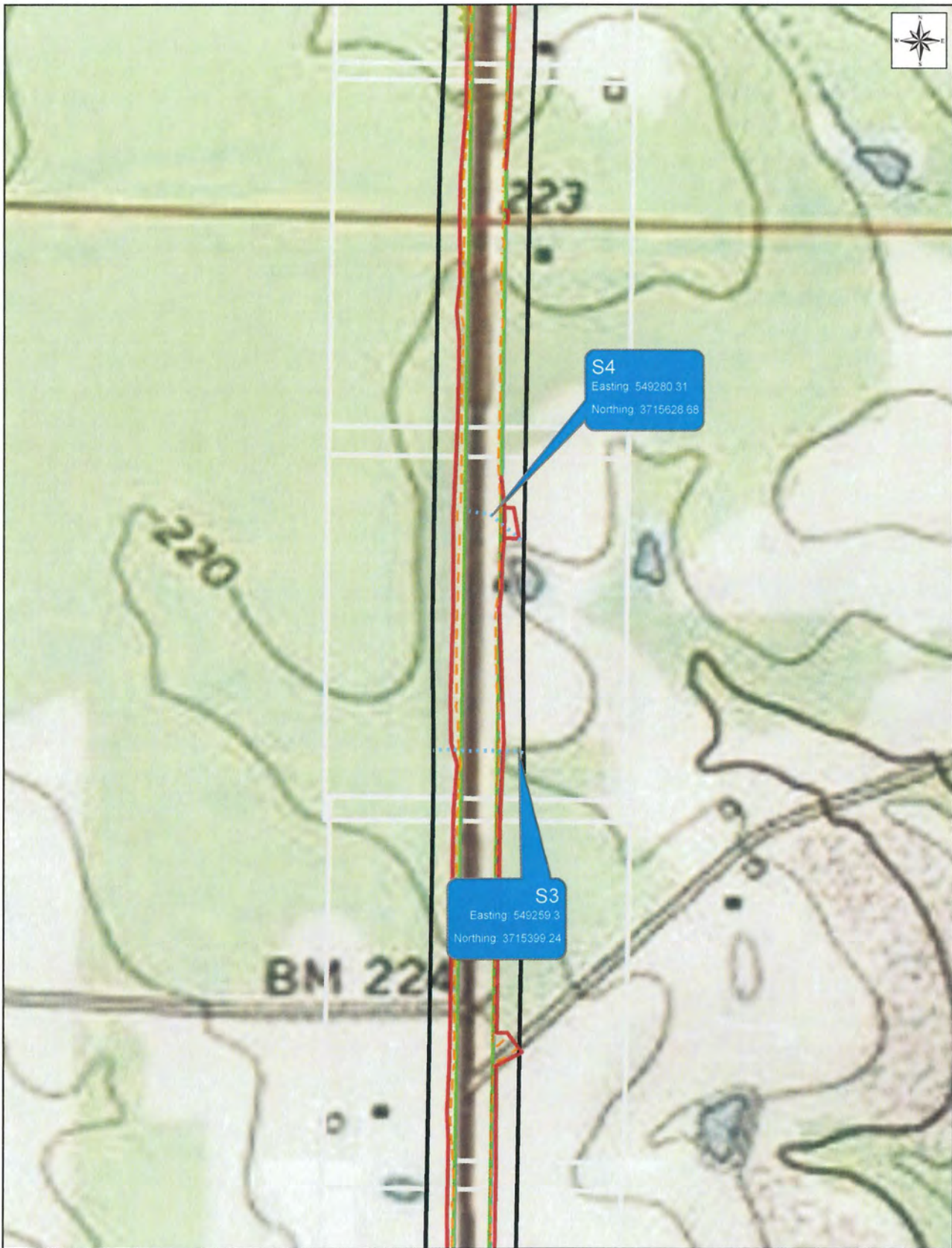
Sheet 2 of 7	Date: 11/9/2016
<p align="center">1 in = 296 feet</p>	

**ARKANSAS STATE HIGHWAY AND
TRANSPORTATION DEPARTMENT**

CONNECTING ARKANSAS PROGRAM
HWY. 274 - HAMPTON (WIDENING) (S)
HWY. 167 in
CALHOUN COUNTY, ARKANSAS

JOB CA0702

Sheet 5 of 20



- Proposed ROW
- - - Proposed Construction Limits
- Existing ROW
- Wetlands in Study Limits
 - Emergent
 - Forested
- Study Limits
- Sheet Boundaries
- ⋯ Ephemeral Stream
- · - · - Intermittent Stream
- Perennial Stream

