



US Army Corps  
of Engineers®  
Little Rock District

# JOINT PUBLIC NOTICE

*CORPS OF ENGINEERS – STATE OF ARKANSAS*

**Application Number: MVK 2016-00927**

**Date: November 3, 2016**

**Comments Due: November 28, 2016**

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**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](mailto: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 17.8 miles of U.S. Highway 70 and constructing four replacement bridges. This project was originally planned as two AHTD jobs, CA0606 and 061377, but has now been combined into one job CA0610. The proposed project begins on the east side of Hot Springs and extends eastward to Interstate 30. The project is located in section 5, T. 3 S., R. 18 W., sections 23, 24, 26, 27, 33, 34, 35, T. 2 S., R. 18 W., sections 13, 14, 15, 16, 17, 18 and 19, T. 2 S., R. 17 W., and sections 18, 19, 20, 21, 22, 23 and 24, T. 2. S, R. 16 W., Garland and Saline Counties, Arkansas.

The overall purpose of the project is to construct a wider roadway and replace four structurally deficient bridges between Hot Springs and Interstate 30. The basic purpose of the project is to enhance safety and relieve congestion on U.S. Highway 70. The project is not water dependent.

The entire project would be built on existing alignment and would add two travel lanes and a median. The upgraded roadway would consist of four 12-foot-wide travel lanes with 8-foot-wide shoulders and an 11-foot-wide median or left turn lane. The average right-of-way width for the project is 300 feet and the total length for the project is 17.8 miles. The Federal Highway Administration approved Job CA0606 as a categorical exclusion (CE) on April 15, 2016, and Job 061377 as a CE on December 28, 2015. A copy of these documents is available for viewing at the AHTD Central Office in Little Rock.

The project would cross fifty-six stream segments impacting approximately 6,749 linear feet and nine wetland areas impacting approximately 1.28 acres. Named streams include Tenmile Creek, Caney Creek and East Branch of Gulpha Creek which are perennial. The remaining streams are intermittent and ephemeral unnamed tributaries that range from functionally impaired to fully

functional. The primary impact to streams would be extending box or pipe culverts. Approximately 4,189 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 2,560 linear feet of stream impacts would consist of filling and realigning or relocating streams for embankment widening and culvert construction. Temporary work roads for bridge construction would be built at Tenmile Creek and Caney Creek. The substrate for all of the streams is generally a mix of sand and gravel and the overall water quality for each stream is generally good. Tenmile Creek flows into the South Fork of the Saline River approximately 0.5 miles south of the project and is designated as an Ecologically Sensitive Waterbody by the Arkansas Department of Environmental Quality. Wetlands within the project area are primarily herbaceous and scrub/shrub vegetated depressions associated with stream channels. These wetlands have been previously impacted and have low functions and values. Dominant vegetation in the wetlands consists of black willow (*Salix nigra*), button bush (*Cephalanthus occidentalis*), bushy bluestem (*Andropogon glomeratus*), narrowleaf cattail (*Typha angustifolia*), soft rush (*Juncus effusus*) and yellow nutsedge (*Cyperus esculentes*).

The project is located in the Central Mountain Ranges and Central Hills, Ridges and Valley subdivisions of the Ouachita Mountains Ecoregion. The project lies within the Ouachita Headwaters (hydrologic unit code 08040101) and Upper Saline River (hydrologic unit code 08040203) watersheds. Lands adjacent to the project are primarily forested and sparsely populated with residential homes and a few businesses. The majority of the project would be constructed within the existing 300-foot-wide highway right-of-way which has been previously impacted by roadway and utility construction.

The AHTD consulted with the U.S. Fish and Wildlife Service (USF&WS) regarding potential impacts to the Federally endangered Arkansas Fatmucket (*Lampsilis powelli*) and Federally threatened Northern Long-eared Bat (*Myotis septentrionalis*). The AHTD determined that, although the habitat and flow regime are not suitable for the Arkansas Fatmucket within the project area, it is possible that fish hosts of this mussel may utilize these tributaries for breeding or foraging. Special Provisions will be included in the contract that outline the use of best management practices to reduce the likelihood that sediments or hazardous chemicals will enter any tributary of the South Fork of the Saline River. For the Northern Long-eared Bat, the AHTD consulted with the USF&WS in accordance with the 4(d) Rule and determined that a Special Provision would be included in the contract to address compliance of all off-site areas. Approximately 0.2 acres of prime farmland would be converted to highway right-of-way for highway construction. The State Historic Preservation Officer (SHPO) recommended Phase II testing on three archeological sites to determine if they are eligible for inclusion on the National Register of Historic Places (NRHP). The SHPO also recommended Phase II testing on an additional site to determine if deeply-buried deposits exist and, if necessary, to determine NRHP eligibility. The Phase II work is within the existing right-of-way and will be completed by the AHTD. There are no environmental justice issues associated with the project. The project would not relocate any residences or businesses. Saline and Garland Counties participate 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 north or south at various locations in order to avoid or minimize impacts, however, complete avoidance was not possible. 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 2,560 linear feet of stream and 1.28 acres of wetlands at their Upper Saline River 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 50 of 50.

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 has completed 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; 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 **November 28, 2016.**

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.

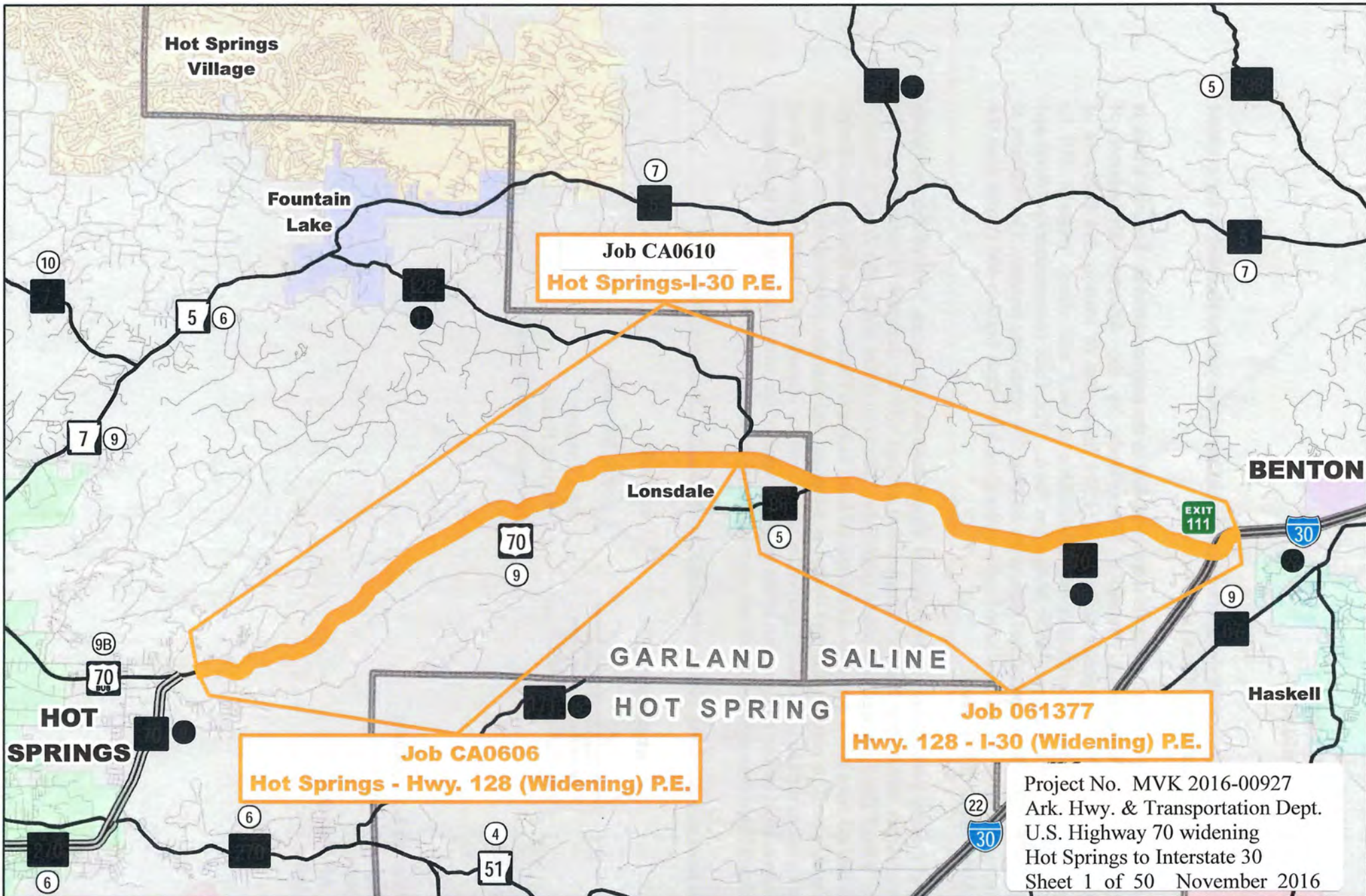
Enclosures

Approximate Coordinates of Project Center

Latitude: **34.55136** Longitude: **-92.79193**

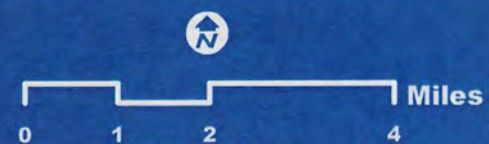
UTM Zone: **15** North: **3823311** East: **519089**





**AHTD Job CA0606: Hot Springs-Hwy. 128 (Widening) (P.E.)  
Project Location Map**

**Highway 70  
Garland County**



**Table 2. Stream Summary**

Original Project #	Stream Crossing ID #	Previous Station # <sup>1</sup>	Current Station # <sup>1</sup>	Name	Type	Impact Type	Roadway Impact (l.f.)
CA0606	ST1	907+00 to 911+50	507+00 to 511+50	Unnamed	Ephemeral	Culvert Extension	141
CA0606	ST2	913+00 to 915+25	513+00 to 515+25	Unnamed	Intermittent	Culvert Extension	171
CA0606	ST3	946+50	546+50	Unnamed	Ephemeral	Culvert Extension	118
CA0606	ST4	954+50	554+50	Unnamed	Ephemeral	Culvert Extension	123
CA0606	ST5	960+00 to 963+00	560+00 to 563+00	Unnamed	Ephemeral	Culvert Extension	157
CA0606	ST6	969+00	569+00	Unnamed	Ephemeral	Culvert Extension	59
CA0606	ST7	976+00	576+00	Unnamed	Ephemeral	Culvert Extension	82
CA0606	ST8	977+00 to 979+00	577+00 to 579+00	Unnamed	Ephemeral	Culvert Extension	70
CA0606	ST9	982+50	582+50	Unnamed	Ephemeral	Culvert Extension	128
CA0606	ST10	983+75 to 986+25	583+75 to 586+25	Unnamed	Ephemeral	Culvert Extension	149
CA0606	ST11	988+00 to 994+00	588+00 to 594+00	East Branch Gulpha Creek	Perennial	Realignment <sup>2</sup>	293
CA0606	ST12	996+00 to 998+50	596+00 to 598+50	East Branch Gulpha Creek	Perennial	No Impact	0
CA0606	ST13	1002+50 to 1016+00	602+50 to 616+00	East Branch Gulpha Creek	Perennial	Realignment <sup>2</sup>	118
CA0606	ST14	1010+25 to 1012+00	610+25 to 612+00	Unnamed	Ephemeral	Culvert Extension	127
CA0606	ST15	1022+00	622+00	Unnamed	Ephemeral	Culvert Extension	74
CA0606	ST16	1030+00 to 1031+00	630+00 to 631+00	East Branch Gulpha Creek	Intermittent	Culvert Extension	118



Original Project #	Stream Crossing ID #	Previous Station # <sup>1</sup>	Current Station # <sup>1</sup>	Name	Type	Impact Type	Roadway Impact (l.f.)
CA0606	ST17	1038+00 to 1053+25	638+00 to 653+25	Unnamed	Perennial	Culvert Extension	175
CA0606	ST18	1043+00	643+00	Unnamed	Ephemeral	No Impact	0
CA0606	ST19	1051+00	651+00	Unnamed	Ephemeral	No Impact	0
CA0606	ST20	1059+50 to 1070+00	659+50 to 670+00	Unnamed	Perennial	Culvert Extension <sup>2</sup>	475
CA0606	ST21	1066+00	666+00	Unnamed	Ephemeral	No Impact	0
CA0606	ST22	1070+00 to 1077+00	670+00 to 677+00	Unnamed	Intermittent	Realignment <sup>2</sup>	152
						Culvert Extension	93
CA0606	ST23	1070+00 and 1078+25 to 1110+50	670+00 and 678+25 to 710+50	Unnamed	Intermittent	No Impact	0
CA0606	ST24	1160+75	760+75	Unnamed	Intermittent	Culvert Extension	35
CA0606	ST25	1168+00	768+00	Unnamed	Ephemeral	Culvert Extension	77
CA0606	ST26	1180+00 to 1182+00	780+00 to 782+00	Unnamed	Intermittent	Culvert Extension	138
CA0606	ST27	1222+50	822+50	Unnamed	Ephemeral	Culvert Extension	27
CA0606	ST28	1236+25 to 1271+50	836+25 to 871+50	Unnamed	Intermittent	No Impact	0
CA0606	ST29	1271+50	871+50	Tenmile Creek	Perennial	No Impact	0
CA0606	ST30	1274+00 to 1276+00	874+00 to 876+00	Unnamed	Ephemeral	Culvert Extension	194
CA0606	ST31	1281+00 to 1284+00	881+00 to 884+00	Unnamed	Ephemeral	Culvert Extension	213
CA0606	ST32	1287+75 to 1290+00	887+75 to 890+00	Unnamed	Ephemeral	Culvert Extension	88
CA0606	ST33	1312+50 to 1315+25	912+50 to 915+25	Unnamed	Ephemeral	Culvert Extension	110

Original Project #	Stream Crossing ID #	Previous Station # <sup>1</sup>	Current Station # <sup>1</sup>	Name	Type	Impact Type	Roadway Impact (I.f.)
CA0606	ST34	1319+00 to 1322+75	919+00 to 922+75	Unnamed	Ephemeral	Realignment <sup>2</sup>	201
						Culvert Extension	33
CA0606	ST35	1322+75 to 1330+75	922+75 to 930+75	Unnamed	Intermittent	Realignment <sup>2</sup>	162
CA0606	ST36	1336+75	936+75	Unnamed	Ephemeral	Culvert Extension	36
CA0606	ST37	1342+50	942+50	Unnamed	Ephemeral	Culvert Extension	69
CA0606	ST38	1372+50 to 1375+00	972+50 to 975+00	Unnamed	Intermittent	Culvert Extension	181
CA0606	ST39	1376+50	976+50	Unnamed	Ephemeral	Culvert Extension	117
061377	ST1	1071+98	1071+98	Unnamed	Intermittent	Culvert Extension	92
061377	ST2	1090+19	1090+19	Unnamed	Intermittent	Culvert Extension	95
061377	ST3a	1134+21	1134+21	Unnamed	Ephemeral	Culvert Extension	74
061377	ST3b	1182+20	1182+20	Unnamed	Ephemeral	Culvert Extension	65
061377	ST3c	1187+60	1187+60	Unnamed	Ephemeral	Culvert Extension	62
061377	ST3	1209+50	1209+50	Tenmile Creek	Perennial	Bridge Replacement	71
061377	ST4	1249+24	1249+24	Unnamed	Intermittent	Culvert Extension	88
061377	ST5	1262+15	1262+15	Caney Creek	Perennial	Bridge Replacement	145
061377	ST6	1294+04	1294+04	Unnamed	Intermittent	Culvert Extension	82
061377	ST7	1303+64	1303+64	Unnamed	Intermittent	Culvert Extension	91
061377	ST8a	1319+31	1319+31	Unnamed	Intermittent	Culvert Extension	187
061377	ST8	1337+61	1337+61	Unnamed	Intermittent	Culvert Extension	80
061377	ST9	1342+43	1342+43	Unnamed	Perennial	Culvert Extension	87

Original Project #	Stream Crossing ID #	Previous Station # <sup>1</sup>	Current Station # <sup>1</sup>	Name	Type	Impact Type	Roadway Impact (l.f.)
061377	ST10	1343+50 to 1359+00	1343+50 to 1359+00	Unnamed	Perennial	Realignment <sup>2</sup>	243
061377	ST11a	1388+53	1388+53	Unnamed	Ephemeral	Culvert Extension	83
061377	ST11	1397+07 to 1408+53	1397+07 to 1408+53	Unnamed	Intermittent	Realignment <sup>2</sup>	601
						Culvert Extension	99
<b>TOTAL</b>							<b>6,749</b>

<sup>1</sup>Station numbers are approximate

<sup>2</sup>Impact included in Little Rock Stream Method Mitigation Calculations

**Table 1. Wetlands Summary**

Original Project #	Wetland Area ID #	Station # <sup>1</sup>	Type	Dominant Impact Type	Area in ROW (acres)	Roadway Impact (acres)
CA0606	WA1	760+00 to 762+50	PSS	Fill	0.22	0.15
CA0606	WA2	776+00 to 780+00	PFO	Fill	0.18	0.01
CA0606	WA3	885+00	PEM	Fill	0.03	0.02
CA0606	WA4	937+00	PEM	Fill	0.03	0.02
CA0606	WA5	970+00 to 973+00	PSS	Fill	0.51	0.10
061377	WA1	1090+25	PSS	Fill	0.03	0.03
061377	WA3	1265+00 to 1294+00	PEM	Fill	0.01	0.01
061377	WA4	1269+00 to 1279+00	PFO	Cut	0.59	0.59
061377	WA4b	1278+50 to 1294+00	PFO	Cut	0.35	0.35
<b>TOTAL</b>						<b>1.28</b>