Jurisdictional Waters Map

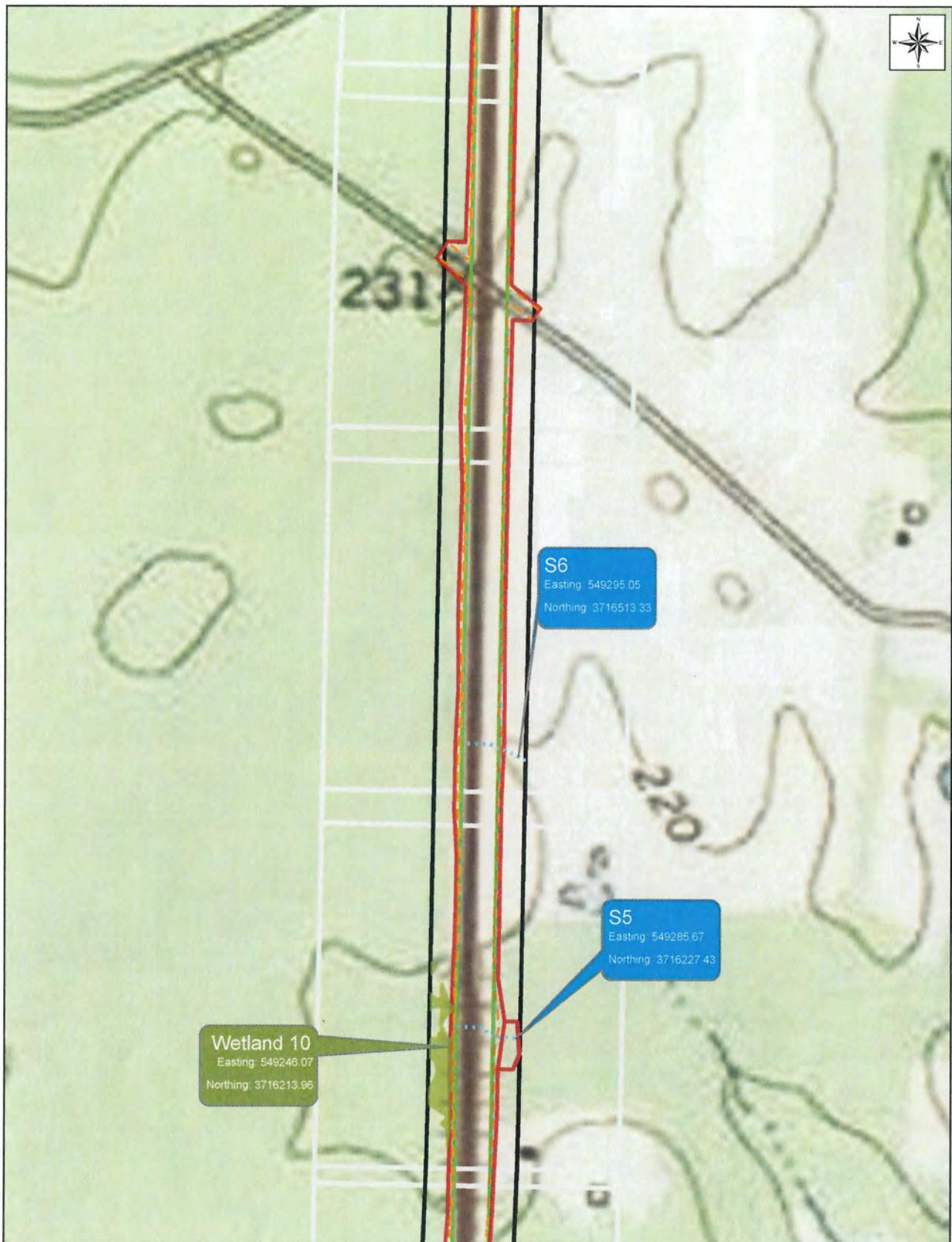
Sheet 4 of 7	Date: 11/9/2016
1 in = 297 feet	

**ARKANSAS STATE HIGHWAY AND
TRANSPORTATION DEPARTMENT**

CONNECTING ARKANSAS PROGRAM
HWY. 274 - HAMPTON (WIDENING) (S)
HWY. 167 in
CALHOUN COUNTY, ARKANSAS

JOB CA0702

Sheet 6 of 20



S6
 Easting: 549295.05
 Northing: 3716513.33

S5
 Easting: 549285.67
 Northing: 3716227.43

Wetland 10
 Easting: 549246.07
 Northing: 3716213.96

Proposed ROW	Ephemeral Stream
Proposed Construction Limits	Intermittent Stream
Existing ROW	Perennial Stream
Wetlands in Study Limits	
Emergent	
Forested	
Study Limits	
Sheet Boundaries	

Jurisdictional Waters Map

Sheet 5 of 7	Date: 11/9/2016
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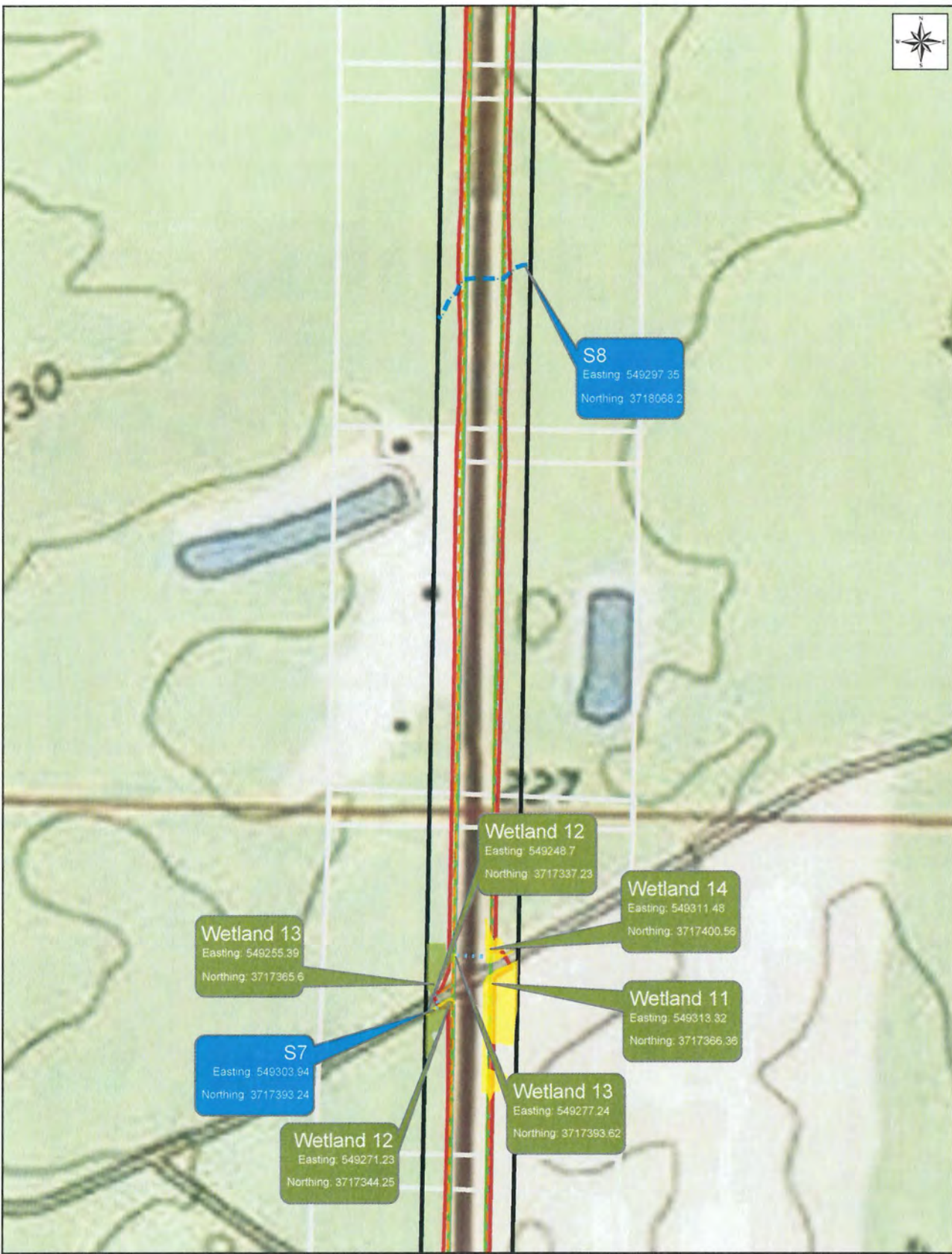
1 in = 294 feet

**ARKANSAS STATE HIGHWAY AND
 TRANSPORTATION DEPARTMENT**

CONNECTING ARKANSAS PROGRAM
 HWY. 274 - HAMPTON (WIDENING) (S)
 HWY. 167 in
 CALHOUN COUNTY, ARKANSAS

JOB CA0702

Sheet 7 of 20



Proposed ROW	Ephemeral Stream
Proposed Construction Limits	Intermittent Stream
Existing ROW	Perennial Stream
Wetlands in Study Limits	
Emergent	
Forested	
Study Limits	
Sheet Boundaries	

Jurisdictional Waters Map

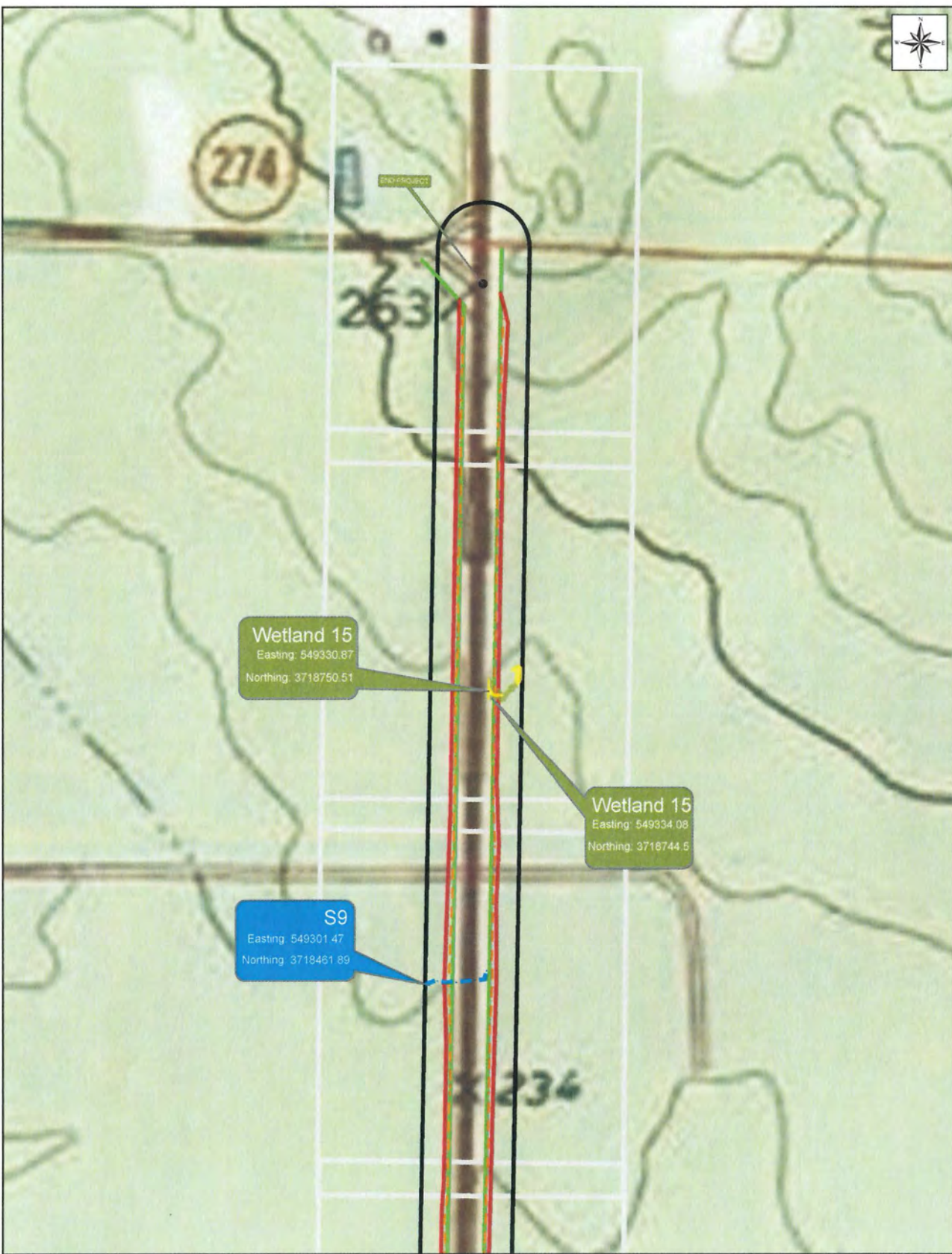
Sheet 6 of 7	Date: 11/9/2016
1 in = 295 feet	

**ARKANSAS STATE HIGHWAY AND
TRANSPORTATION DEPARTMENT**

CONNECTING ARKANSAS PROGRAM
HWY. 274 - HAMPTON (WIDENING) (S)
HWY. 167 in
CALHOUN COUNTY, ARKANSAS

JOB CA0702

Sheet 8 of 20



Wetland 15
 Easting: 549330.87
 Northing: 3718750.51

Wetland 15
 Easting: 549334.08
 Northing: 3718744.5

S9
 Easting: 549301.47
 Northing: 3718461.89

Proposed ROW	Ephemeral Stream
Proposed Construction Limits	Intermittent Stream
Existing ROW	Perennial Stream
Wetlands in Study Limits	
Emergent	
Forested	
Study Limits	
Sheet Boundaries	

Jurisdictional Waters Map

Sheet 7 of 7	Date: 11/9/2016
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0 90 180 360 Feet

1 in = 294 feet

**ARKANSAS STATE HIGHWAY AND
TRANSPORTATION DEPARTMENT**

CONNECTING ARKANSAS PROGRAM
 HWY. 274 - HAMPTON (WIDENING) (S)
 HWY. 167 in
 CALHOUN COUNTY, ARKANSAS

JOB CA0702

Sheet 9 of 20

Impact Summary Tables

Note: Impacts to Waters of the U.S. must be under ½ acre to use Nationwide Permit 14 (the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States). These summary tables will be attached to the Individual Permit Application to the Little Rock District, U.S. Army Corps of Engineers.