<sup>1</sup>Station numbers are approximate

**ADVERSE IMPACT  
FACTORS FOR RIVERINE SYSTEMS WORKSHEET**

Stream Type Impacted	Ephemeral 0.1			Intermittent 0.4			Perennial-OHWM width		
				<15' 0.4	15'-30' 0.6	>30' 0.8			
Priority Area	Tertiary 0.1			Secondary 0.4			Primary 0.8		
Existing Condition	Functionally Impaired 0.1			Moderately Functional 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
Cumulative 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)				

Factor	CA0606 ST11 East Branch Gulpha Creek	CA0606 ST13 East Branch Gulpha Creek	CA0606 ST20 Unnamed	CA0606 ST22 Unnamed	CA0606 ST34 Unnamed	CA0606 ST35 Unnamed
Stream Type Impacted	.6	.6	.6	.4	.1	.4
Priority Area	.1	.1	.1	.1	.1	.1
Existing Condition	.8	.8	.1	.1	.1	.8
Duration	.3	.3	.3	.3	.3	.3
Activity	2.5	2.5	2.2	2.5	2.5	2.5
Cumulative Linear Impact	1.3	1.3	1.3	1.3	1.3	1.3
Sum of Factors (M)	5.6	5.6	4.6	4.7	4.4	5.4
Linear Feet of Stream Impacted in Reach (LF)	293	118	475	152	201	162
M x LF	1640.8	660.8	2185	714.4	884.4	874.8

**Total Mitigation Credits Required for CA0606 = (M x LF) = 6,960.2**

**ADVERSE IMPACT  
FACTORS FOR RIVERINE SYSTEMS WORKSHEET**

Stream Type Impacted	Ephemeral 0.1			Intermittent 0.4			Perennial-OHWM width		
				<15' 0.4	15'-30' 0.6	>30' 0.8			
Priority Area	Tertiary 0.1			Secondary 0.4			Primary 0.8		
Existing Condition	Functionally Impaired 0.1			Moderately Functional 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
Cumulative 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)				

Factor	061377 ST10 Unnamed	061377 ST11 Unnamed	Blank	Blank	Blank
Stream Type Impacted	.4	.4	-	-	-
Priority Area	.1	.1	-	-	-
Existing Condition	.8	.1	-	-	-
Duration	.3	.3	-	-	-
Activity	2.5	2.2	-	-	-
Cumulative Linear Impact	1.3	1.3	-	-	-
Sum of Factors (M)	5.4	4.4	-	-	-
Linear Feet of Stream Impacted in Reach (LF)	243	601	-	-	-
M x LF	1312.2	2644.4	-	-	-


**Total Mitigation Credits Required for 061377 = (M x LF) = 3,956.6**

Sheet 8 of 50

**Overall Total Mitigation Credits Required for CA0610 = 10,916.8**



# Required Wetland Mitigation Credit Table and Worksheet

 **TIP:** Leave cursor over each factor or option below to pop-up helpful information or definitions.

Required Wetland Mitigation Credit Table						
FACTORS	OPTIONS					
Lost Type	Type C 0.2		Type B 2.0		Type A 3.0	
Priority Category	Tertiary 0.5		Secondary 1.5		Primary 2.0	
Existing Condition	Very Impaired 0.1	Impaired 1.0		Partially Impaired 2.0		Fully Functional 2.5
Duration	0 to 1 Year 0.2	1 to 3 Years 0.5	3 to 5 Years 1.0	5 to 10 Years 1.5	Over 10 Years 2.0	
Dominant Impact	Shade 0.2	Clear 1.0	Drain 2.0	Dredge 2.5	Impound/Flood 2.5	Fill 3.0
Cumulative Impact	< 0.25 Acre 0.1	0.25 - 0.99 Acres 0.2	1.0 - 2.99 Acres 0.5	3.0 - 9.99 Acres 1.0	≥ 10.0 Acres 2.0	

**NOTE:** The cumulative impact factor for the overall project should be included in the sum of factors for each impacted area on the Required Wetland Mitigation Credit Worksheet

## Job CA0606

Required Wetland Mitigation Credit Worksheet						
FACTOR	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Lost Type	Type B	Type B	Type B	Type B	Type B	
Priority Category	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	
Existing Condition	Partially Impaired	Partially Impaired	Partially Impaired	Partially Impaired	Partially Impaired	
Duration	Over 10 Years	Over 10 Years	Over 10 Years	Over 10 Years	Over 10 Years	
Dominant Impact	Fill	Fill	Fill	Fill	Fill	
Cumulative Impact	1.0 - 2.99 Acres	1.0 - 2.99 Acres	1.0 - 2.99 Acres	1.0 - 2.99 Acres	1.0 - 2.99 Acres	
Sum of Factors	10	10	10	10	10	
Impacted Area	0.15	0.01	0.02	0.02	0.10	
R x AA=	1.5	0.1	0.2	0.2	1	

Required Wetland Mitigation Credits =  $\Sigma (R \times A) =$

3

# Required Wetland Mitigation Credit Table and Worksheet



**TIP:** Leave cursor over each factor or option below to pop-up helpful information or definitions.

Required Wetland Mitigation Credit Table						
FACTORS	OPTIONS					
Lost Type	Type C 0.2	Type B 2.0			Type A 3.0	
Priority Category	Tertiary 0.5		Secondary 1.5		Primary 2.0	
Existing Condition	Very Impaired 0.1	Impaired 1.0		Partially Impaired 2.0	Fully Functional 2.5	
Duration	0 to 1 Year 0.2	1 to 3 Years 0.5	3 to 5 Years 1.0	5 to 10 Years 1.5	Over 10 Years 2.0	
Dominant Impact	Shade 0.2	Clear 1.0	Drain 2.0	Dredge 2.5	Impound/Flood 2.5	Fill 3.0
Cumulative Impact	< 0.25 Acre 0.1	0.25 - 0.99 Acres 0.2	1.0 - 2.99 Acres 0.5	3.0 - 9.99 Acres 1.0	≥ 10.0 Acres 2.0	

**NOTE:** The cumulative impact factor for the overall project should be included in the sum of factors for each impacted area on the Required Wetland Mitigation Credit Worksheet

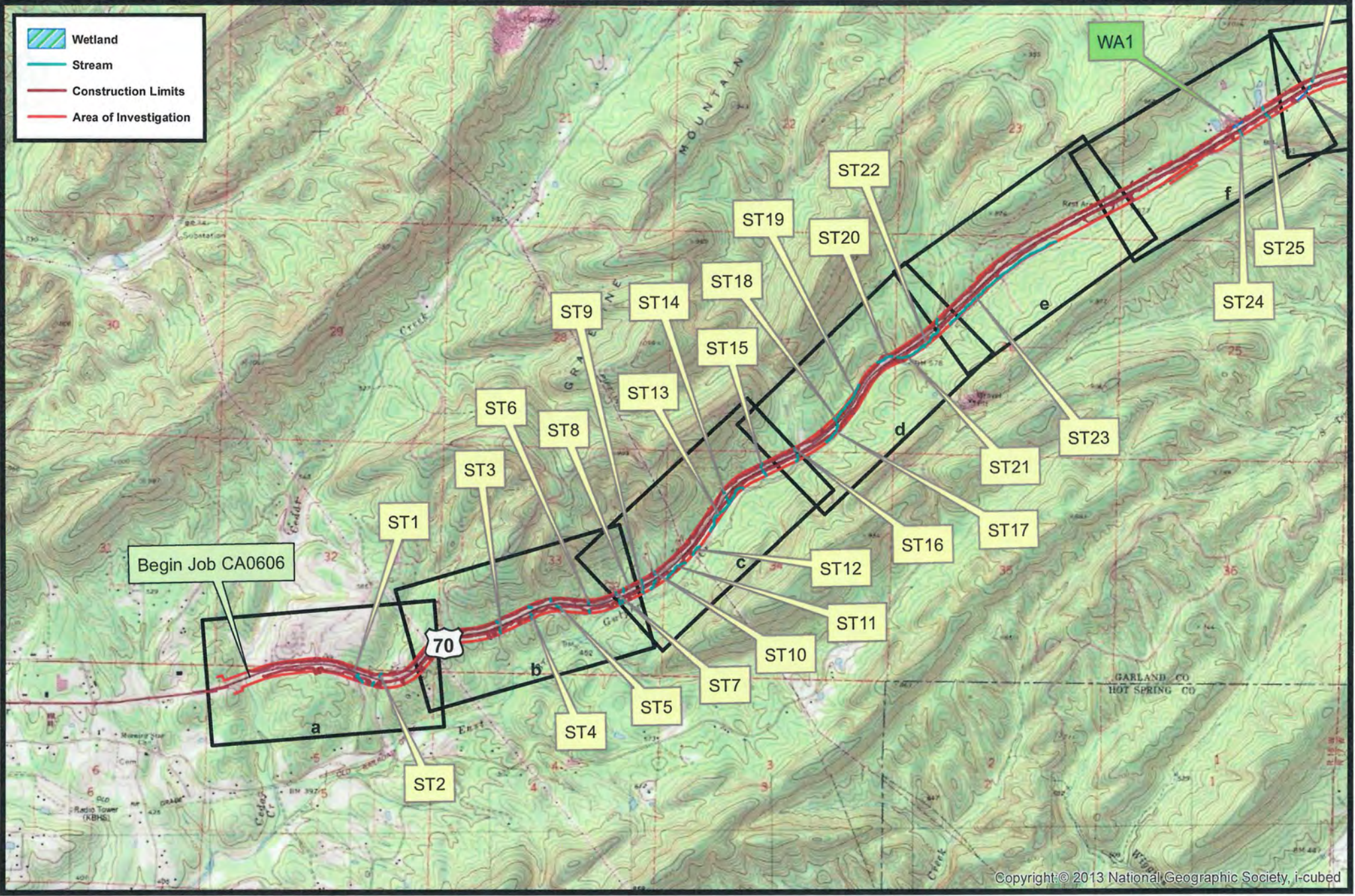
**Job 061377**

Required Wetland Mitigation Credit Worksheet						
FACTOR	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6
Lost Type	Type B	Type B	Type B	Type B		
Priority Category	Tertiary	Tertiary	Tertiary	Tertiary		
Existing Condition	Partially Impaired	Partially Impaired	Partially Impaired	Partially Impaired		
Duration	Over 10 Years	Over 10 Years	Over 10 Years	Over 10 Years		
Dominant Impact	Fill	Fill	Dredge	Dredge		
Cumulative Impact	1.0 - 2.99 Acres	1.0 - 2.99 Acres	1.0 - 2.99 Acres	1.0 - 2.99 Acres		
Sum of Factors	10	10	9.5	9.5		
Impacted Area	0.03	0.01	0.59	0.35		
R x AA=	0.3	0.1	5.605	3.325		

Required Wetland Mitigation Credits =  $\Sigma (R \times A) =$

<b>9.33</b>
-------------





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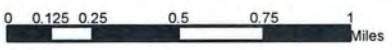


Figure 1a  
USGS Topographic Map

Hwy 70 Improvements Project  
AHTD Project Number CA0606  
Garland County



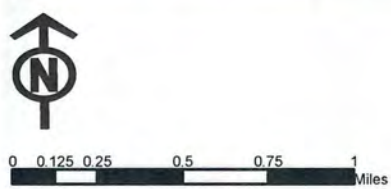
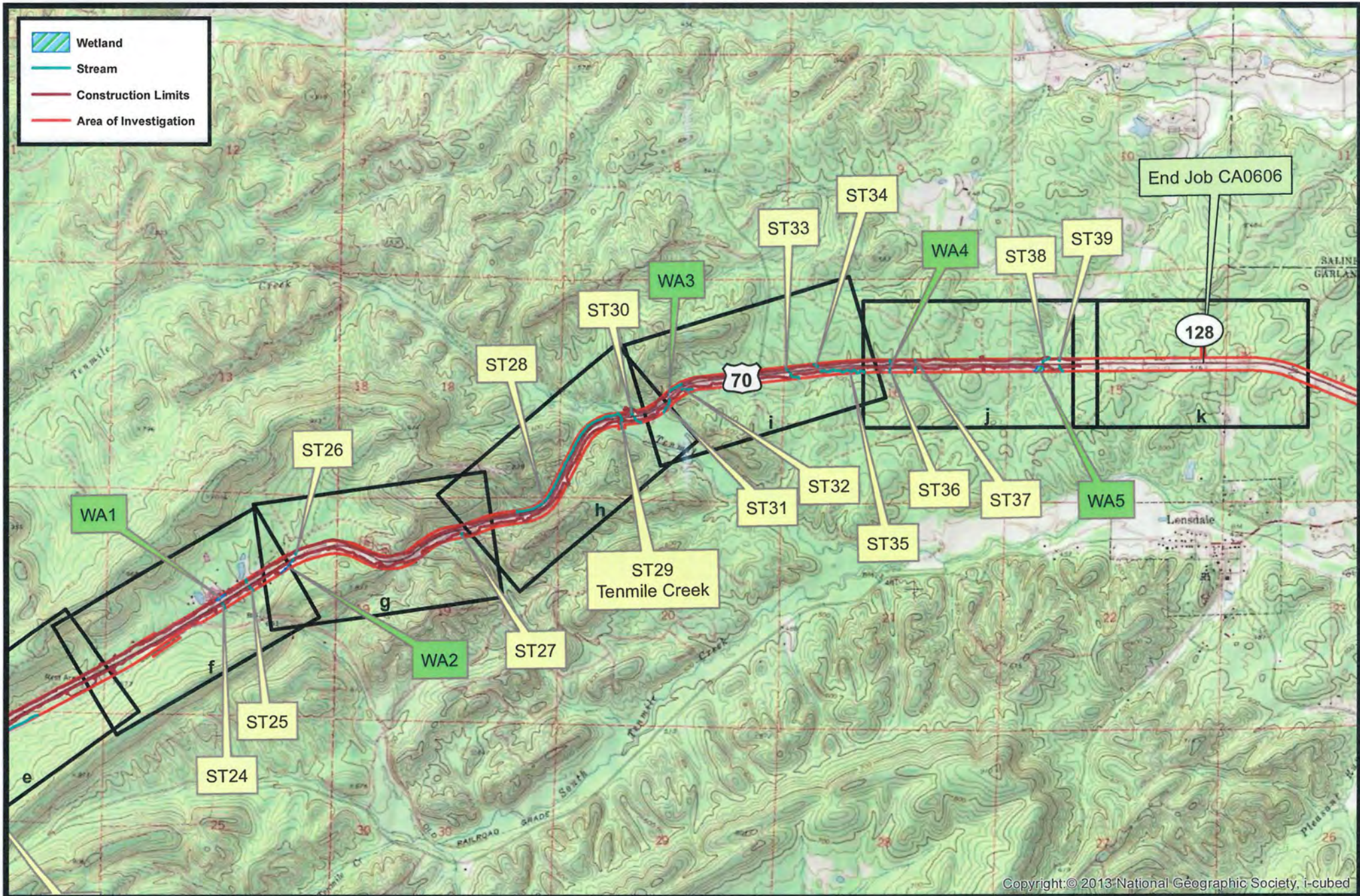


Figure 1b  
USGS Topographic Map

Hwy 70 Improvements Project  
AHTD Project Number CA0606  
Garland County



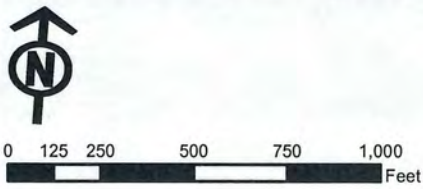
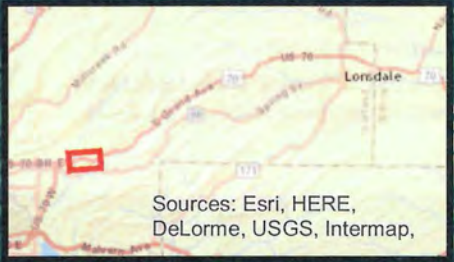
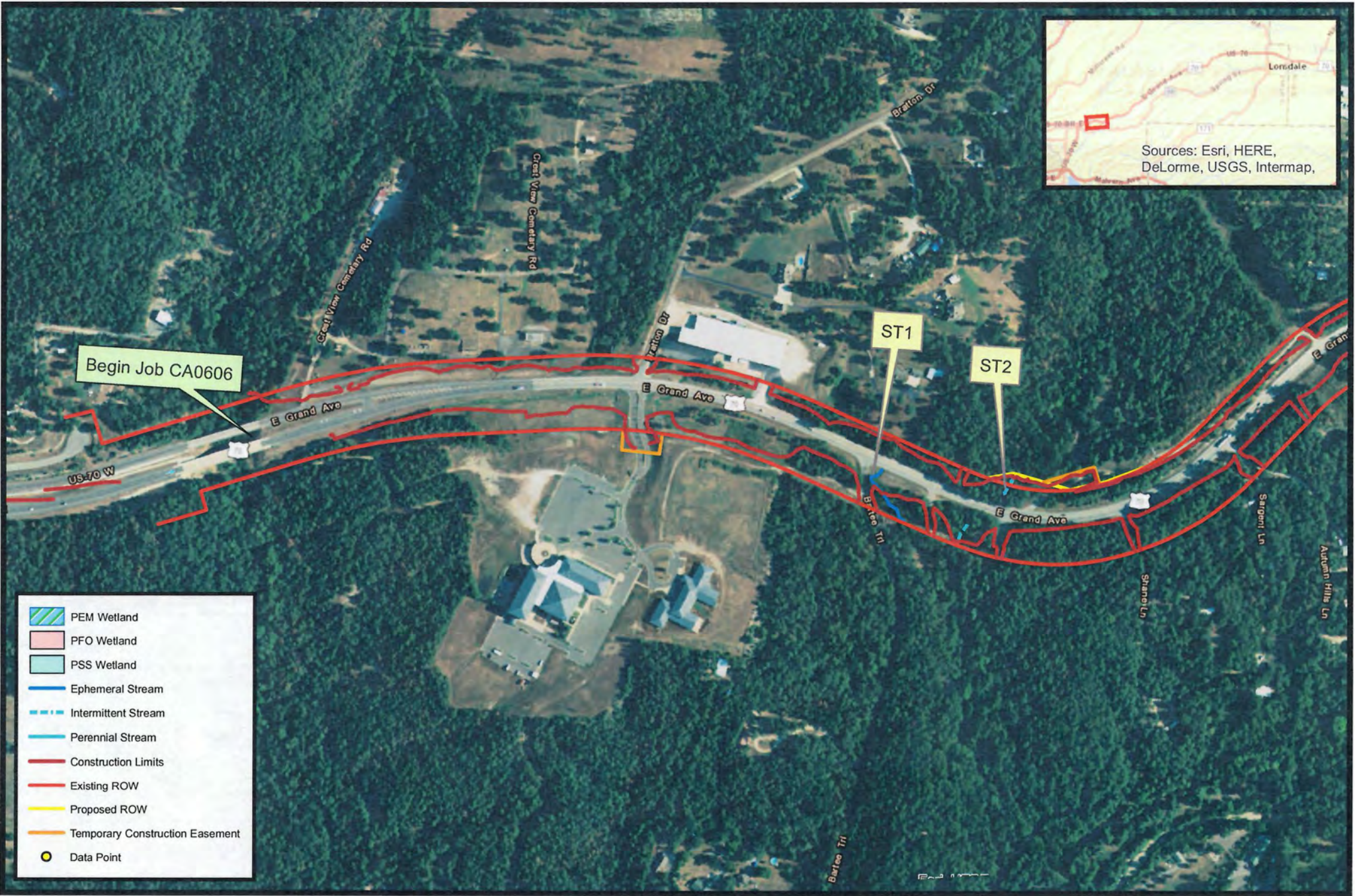
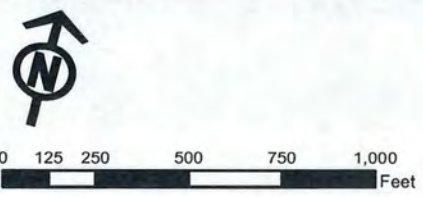
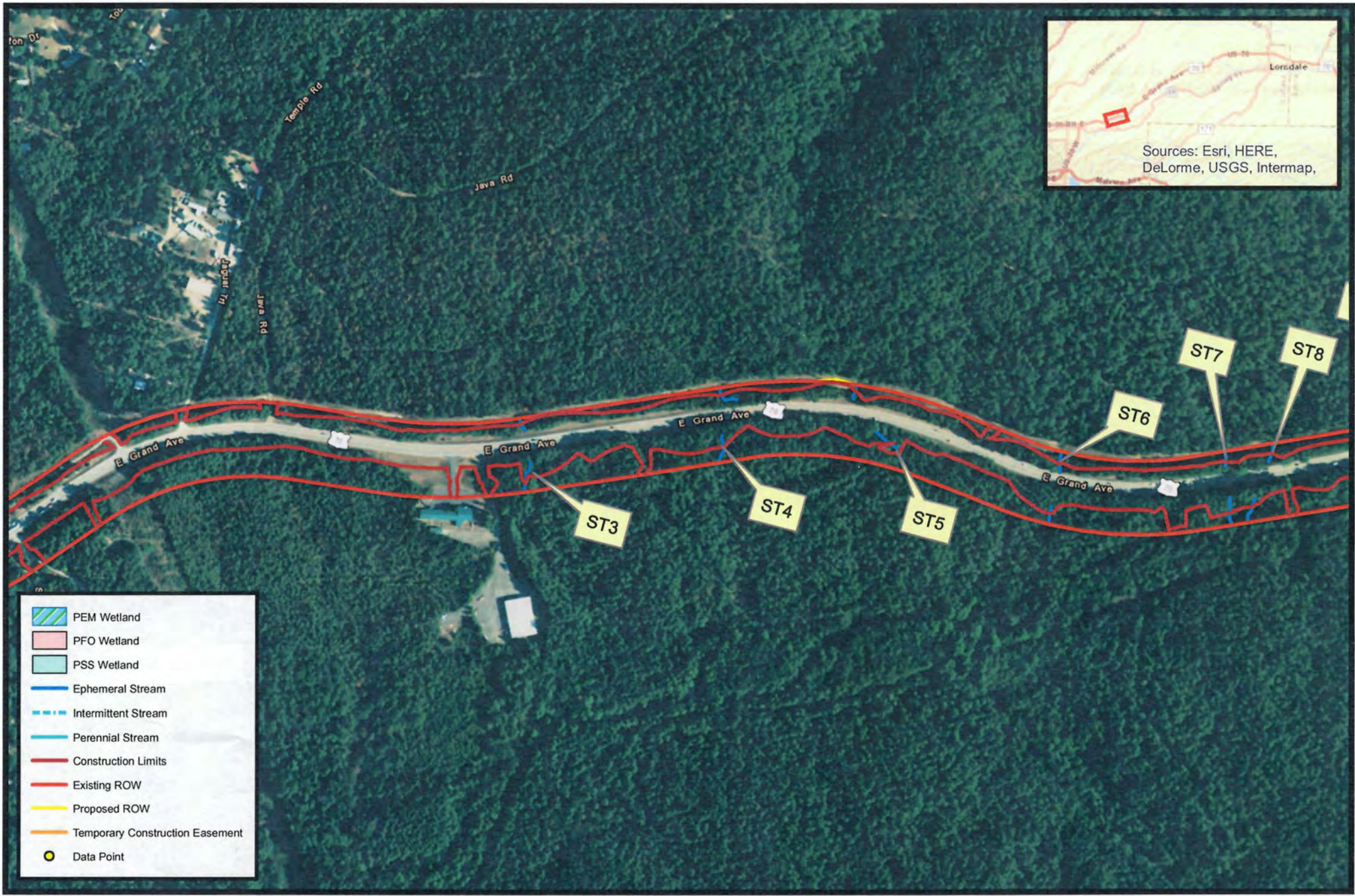


Figure 4a  
Wetland and Stream Location Map  
2015 NAIP Imagery





**Figure 4b**  
**Wetland and Stream Location Map**  
**2015 NAIP Imagery**



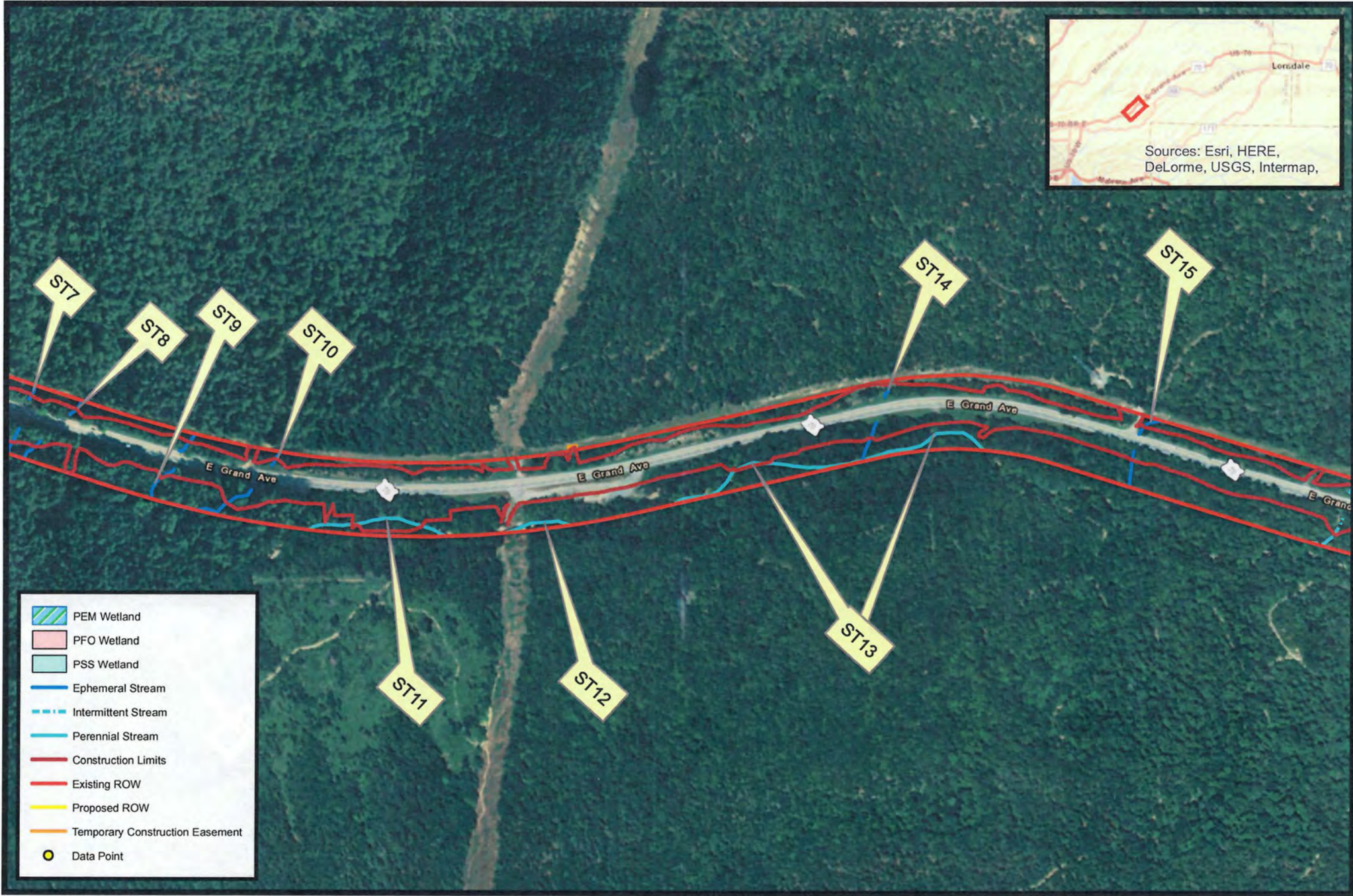


Figure 4c  
Wetland and Stream Location Map  
2015 NAIP Imagery



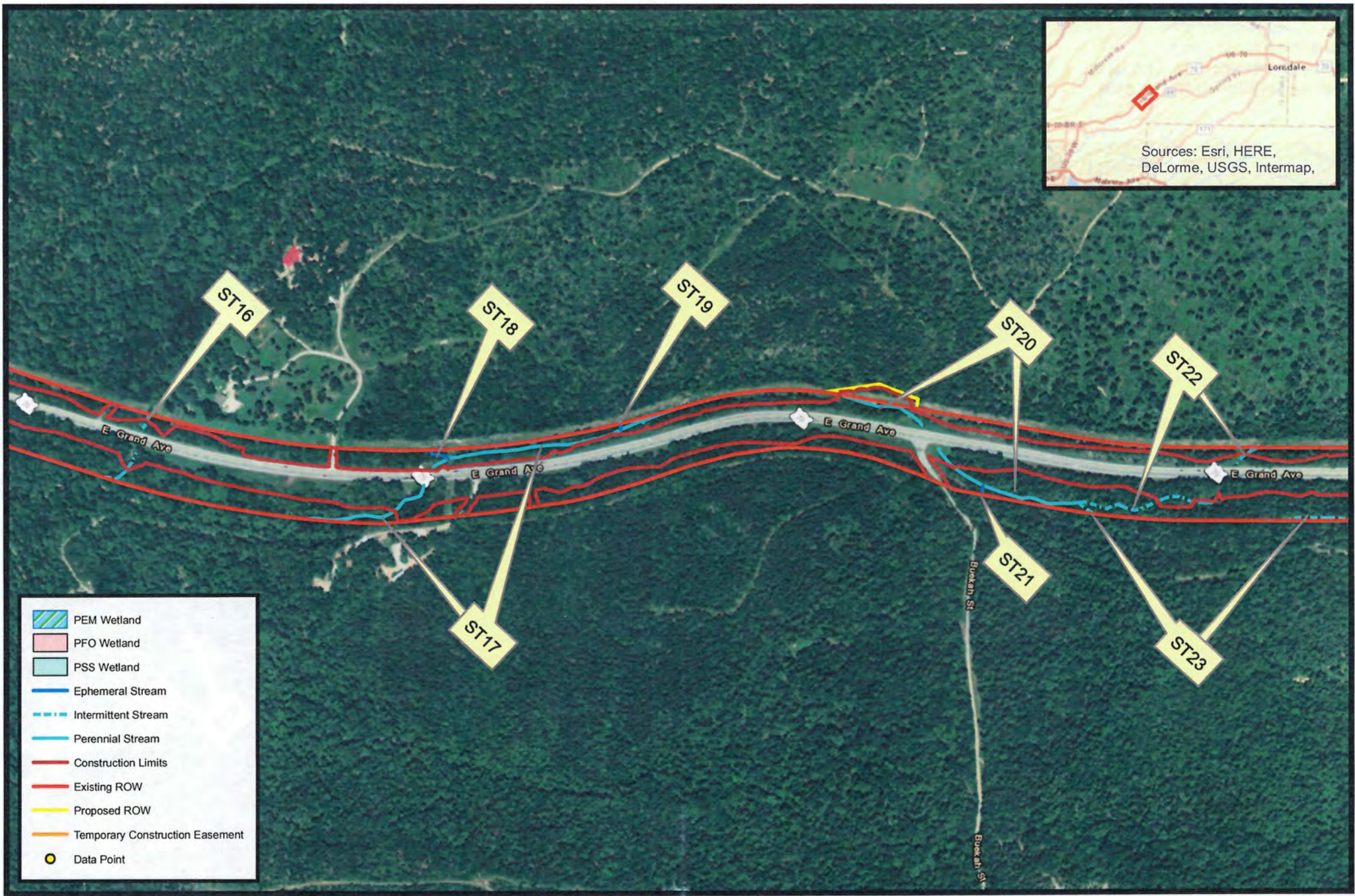


Figure 4d  
Wetland and Stream Location Map  
2015 NAIP Imagery



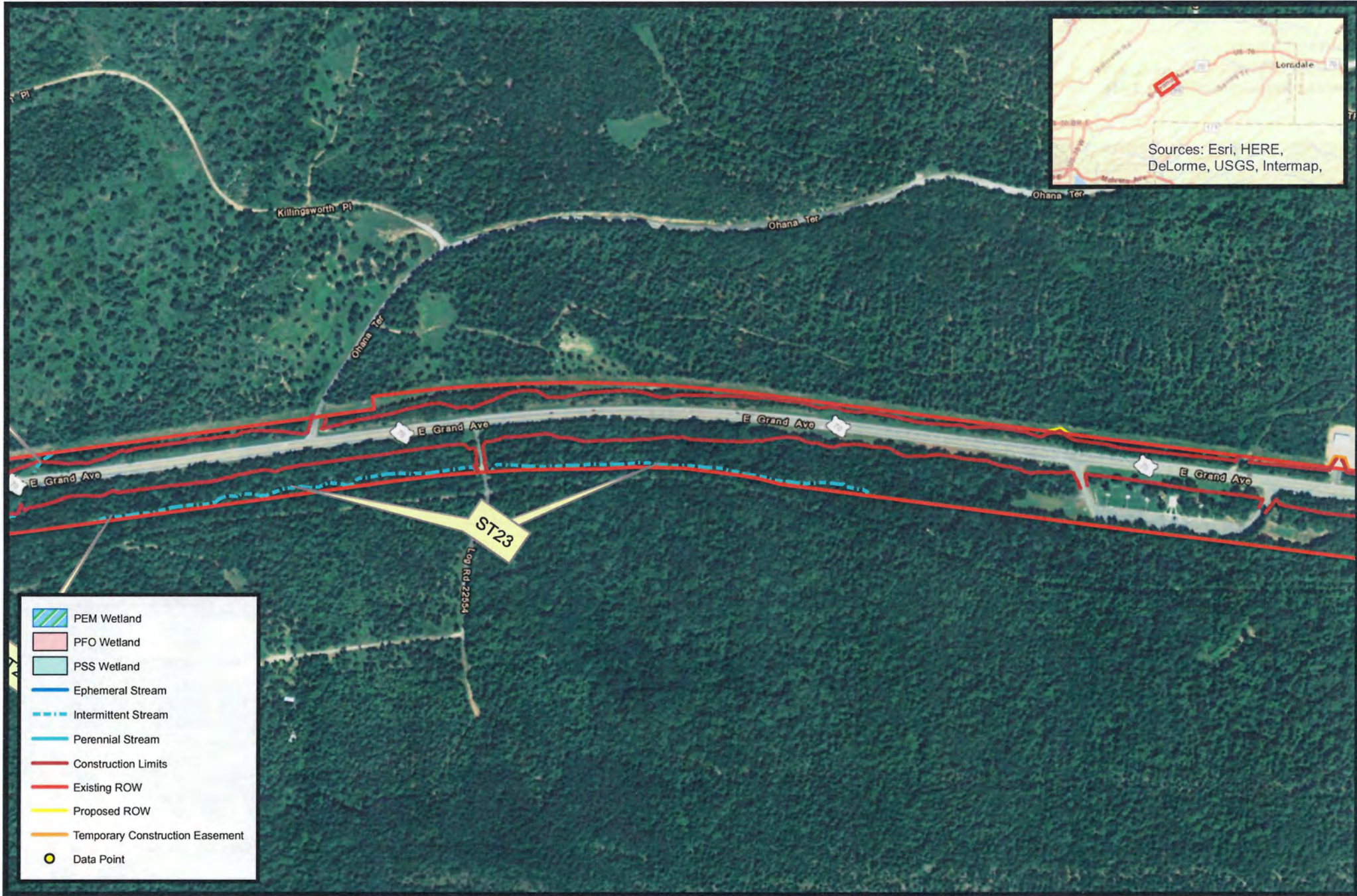
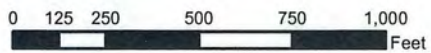