Table 1. Perennial Stream Summary							
Stream Name/ID	Stream Type	Station # (begin:end)	Feet in Study Limits	Feet Impacted in Proposed Construction Limits	Channelization required?	Type/Cubic Yards of Fill	Mitigation
Champagnolle Creek / S2a	Perennial stream that is the main stream channel for Champagnolle Creek.	209+14	588	258	Yes, some channelization to move a bend eastward on the east side of the proposed roadway within WTL-7.	5900 (223)	Roadway was reduced from a four-lane divided highway to a five-lane section (4 traffic lanes with a center turn lane). This reduced the overall footprint of the project by nearly 30 percent.
S2b	Perennial stream at the north end of the Champagnolle Creek floodplain that ran to the west and then south along Highway 167 to Champagnolle Creek.	209+24 238+62	3,328	279	Yes, some channelization east of the proposed roadway north of the North Bridge.	3200 (145)	
S2g	Perennial stream in Champagnolle Creek floodplain.	238+62 240+44	37	0	No	0	
TOTAL:			3,953	537		9100 (368)	

Note: Channelization is assumed for sections of streams that are in the proposed construction limits but are less than a 45 degree angle to the roadway.

Note: Estimates of impact are based upon GIS analysis including the proposed construction limits as supplied by Crafton Tull, and are subject to change.

Note: Feet in Study Limits includes total length within the Study Limits including the existing Highway 167 culverts, and Feet Impacted in Proposed Construction Limits length excludes all existing Highway 167 culverts.

(xx) - Riprap

Impact Summary Tables cont.

Table 2. Intermittent and Ephemeral Stream Summary							
Stream Name/ID	Stream Type	Station # (begin:end)	Feet in Study Limits	Feet Impacted in Proposed Construction Limits	Channelization required?	Type/Cubic Yards of Fill	Mitigation
S1	Ephemeral stream flowing west under Highway 167. This stream is within the Champagnolle Creek floodplain.	198+26	355	62	No	70 (15)	Roadway was reduced from a four-lane divided highway to a five-lane section (4 traffic lanes with a center turn lane). This reduced the overall footprint of the project by nearly 30 percent.
S2c	Ephemeral stream flowing into S2e east of Highway 167. This stream is within the Champagnolle Creek floodplain.	227+28 228+30	110	110	No	0	
S2d	The intermittent portion of an overflow channel for Champagnolle Creek.	228+35	57	57	No	1300	
S2d	Ephemeral stream flowing into S9d east of Highway 167. This stream is within the Champagnolle Creek floodplain.	228+31	87	20	No	0	
S2e	The intermittent portion of an overflow channel for Champagnolle Creek.	228+57	138	81	No	1850 (165)	
S2e	Ephemeral stream flowing southwest and then west under Highway 167. This stream is within the Champagnolle Creek floodplain.		273	200	Yes, some channelization east of the proposed roadway within WTL-9.	0	
S2f	Intermittent stream flowing to the west on the west side of Highway 167 in the north end of the Champagnolle Creek floodplain.	225+50	24	0	No	0	
S3	Ephemeral stream flowing east under Highway 167 within the Champagnolle Creek watershed.	299+24	301	57	No	10 (6)	
S4	Ephemeral stream flowing east under Highway 167 within the Champagnolle Creek watershed.	306+52 306+81	220	43	No	10 (4)	

Table 2. Intermittent and Ephemeral Stream Summary							
Stream Name/ID	Stream Type	Station # (begin:end)	Feet in Study Limits	Feet Impacted in Proposed Construction Limits	Channelization required?	Type/Cubic Yards of Fill	Mitigation
S5	Ephemeral stream beginning at WTL-10 and flowing east under Highway 167 within the Champagnolle Creek watershed.	326+41	218	73	No	20 (15)	
S6	Ephemeral stream flowing east under Highway 167 within the Champagnolle Creek watershed.	335+73	206	41	No	20	
S7	Ephemeral stream flowing west under Highway 167 from WTL-14 to WTL-13 and then under W. Calhoun 89 into WTL-12. The stream continues west along W. Calhoun 89 and is within the Taylor Creek watershed.	364+65	166	21	No	5 (6)	
S8	Intermittent stream flowing west under Highway 167 within the Taylor Creek watershed.	385+56	390	73	No	40	
S9	Intermittent stream flowing west under Highway 167 within the Taylor Creek watershed.	399+56	230	58	No	30	
TOTAL:			2,775	896		3355 (,211)	
<p>Note: Channelization is assumed for sections of streams that are in the proposed construction limits but are less than a 45 degree angle to the roadway.</p> <p>Note: Estimates of impact are based upon GIS analysis including the proposed construction limits as supplied by Crafton Tull and are subject to change.</p> <p>Note: Feet in Study Limits includes total length within the Study Limits including the existing Highway 167 culverts, and Feet Impacted in Proposed Construction Limits length excludes all existing Highway 167 culverts.</p> <p>Note: Intermittent and ephemeral stream lengths are included in this single table, because some of the stream segments transition from ephemeral to intermittent.</p> <p>(xx) - Riprap</p>							

Impact Summary Tables cont.