Figure 4e  
Wetland and Stream Location Map  
2015 NAIP Imagery





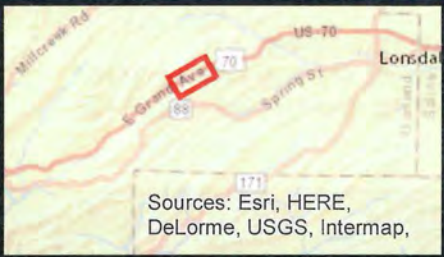
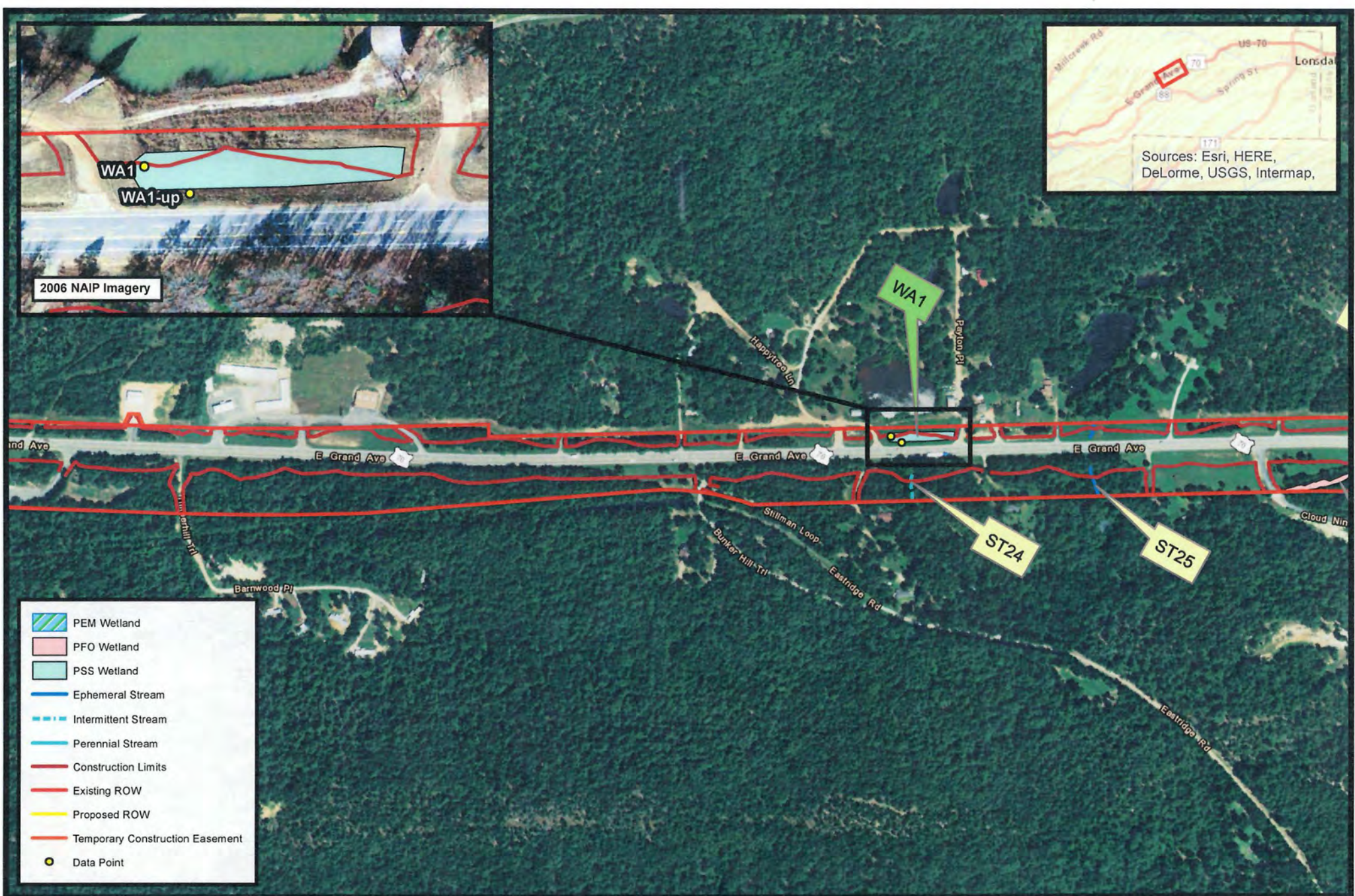
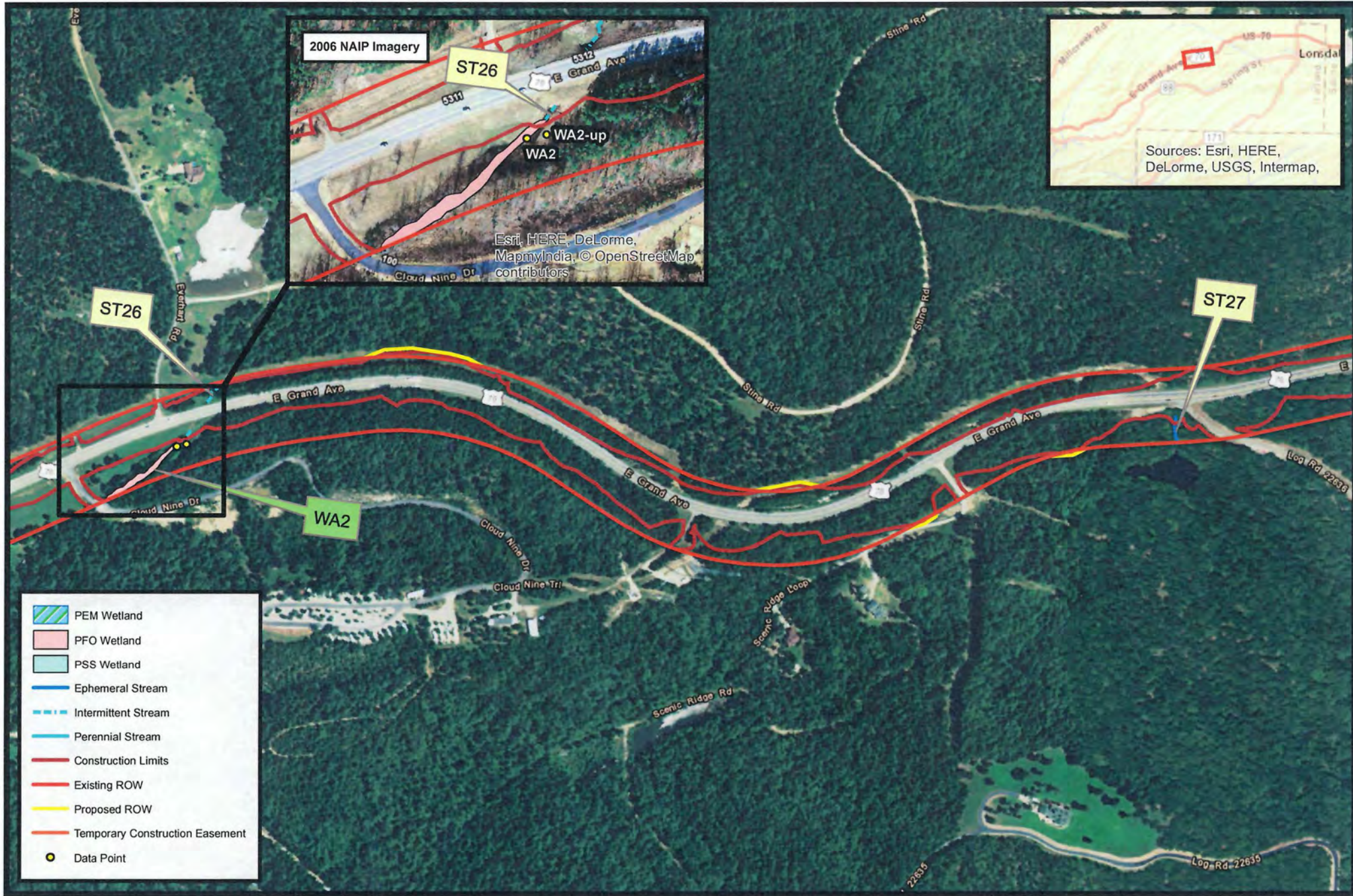


Figure 4f  
Wetland and Stream Location Map  
2015 NAIP Imagery

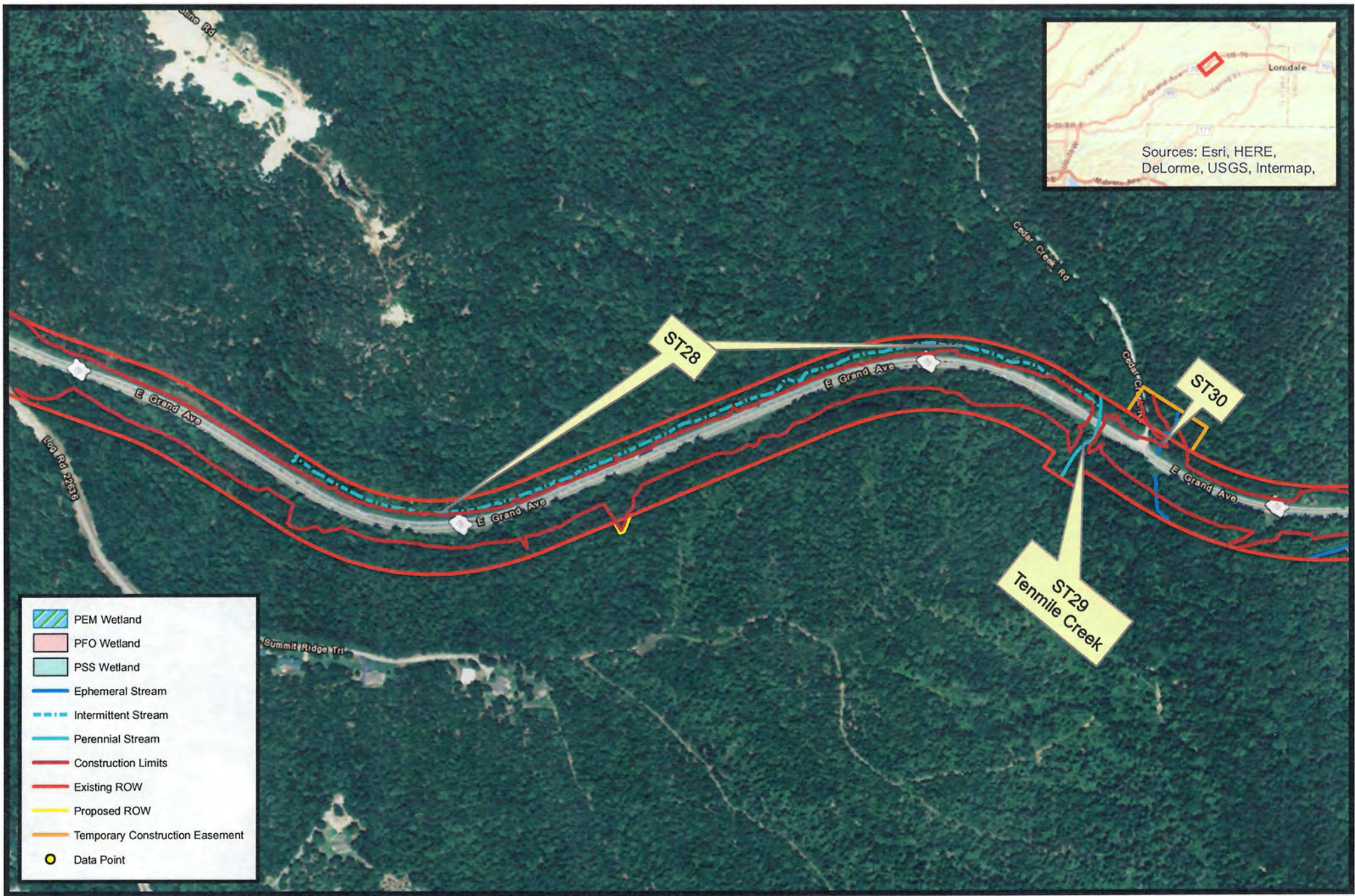















**Figure 4g**  
**Wetland and Stream Location Map**  
**2015 NAIP Imagery**







-  PEM Wetland
-  PFO Wetland
-  PSS Wetland
-  Ephemeral Stream
-  Intermittent Stream
-  Perennial Stream
-  Construction Limits
-  Existing ROW
-  Proposed ROW
-  Temporary Construction Easement
-  Data Point

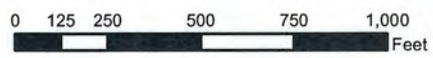


Figure 4h  
Wetland and Stream Location Map  
2015 NAIP Imagery



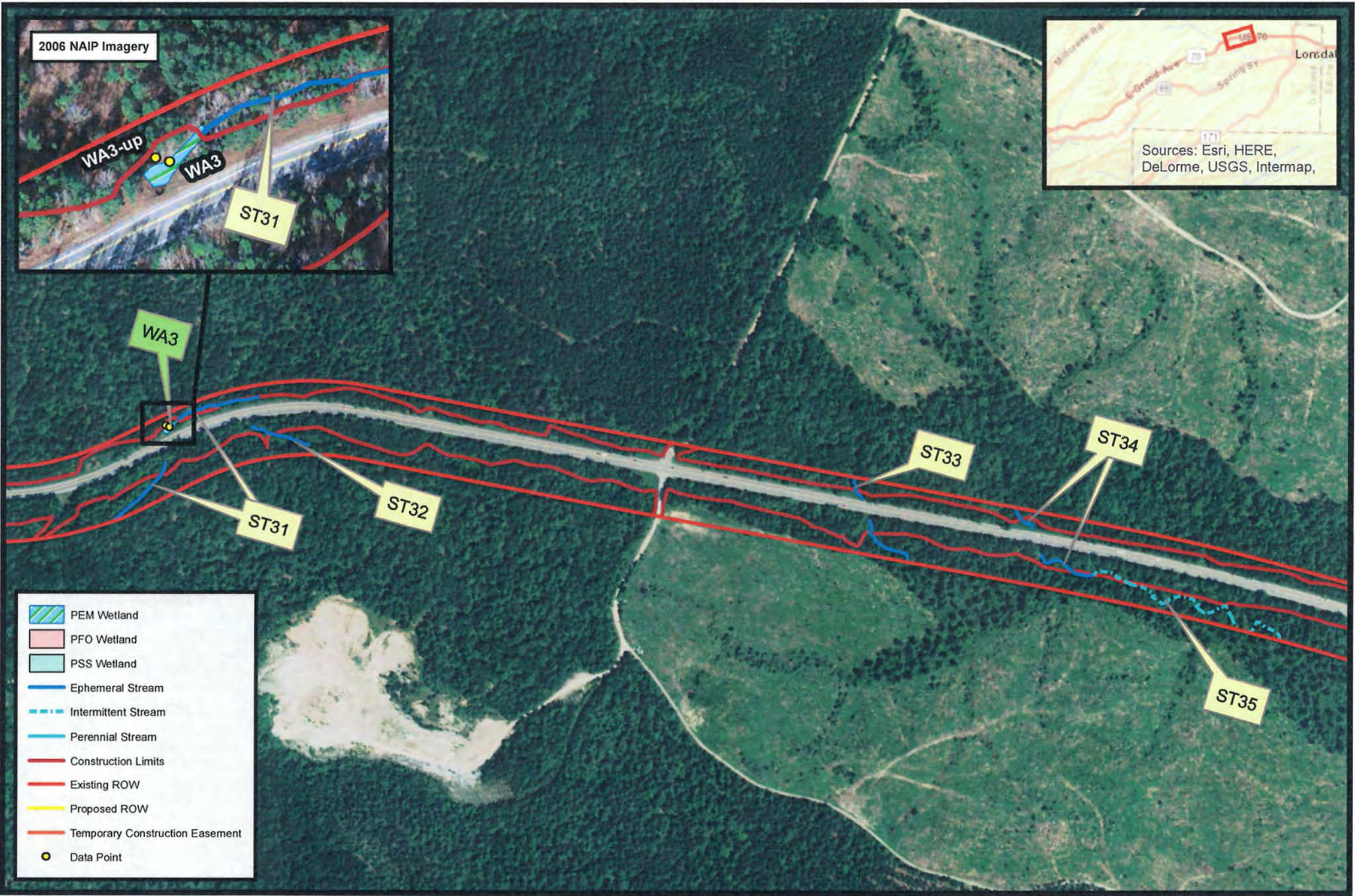


Figure 4i  
 Wetland and Stream Location Map  
 2015 NAIP Imagery

Hwy 70 Improvements Project  
 AHTD Project Number CA0606  
 Garland County



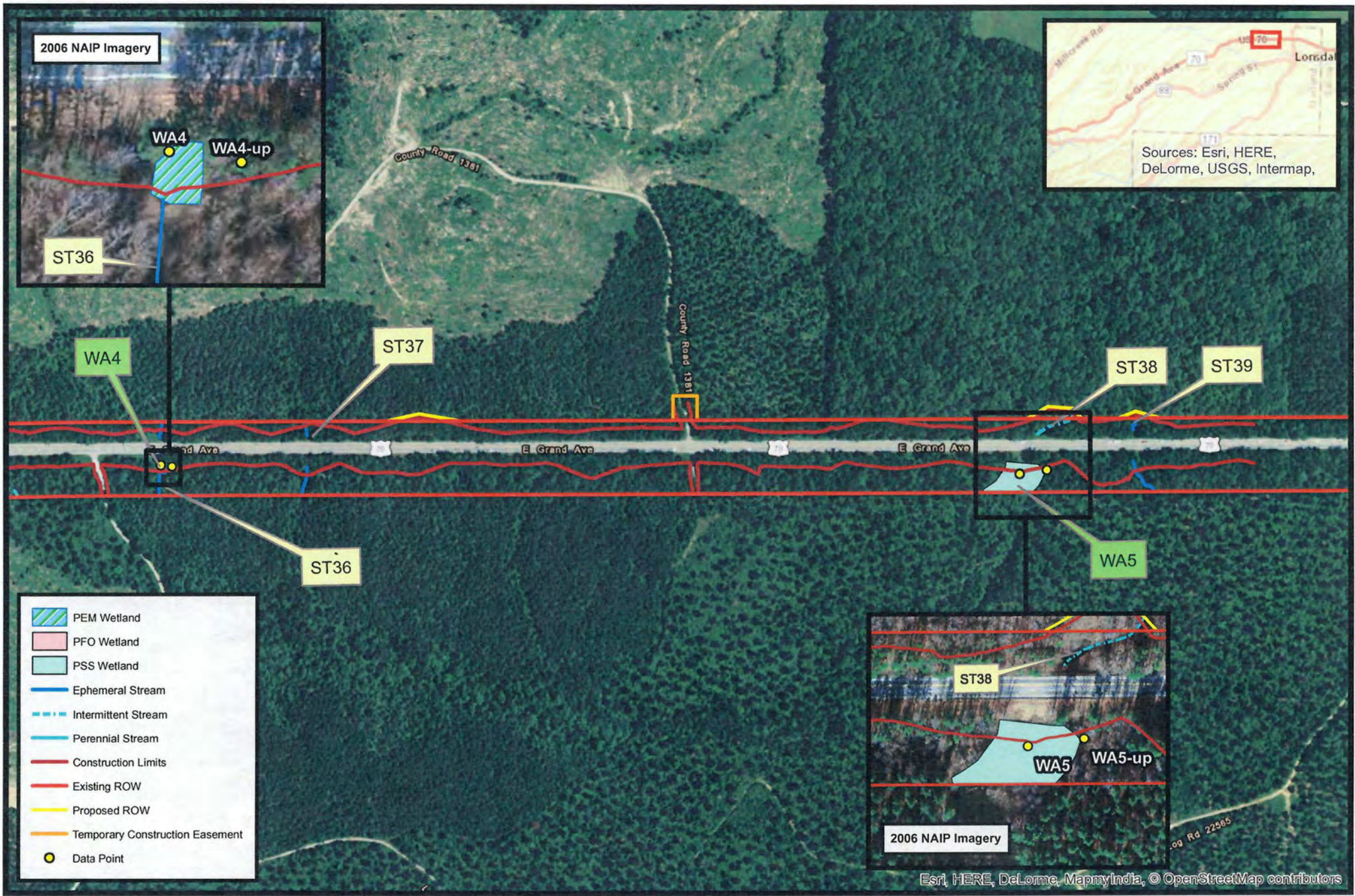


Figure 4j  
Wetland and Stream Location Map  
2015 NAIP Imagery





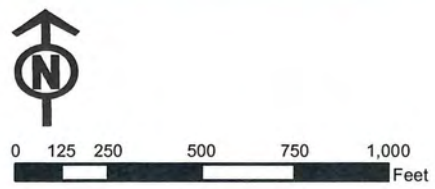
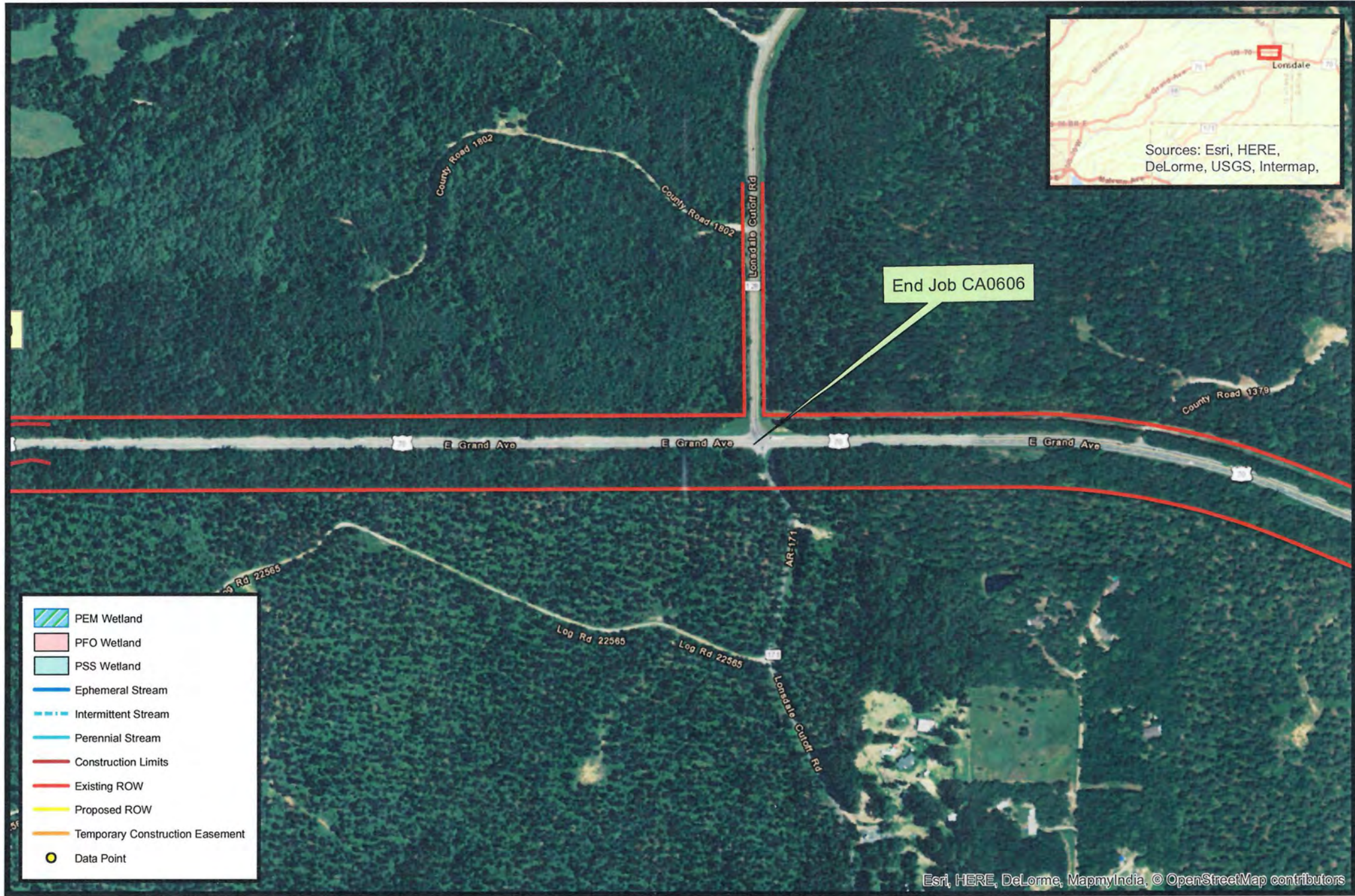
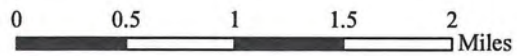
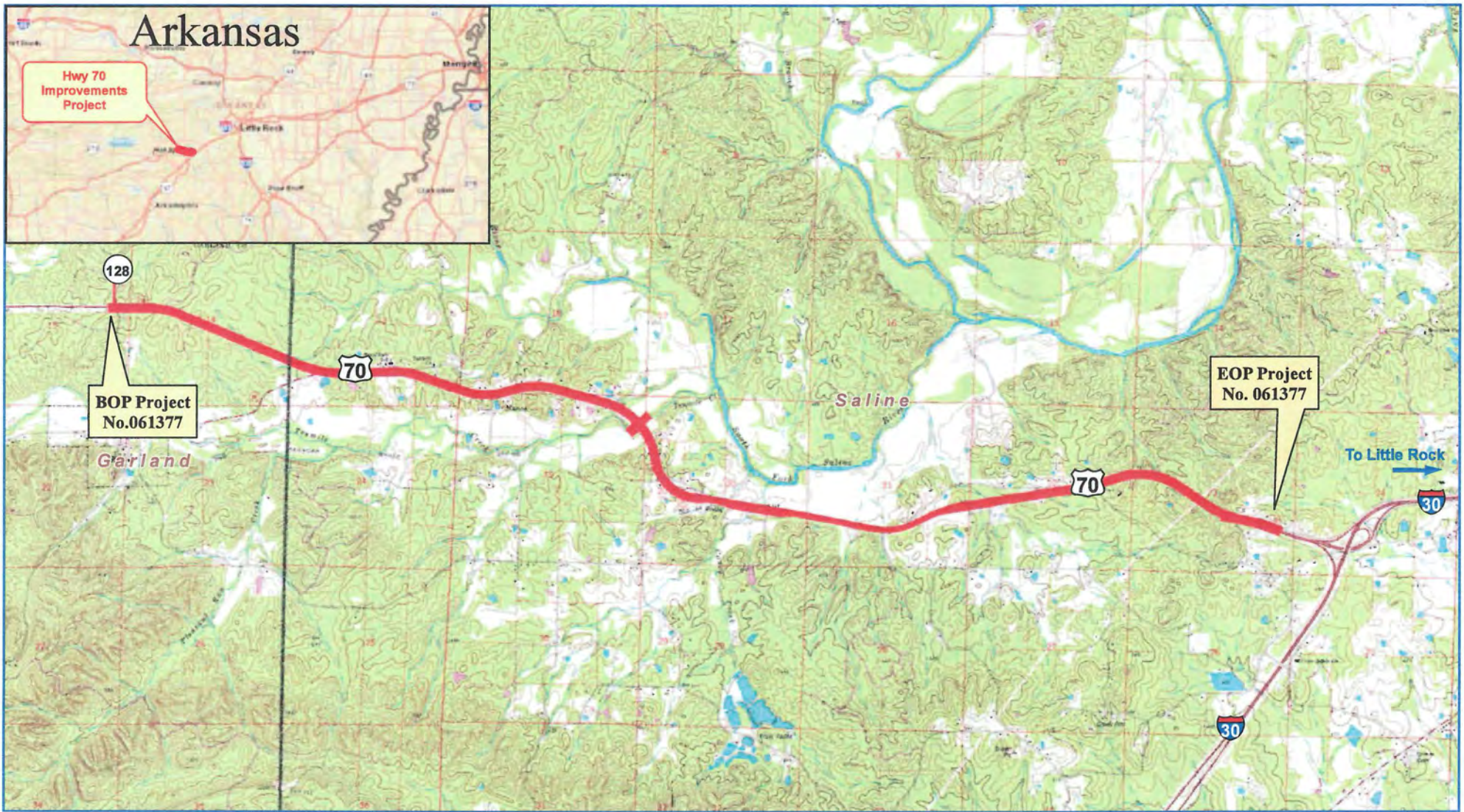