Table 3. Wetland Summary						
Wetland ID	Wetland Type and Cowardin Classification	Station # (begin:end)	Acreage in Study Limits	Acreage Impacted in Proposed Construction Limits	Type/Cubic Yards of Fill	Mitigation
Wetland 1 (WTL-1)	Bottomland hardwood wetland. PFO	190+42 191+24	1.43	0	0	Roadway was reduced from a four-lane divided highway to a five-lane section (4 traffic lanes with a center turn lane). This reduced the overall footprint of the project by nearly 30 percent.
Wetland 2 (WTL-2)	Bottomland hardwood wetland. PFO		0.92	0	0	
Wetland 3 (WTL-3)	Bottomland hardwood wetland with emergent herbaceous ditches along outside edge. PFO/PEM	196+00 200+17	1.07 - PFO 0.03 - PEM	0.11 - PFO 0.03 - PEM	600	
Wetland 4 (WTL-4)	Bottomland hardwood wetland. PFO	197+16 199+82	0.81	0	0 (15)	
Wetland 5 (WTL-5)	Bottomland hardwood wetland with emergent herbaceous ditches along outside edge. PFO/PEM	200+48 209+52	1.68 - PFO 0.40 - PEM	0.54 - PFO 0.40 - PEM	8400	
Wetland 6 (WTL-6)	Bottomland hardwood wetland. PFO	209+21 222+46	0.50	0	0	
Wetland 7 (WTL-7)	Bottomland hardwood wetland. PFO	209+52 238+29	5.92	2.29	19,000	
Wetland 8 (WTL-8)	Side channel bottomland hardwood wetland. PFO	229+22 229+52	0.07	0.02	130	
Wetland 9 (WTL-9)	Emergent herbaceous wetland. PEM	244+50 246+12	0.38	0.13	250	
Wetland 10 (WTL-10)	Pine flatland wetland. PFO	325+90 226+80	0.67	0.02	260	
Wetland 11 (WTL-11)	Emergent herbaceous wetland. PEM	359+69 364+41	0.81	0.22	400	
Wetland 12 (WTL-12)	Emergent herbaceous wetland with a forest edge component in the study limits. PEM/PFO	361+09 363+00	0.17 - PFO 0.02 - PEM	0 - PFO 0.01 - PEM	35	
Wetland 13 (WTL-13)	Forested wetland with an emergent herbaceous edge component. PFO/PEM	363+18 364+87	0.23 - PFO 0.01 - PEM	0 - PFO 0.01 - PEM	30	
Wetland 14 (WTL-14)	Emergent herbaceous wetland. PEM	364+23 365+72	0.13	0.06	130	

Wetland ID	Wetland Type and Cowardin Classification	Station # (begin:end)	Acreage in Study Limits	Acreage Impacted in Proposed Construction Limits	Type/Cubic Yards of Fill	Mitigation
Wetland 15 (WTL-15)	Hillslope seep primarily herbaceous wetland with a small forest edge component. PEM/PFO	408+71 409+47	0.06 – PFO 0.06 - PEM	0.02 - PFO 0.02 - PEM	115	
TOTAL:			15.37	3.88		
Note: Wetland acronyms include: PEM (Palustrine Emergent – 1.84 acres total) and PFO (Palustrine Forested – 13.53 acres total).						

Summary

A total of 29,350 yds³ of permanent earthen fill and 15 yds³ of rip-rap will be added to waters of the U.S. in 3 perennial streams, 5 intermittent streams, 9 ephemeral streams, and 15 wetlands.

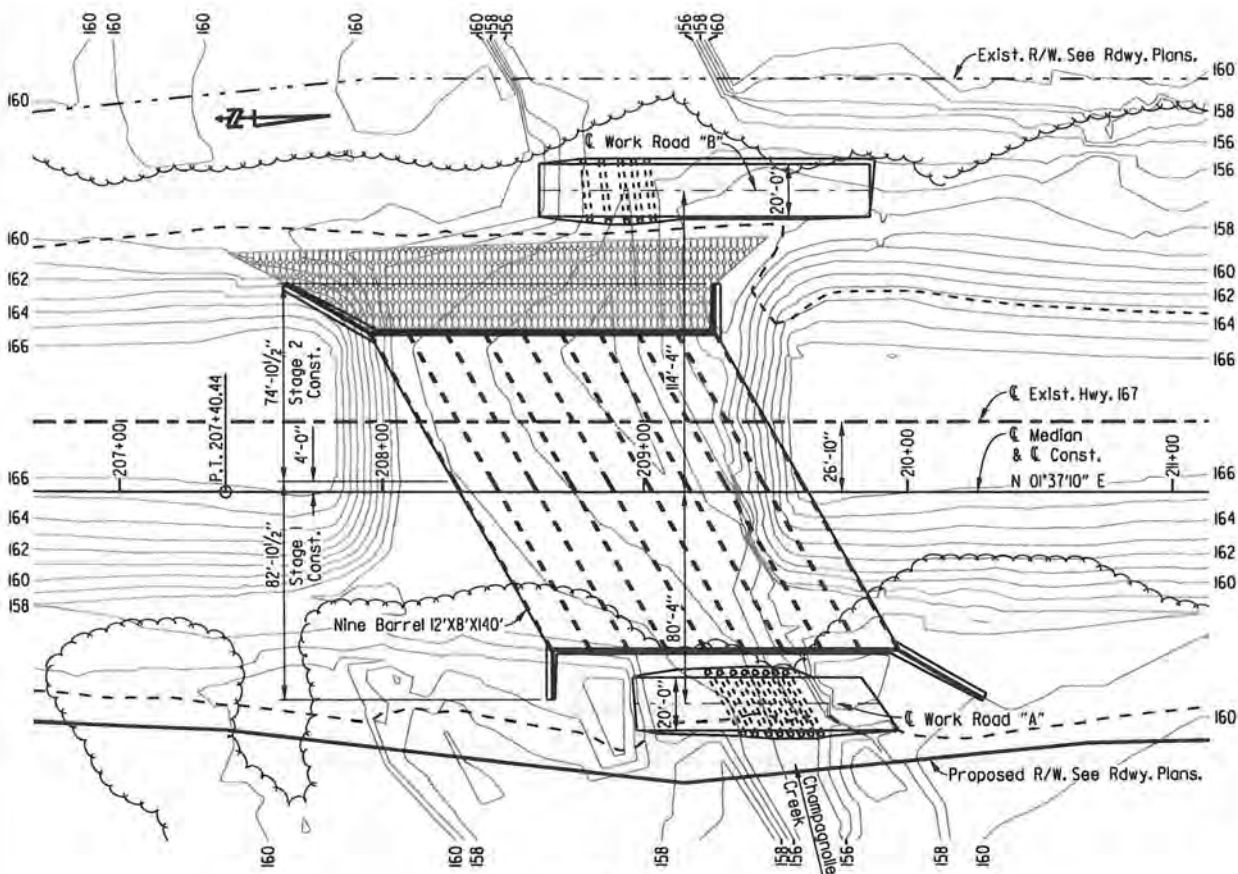
There will be 983 yds³ of temporary fill material for six temporary haul roads associated with the three bridge crossings. Please see attached 3-page drawing (Conceptual Work Plan for Temporary Fill).

Table 1		
Bridge No.	Stream	Existing Structure Information
A0309	Champagnolle Creek	175' x 43' reinforced concrete deck girder spans supported by concrete pile bents and a sufficiency rating of 86.9
A2041	Champagnolle Creek Relief	162' x 43' reinforced concrete deck girder spans supported by concrete pile bents and a sufficiency rating of 93.3
A0308	Champagnolle Creek Relief	75' x 43' reinforced concrete deck girder spans supported by concrete pile bents and a sufficiency rating of 93.3

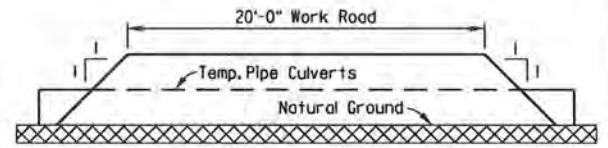
Table 2		
Stream	Proposed Structure	Detour Location
Champagnolle Creek	Sextuple 12' x 7' x 140' reinforced concrete box culvert	None
Champagnolle Creek Relief	Quadruple 12' x 7' x 140' reinforced concrete box culvert	None
Champagnolle Creek Relief	Triple 12' x 7' x 140' reinforced concrete box culvert	None

Design data for this project is as follows:

Design Year	Average Daily Traffic	Percent Trucks	Design Speed
2016	3,700	26	60 mph
2036	4,600	26	60 mph



PLAN
No Scale



SECTION THRU WORK ROAD
No Scale

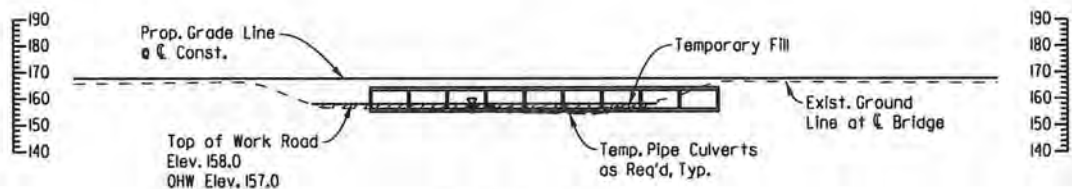
	Approximate Quantities	
	Below OHW	Total
Work Road A Fill Area	1693 sq. ft.	2227 sq. ft.
Work Road B Fill Area	1750 sq. ft.	2934 sq. ft.
Work Road A Fill Volume	38 cu. yd.	79 cu. yd.
Work Road B Fill Volume	36 cu. yd.	108 cu. yd.

Note: OHW is Ordinary High Water

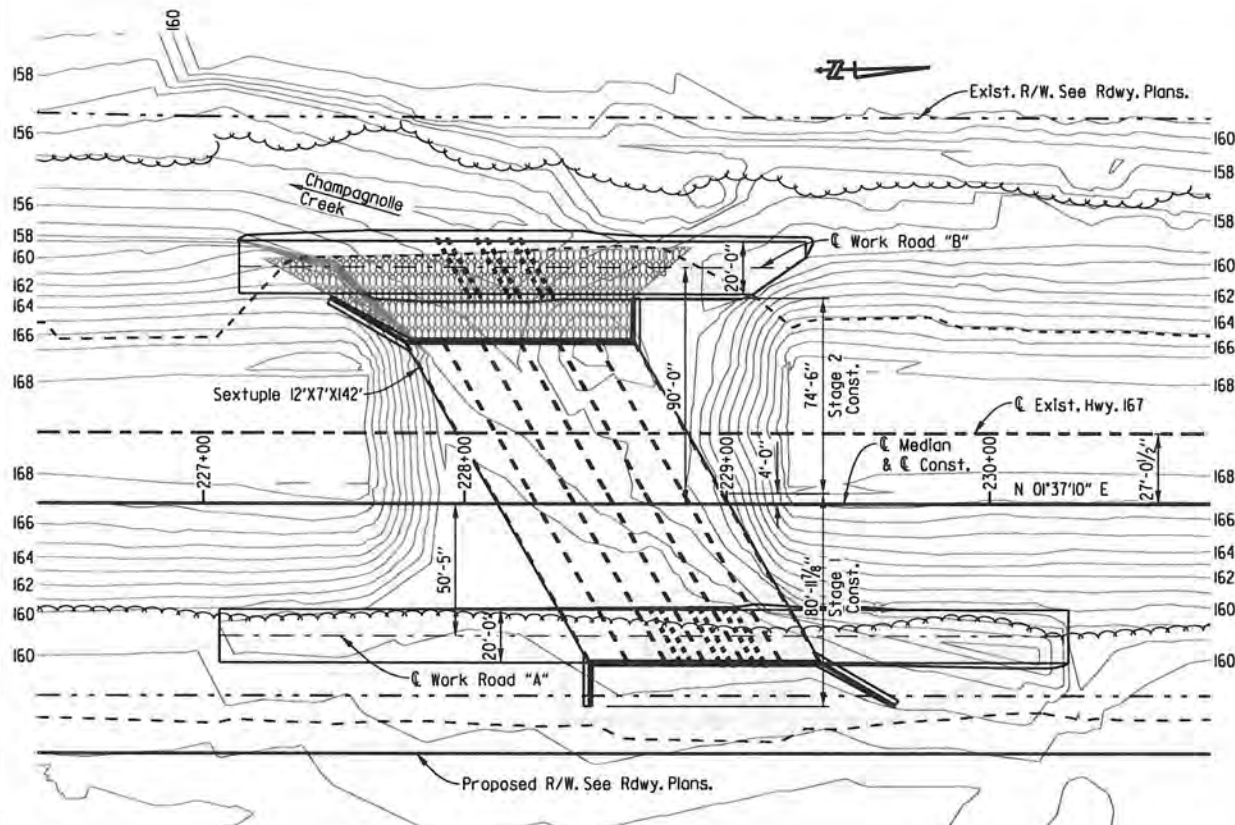
Notes: The temporary fill to construct the work road(s) shown has been permitted to facilitate construction of the project. The Contractor shall determine and provide temporary culverts of a size and number that will be sufficient to maintain low stream flows and assist passage of aquatic wildlife.