Figure 4k  
Wetland and Stream Location Map  
2015 NAIP Imagery





May 2014

**AHTD CAP Job No. 061377  
Hwy 70 Improvements Project  
Garland and Saline Counties**

 Project Location

USGS Topographic Maps:  
Fountain Lake, Lonsdale, and Haskell 1988



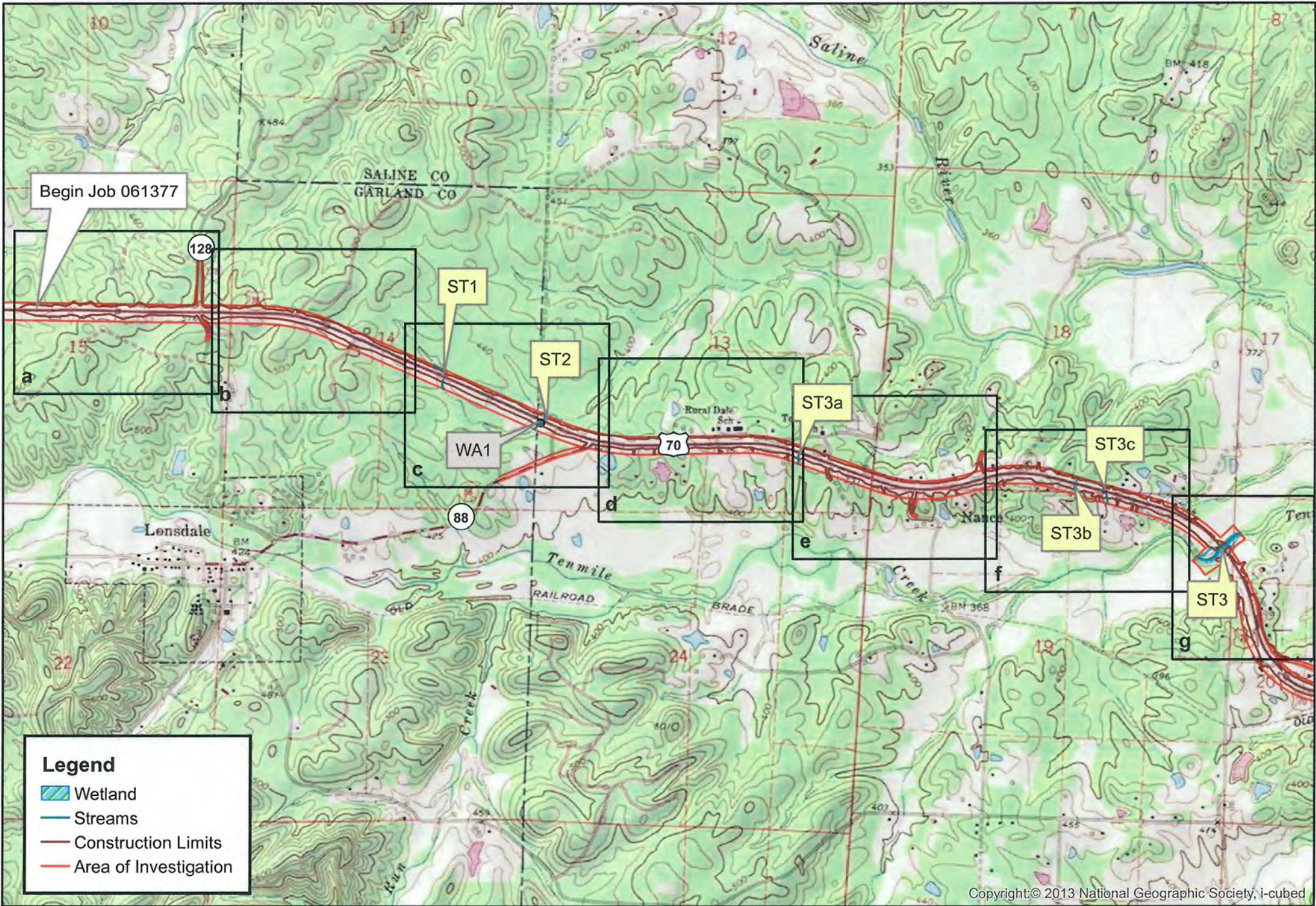


Figure 1a  
USGS Topographic Map



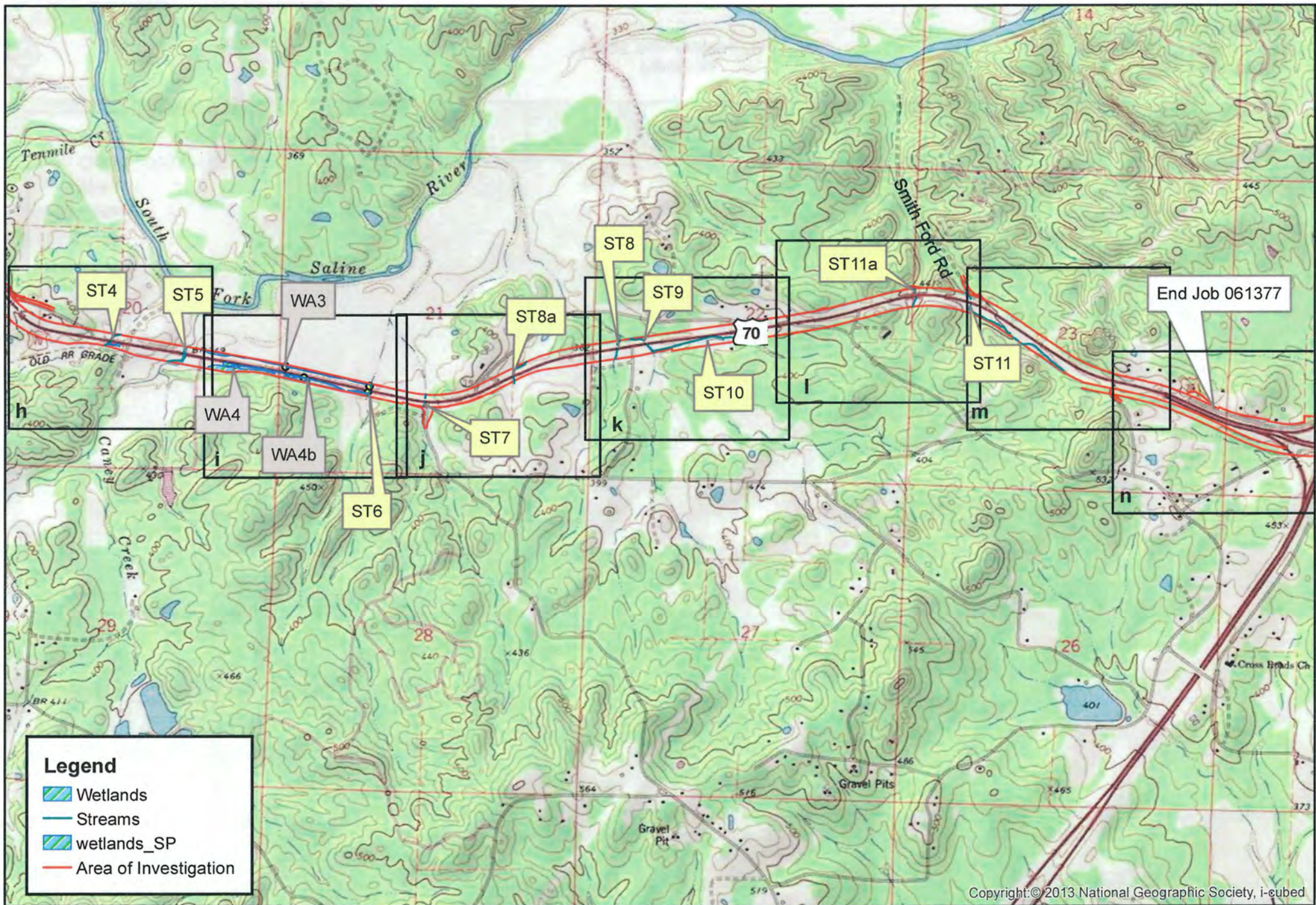
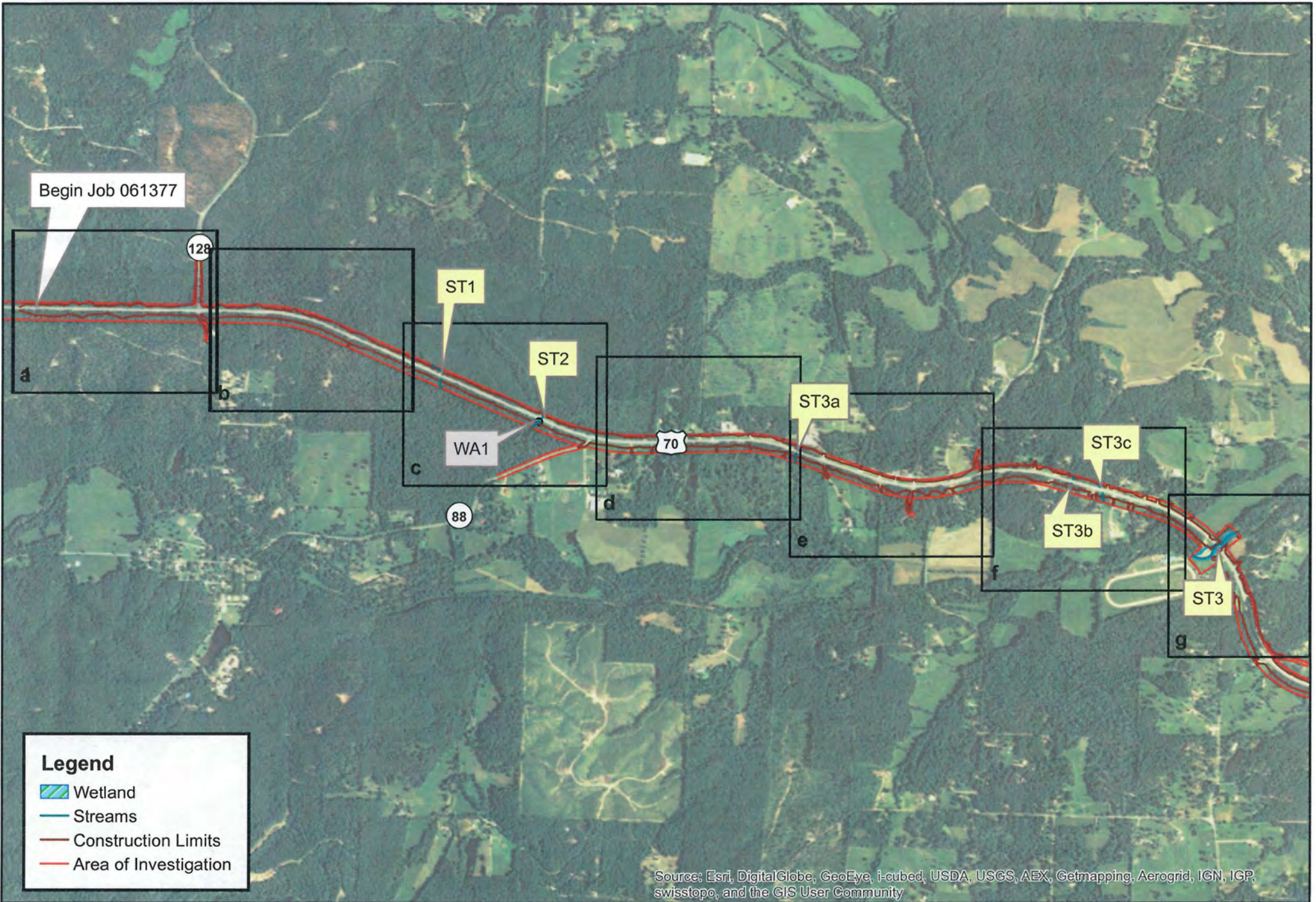
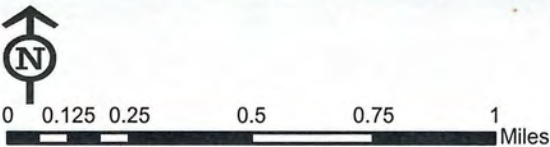


Figure 1b  
USGS Topographic Map





Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Figure 2a**  
Aerial View



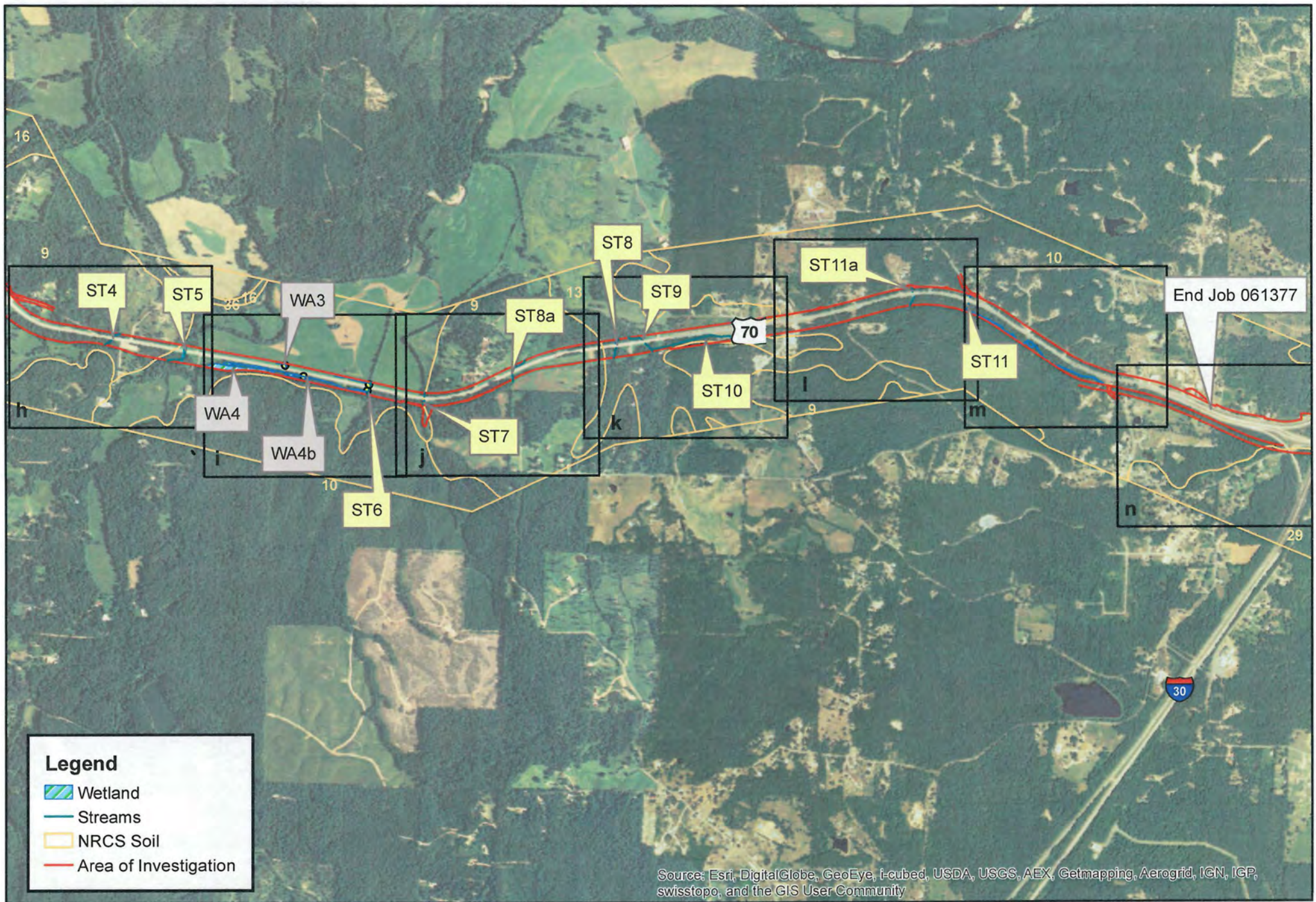
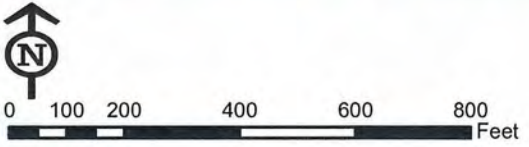


Figure 3b  
Soil Map

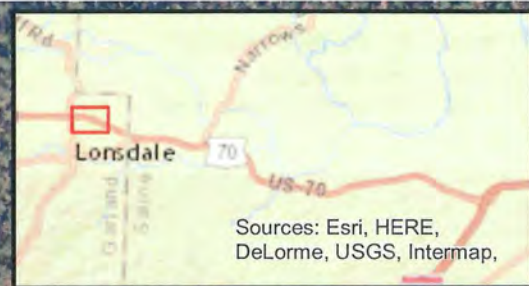
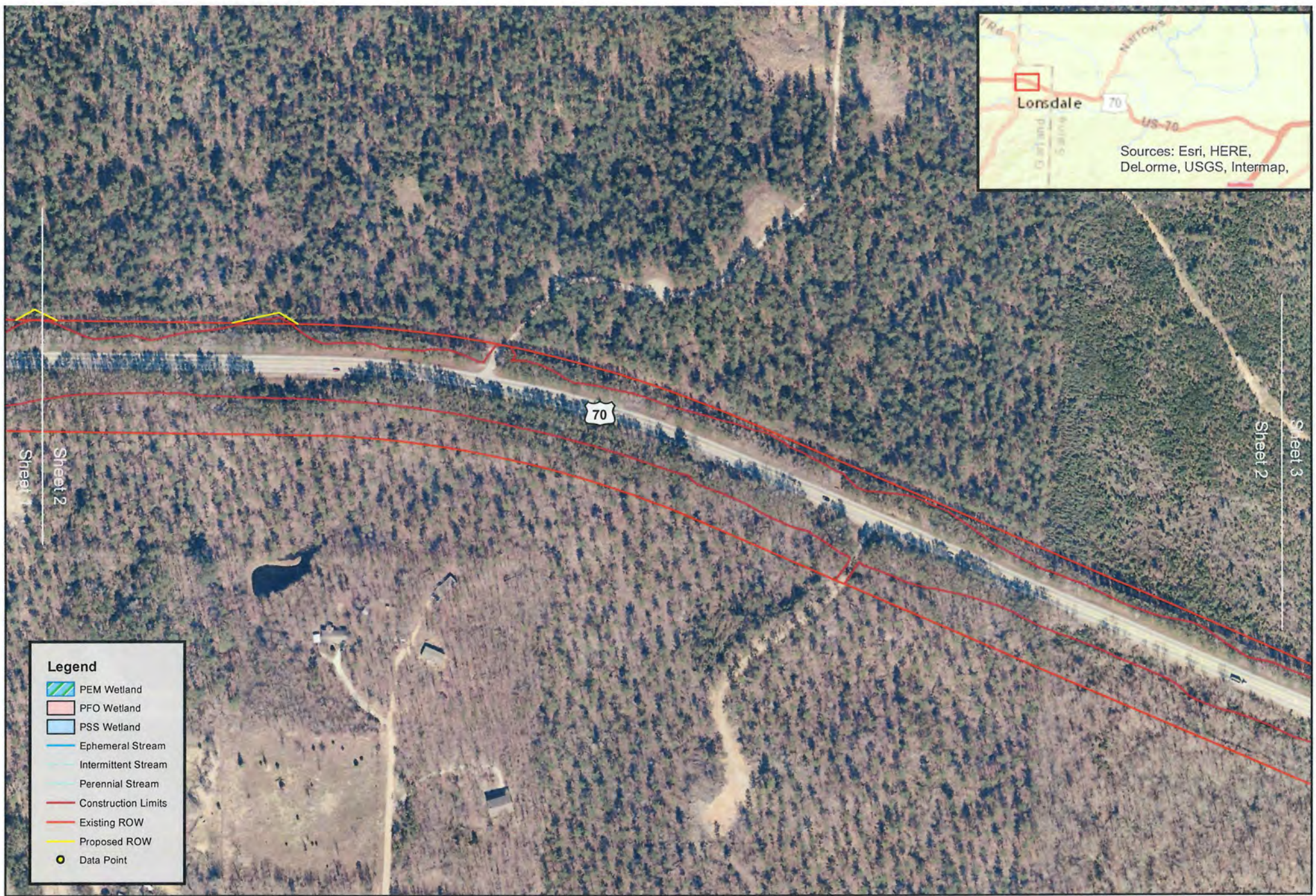




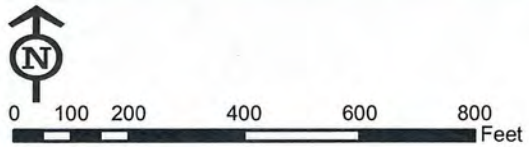
Figure 4a  
Wetland and Stream Location Map







- Legend**
- PEM Wetland
  - PFO Wetland
  - PSS Wetland
  - Ephemeral Stream
  - Intermittent Stream
  - Perennial Stream
  - Construction Limits
  - Existing ROW
  - Proposed ROW
  - Data Point

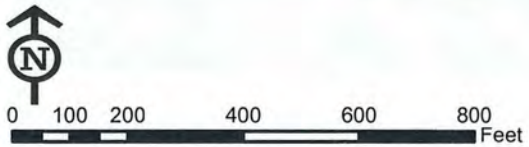


**Figure 4b**  
**Wetland and Stream Location Map**

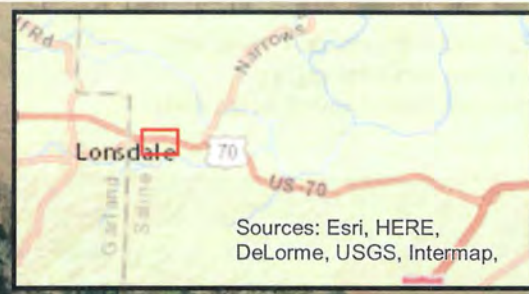




**Figure 4c**  
Wetland and Stream Location Map







ST3a  
Impacted: 26 linear feet

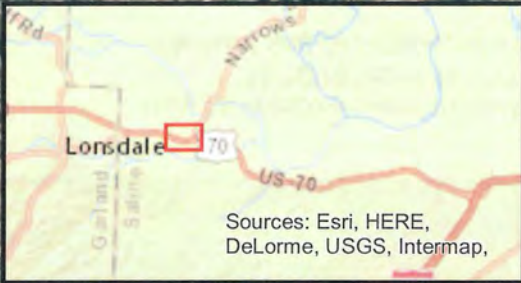
ST3a  
Impacted: 48 linear feet

- Legend**
- PEM Wetland
  - PFO Wetland
  - PSS Wetland
  - Ephemeral Stream
  - Intermittent Stream
  - Perennial Stream
  - Construction Limits
  - Existing ROW
  - Proposed ROW
  - Data Point



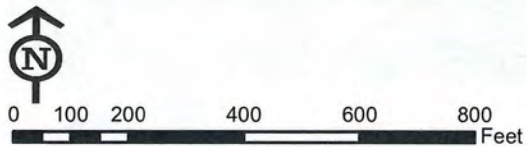
**Figure 4d**  
**Wetland and Stream Location Map**