The Contractor may submit an alternative work road plan for approval by the Engineer showing details of and describing the proposed modifications. The primary objective of any proposed modifications should be to minimize the reduction of the waterway opening in the floodplain. The top of the alternative work road(s) shall not exceed the elevation shown. A determination will be made by the Engineer within ten (10) days concerning the necessity or practicability of the request. A modification of the Section 404 Permit and additional review time by the Corps of Engineers may be required if the alternative work road(s) increases the volume of temporary fill that has been permitted for the project. The contract time will not be extended for the time required to consider or approve any alternative work road(s) submittal.

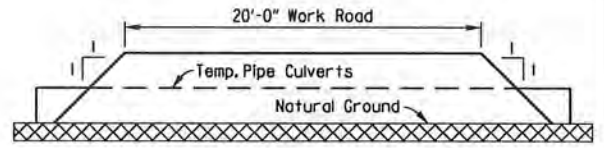
The Contractor is responsible for maintenance of the work road(s) during the contract period. See SP Job CA0702 "Construction in Special Flood Hazard Areas" and Section 110.06(c) in the Standard Specifications for additional information.



ELEVATION
No Scale



PLAN
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SECTION THRU WORK ROAD
No Scale

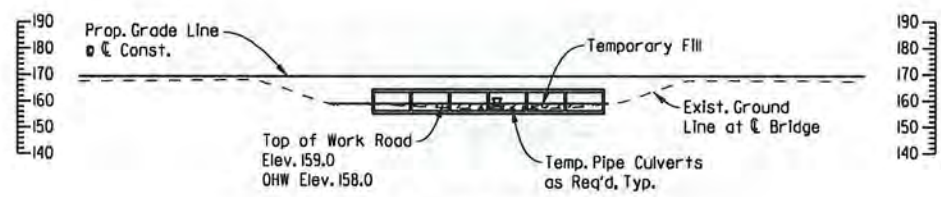
	Approximate Quantities	
	Below OHW	Total
Work Road A Fill Area	1657 sq. ft.	6779 sq. ft.
Work Road B Fill Area	2107 sq. ft.	4187 sq. ft.
Work Road A Fill Volume	131 cu. yd.	500 cu. yd.
Work Road B Fill Volume	528 cu. yd.	805 cu. yd.

Note: OHW is Ordinary High Water

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ELEVATION
No Scale

Sheet 17 of 20

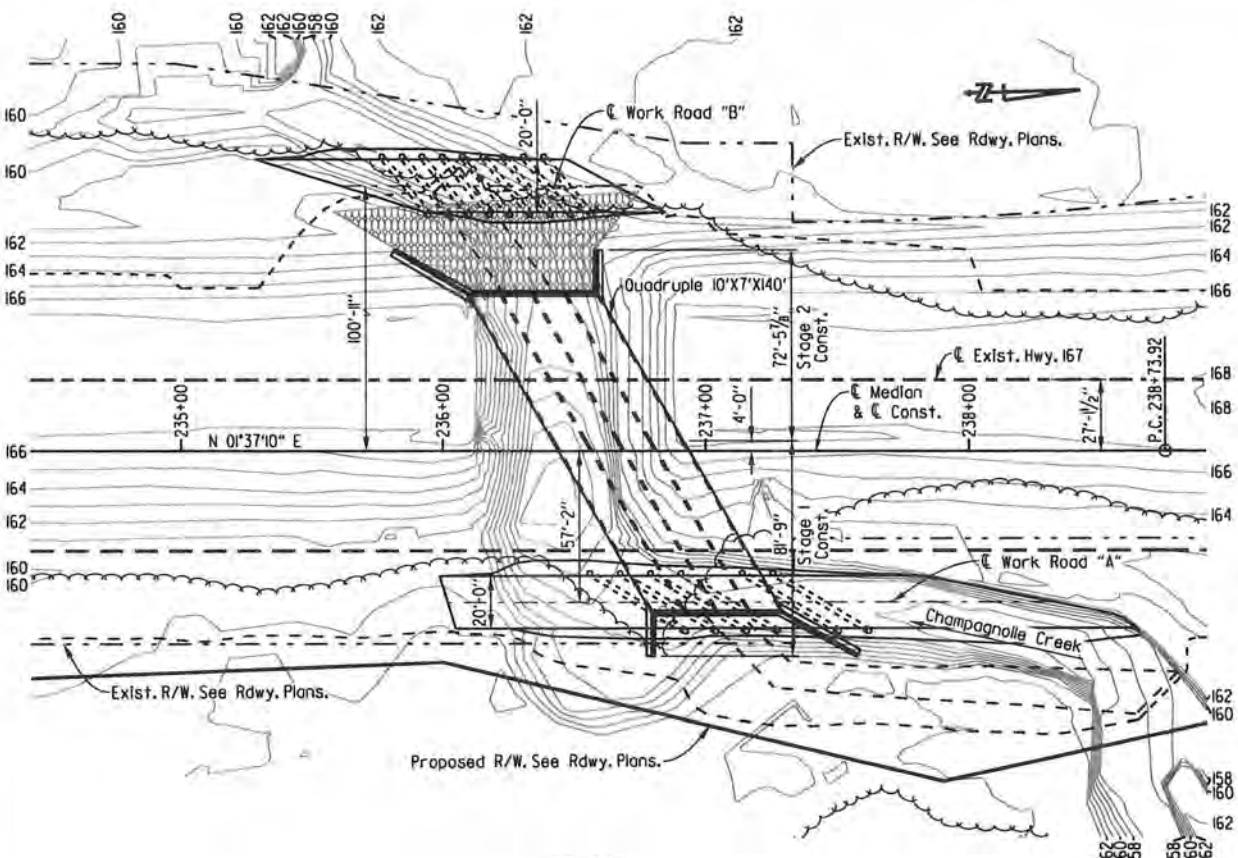
CONCEPTUAL WORK PLAN
FOR TEMPORARY FILL
HAMPTON - HWY. 274
(WIDENING) (S)
CALHOUN COUNTY

ROUTE 167 SEC. 4

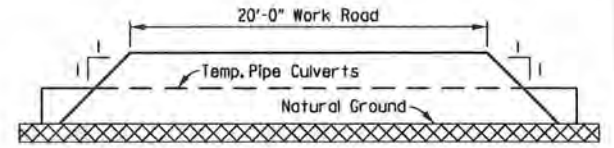
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: BWC DATE: 10-13-16 FILENAME: rCA0702_a2.wrkrd.dgn



PLAN
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SECTION THRU WORK ROAD
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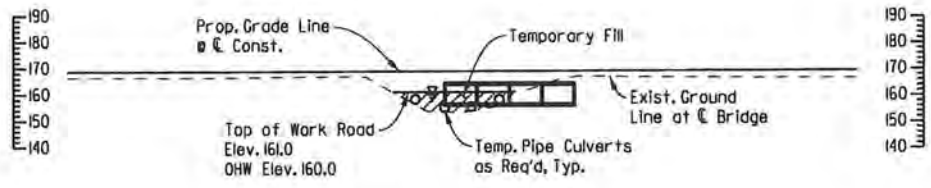
	Approximate Quantities	
	Below OHW	Total
Work Road A Fill Area	5455 sq. ft.	6019 sq. ft.
Work Road B Fill Area	1861 sq. ft.	2583 sq. ft.
Work Road A Fill Volume	184 cu. yd.	273 cu. yd.
Work Road B Fill Volume	66 cu. yd.	126 cu. yd.

Note: OHW is Ordinary High Water

Notes: The temporary fill to construct the work road(s) shown has been permitted to facilitate construction of the project. The Contractor shall determine and provide temporary culverts of a size and number that will be sufficient to maintain low stream flows and assist passage of aquatic wildlife.

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ELEVATION
No Scale

Sheet 18 of 20

CONCEPTUAL WORK PLAN
FOR TEMPORARY FILL
HAMPTON - HWY. 274
(WIDENING) (S)
CALHOUN COUNTY
ROUTE 167 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

**ADVERSE IMPACT
FACTORS FOR RIVERINE SYSTEMS WORKSHEET**

Stream Type Impacted	Ephemeral 0.1			Intermittent 0.4			Perennial 0.8		
Priority Area	Tertiary 0.1			Secondary 0.4			Primary 0.8		
Existing Condition	Impaired 0.1			Somewhat Impaired 0.8			Fully Functional 1.6		
Duration	Temporary 0.05			Recurrent 0.1			Permanent 0.3		
Activity	Clearing 0.05	Utility Crossing/Bridge Footing 0.15	Below Grade Culvert 0.3	Armor 0.5	Detention 0.75	Morphologic Change 1.5	Impoundment (dam) 2.0	Pipe >100' 2.2	Fill 2.5
Linear Impact	<100' 0	100'-200' 0.05	201-500' 0.1	501-1000' 0.2	>1000 linear feet (LF) 0.1 reach 500 LF of impact (example: scaling factor for 5,280 LF of impacts = 1.1)				

Stream 2b Stream 2a

Factor	Dominant Impact Type 1	Dominant Impact Type 2	Dominant Impact Type 3	Dominant Impact Type 4	Dominant Impact Type 5
Stream Type Impacted	0.8	0.8			
Priority Area	0.1	0.1			
Existing Condition	0.1	0.1			
Duration	0.3	0.3			
Activity	2.5	2.2			
Linear Impact	0.1	0.1			
Sum of Factors	M = 3.9	3.6			
Linear Feet of Stream Impacted in Reach	LF = 279	258			
M X LF	1,088	929			

Total Mitigation Credits Required = (M X LF) = 2,017

Factor	Wetland 1	Wetland 2	Wetland 3a	Wetland 3b	Wetland 4	Wetland 5a	Wetland 5b	Wetland 6	Wetland 7	Wetland 8	Wetland 9	Wetland 10	Wetland 11	Wetland 12a	Wetland 12b	Wetland 13a	Wetland 13b	Wetland 14	Wetland 15a	Wetland 15b	TOTALS	
Wetland Type	Forested	Forested	Forested	Emergent	Forested	Forested	Emergent	Forested	Forested	Forested	Emergent	Forested	Emergent	Forested	Emergent	Forested	Emergent	Emergent	Forested	Emergent		
Lost Type	Type A	Type A	Type A	Type B	Type A	Type A	Type B	Type A	Type A	Type A	Type B	Type B	Type B	Type A	Type B	Type A	Type B	Type B	Type A	Type B		
	3.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	2.0	3.0	2.0	2.0	3.0	2.0		
Priority Category	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Existing Condition	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	Slightly impaired	
	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Duration	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	
	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Dominant Impact	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	
	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Cumulative Impact	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Location	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	Off-site	
	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Sum of r Factors (R _i)	13.5	13.5	13.5	12.5	13.5	13.5	12.5	13.5	13.5	13.5	12.5	12.5	12.5	13.5	12.5	13.5	12.5	12.5	13.5	12.5	12.5	
Impacted Area (AA _i)	0	0	0.11	0.03	0	0.54	0.4	0	2.29	0.02	0.13	0.02	0.22	0	0.01	0	0.01	0.06	0.02	0.02	3.88	
RxAA=	0.00	0.00	1.49	0.38	0.00	7.29	5.00	0.00	30.92	0.27	1.63	0.25	2.75	0.00	0.13	0.00	0.13	0.75	0.27	0.25	51.50	

Total Required Credits = Σ(RxAA) = **51.50**

Credit per acre at Commercial Mitigation Bank = **3.5

*
**

Assume that the commercial mitigation site's service area will cover the project area in Calhoun County, Arkansas.
Assume commercial mitigation bank credit per acre of 3.5.

Acres = **14.71**