**Legend**

- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Construction Limits
- Existing ROW
- Proposed ROW
- Data Point



**Figure 4e**  
Wetland and Stream Location Map





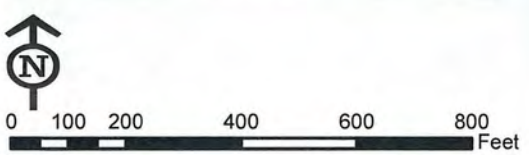
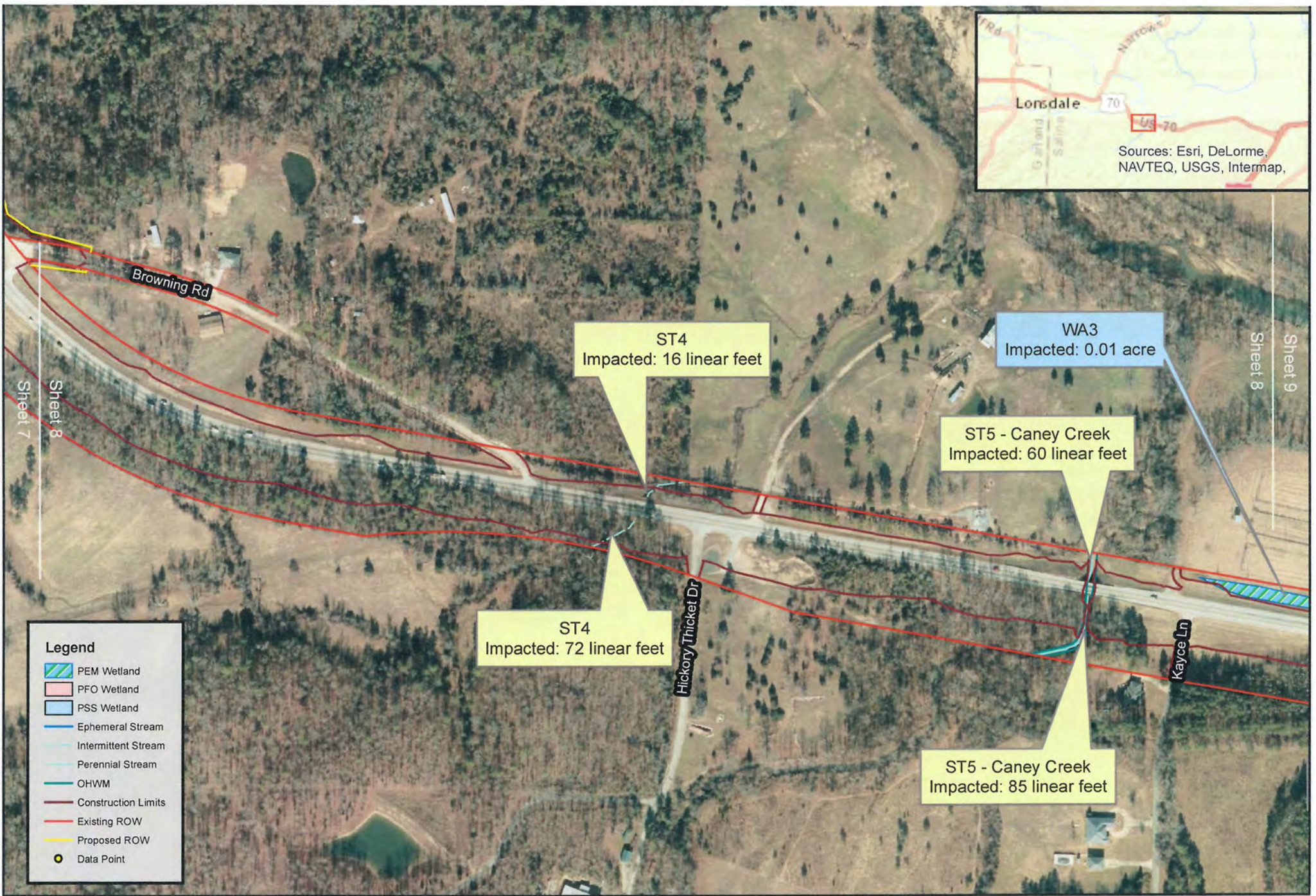
**Figure 4f**  
**Wetland and Stream Location Map**





**Figure 4g**  
**Wetland and Stream Location Map**





**Figure 4h**  
Wetland and Stream Location Map



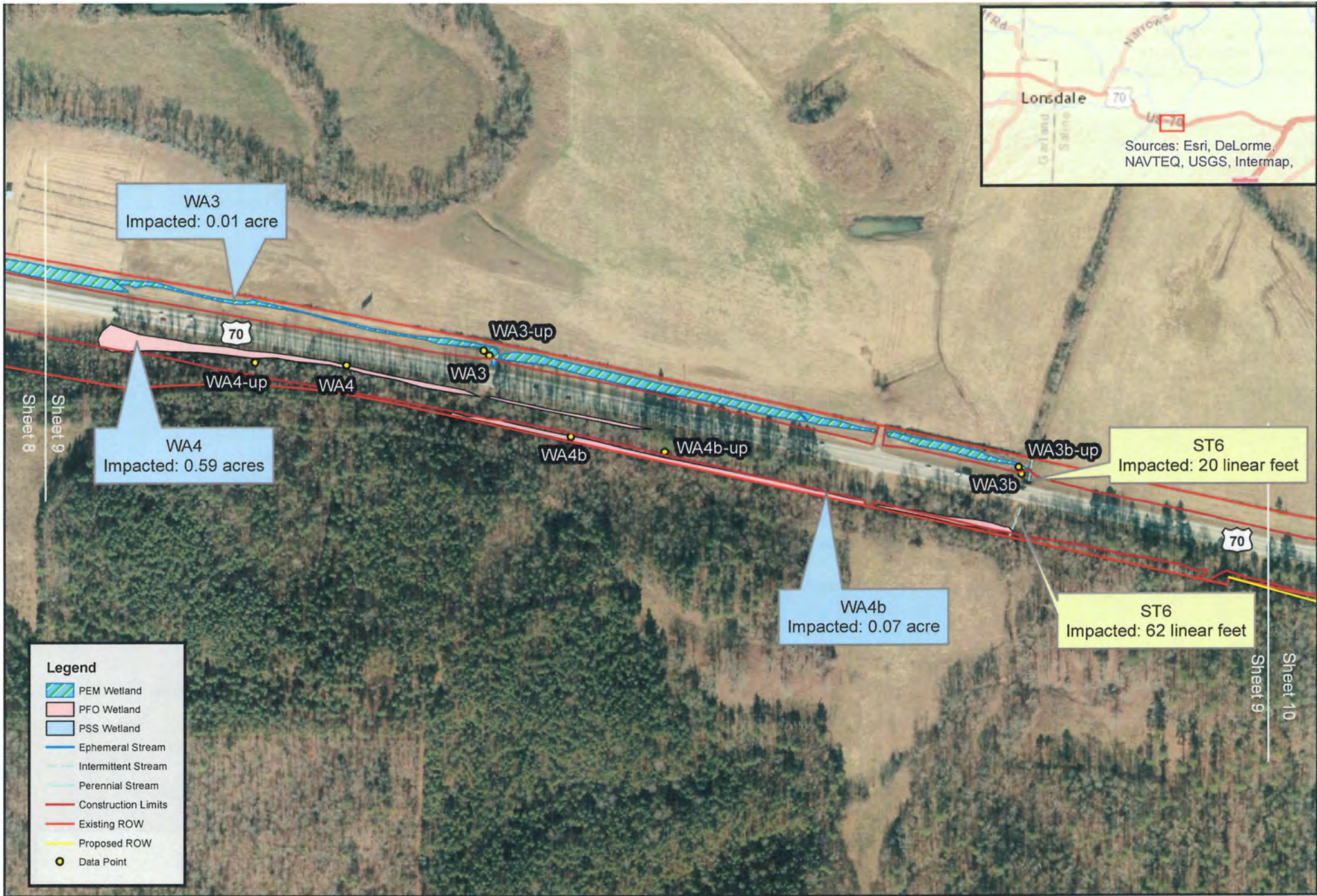
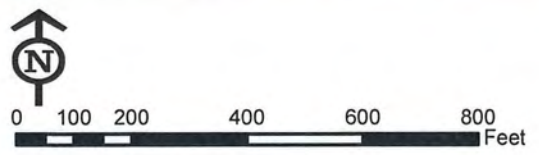
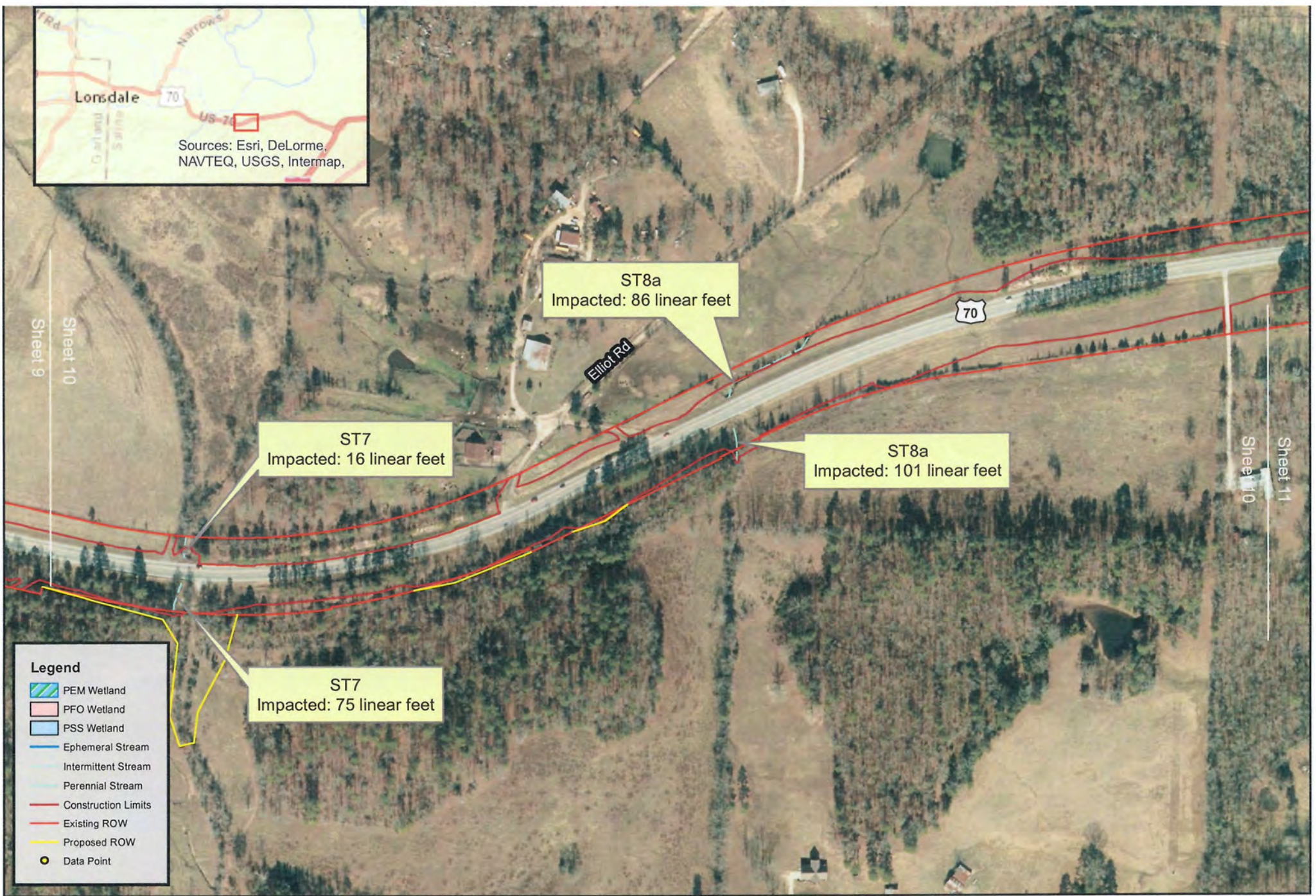


Figure 4i  
Wetland and Stream Location Map







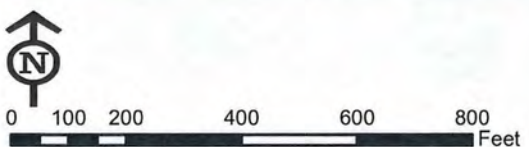
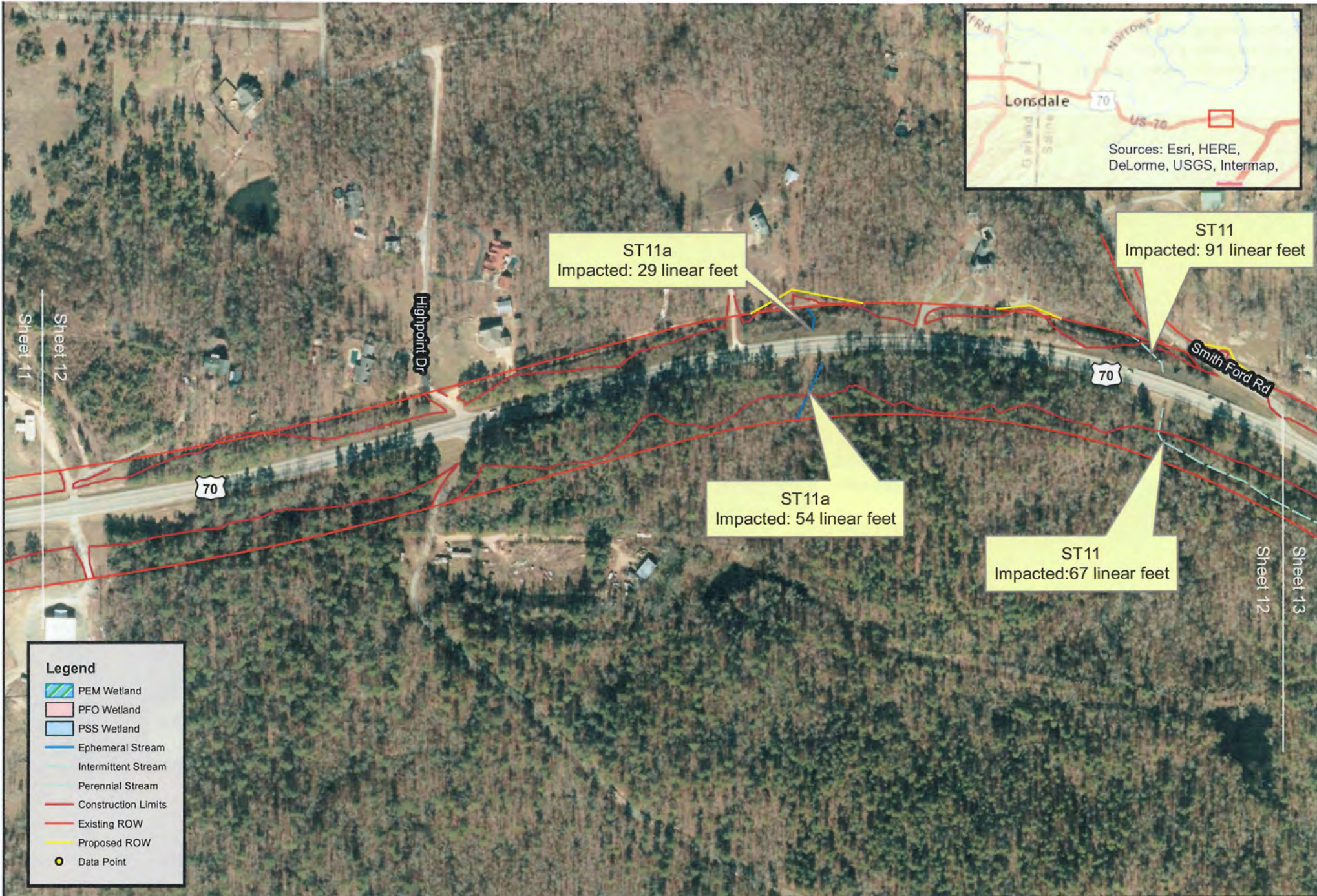
**Figure 4j**  
Wetland and Stream Location Map





**Figure 4k**  
**Wetland and Stream Location Map**





**Figure 4I**  
**Wetland and Stream Location Map**



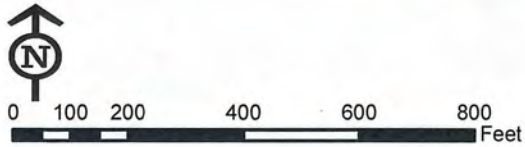


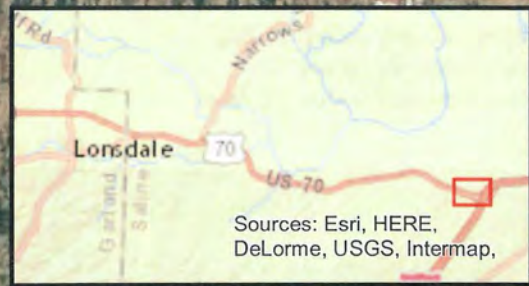
Figure 4m  
Wetland and Stream Location Map





End Job 061377

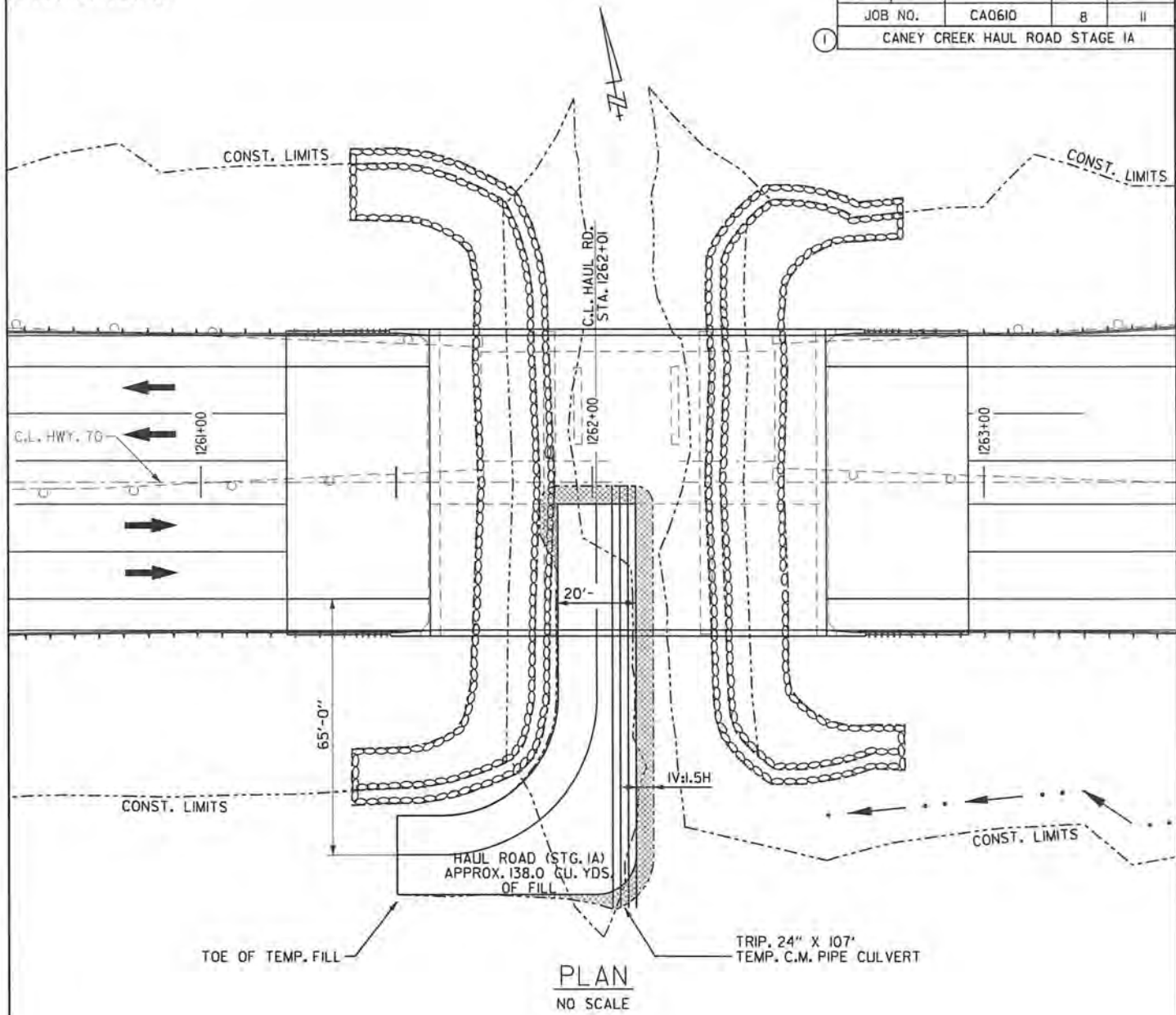
- Legend**
- PEM Wetland
  - PFO Wetland
  - PSS Wetland
  - Ephemeral Stream
  - Intermittent Stream
  - Perennial Stream
  - Construction Limits
  - Existing ROW
  - Proposed ROW
  - Data Point



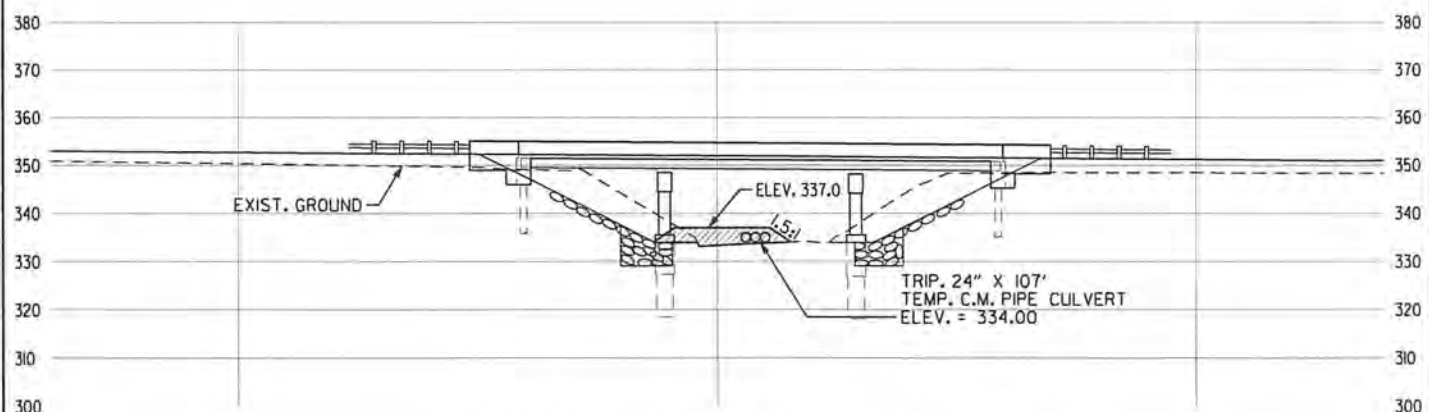
**Figure 4n**  
Wetland and Stream Location Map



FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.	CA0610	8	11	
① CANEY CREEK HAUL ROAD STAGE IA				



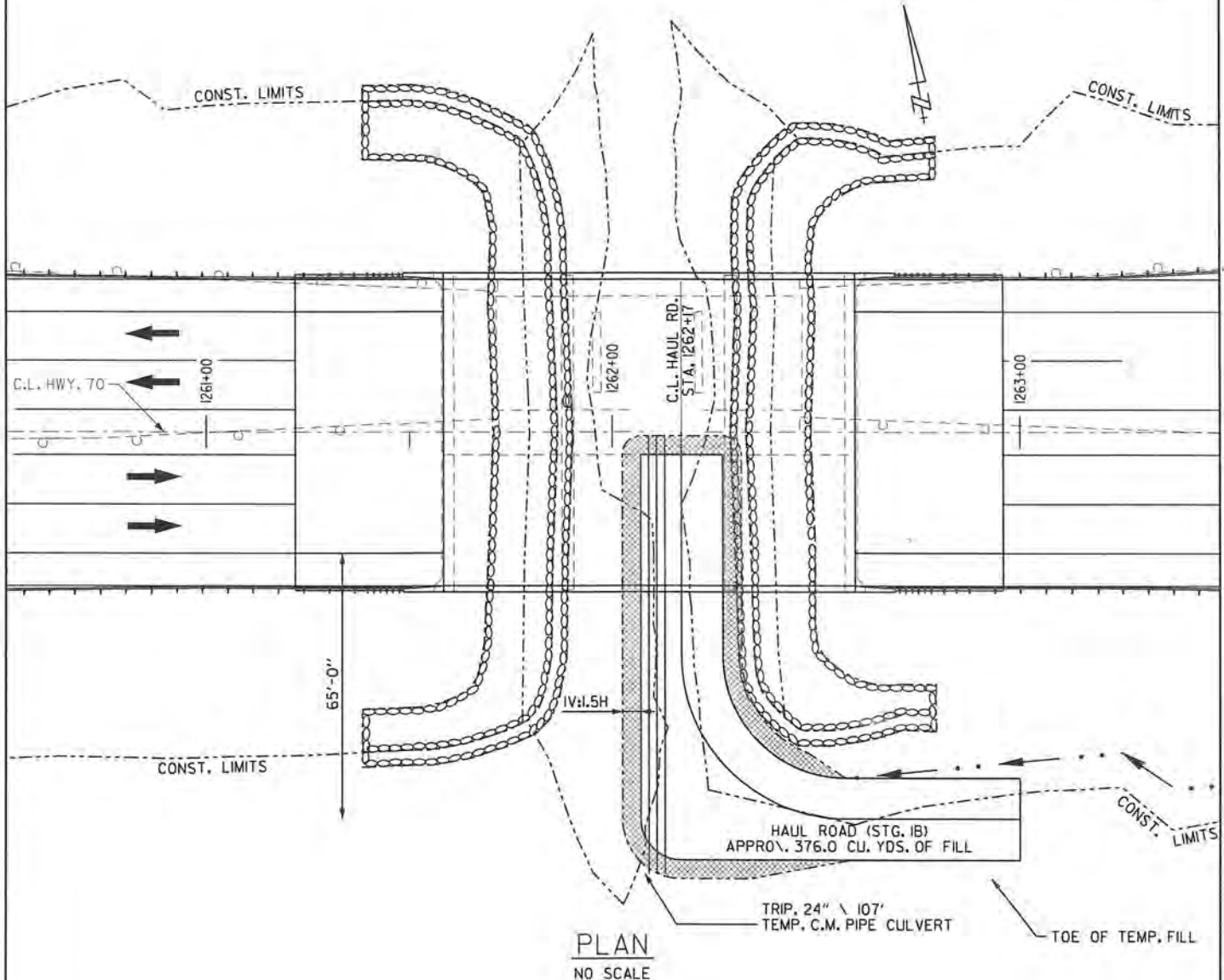
PLAN  
NO SCALE



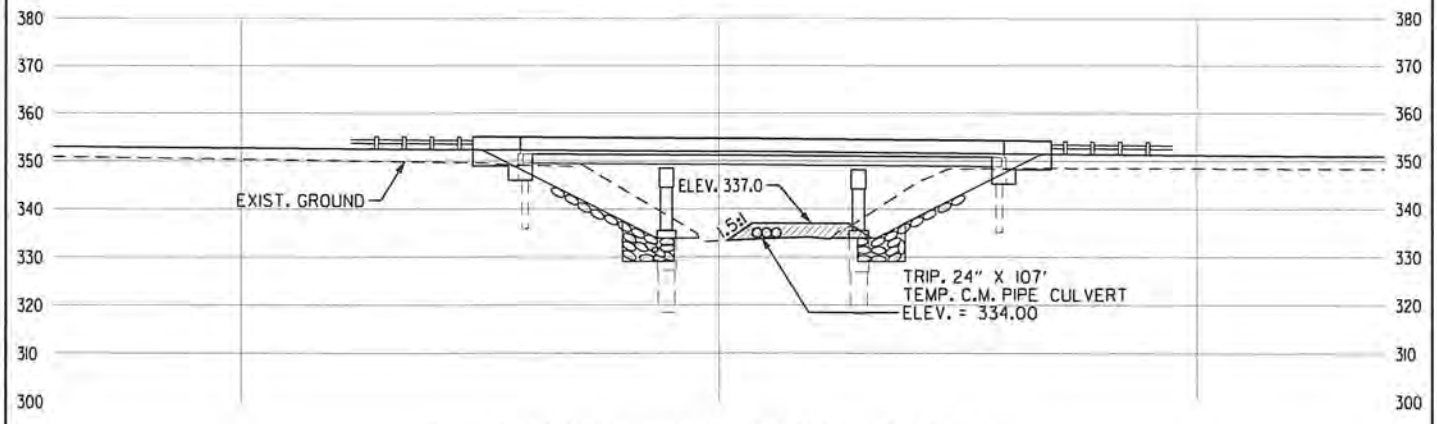
ELEVATION (HAUL ROAD STG. IA)  
NO SCALE



FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0610	9	11
① CANEY CREEK HAUL ROAD STAGE IB.				



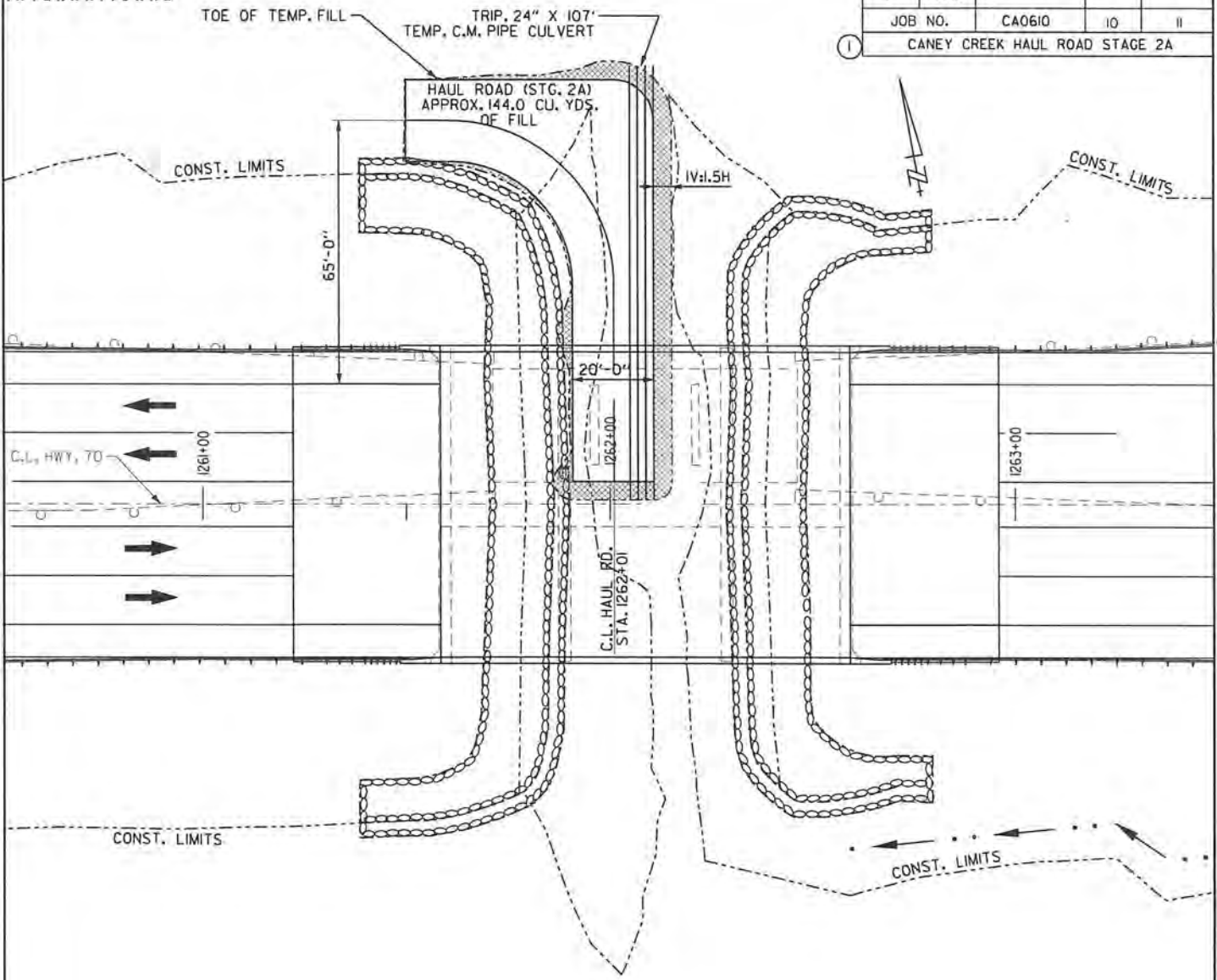
**PLAN**  
NO SCALE



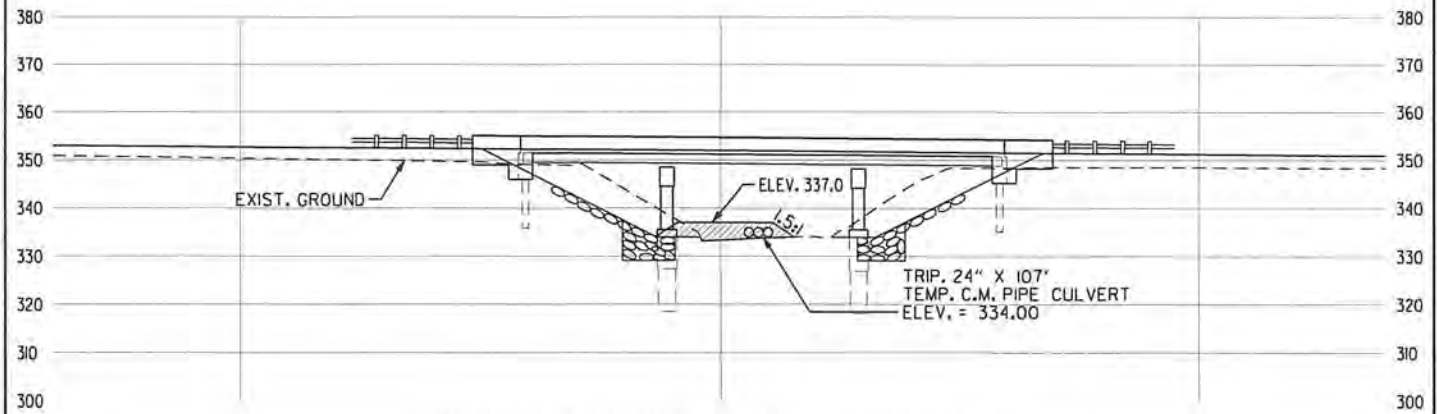
**ELEVATION (HAUL ROAD STG. IB)**  
NO SCALE



FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0610	10	11
① CANEY CREEK HAUL ROAD STAGE 2A				



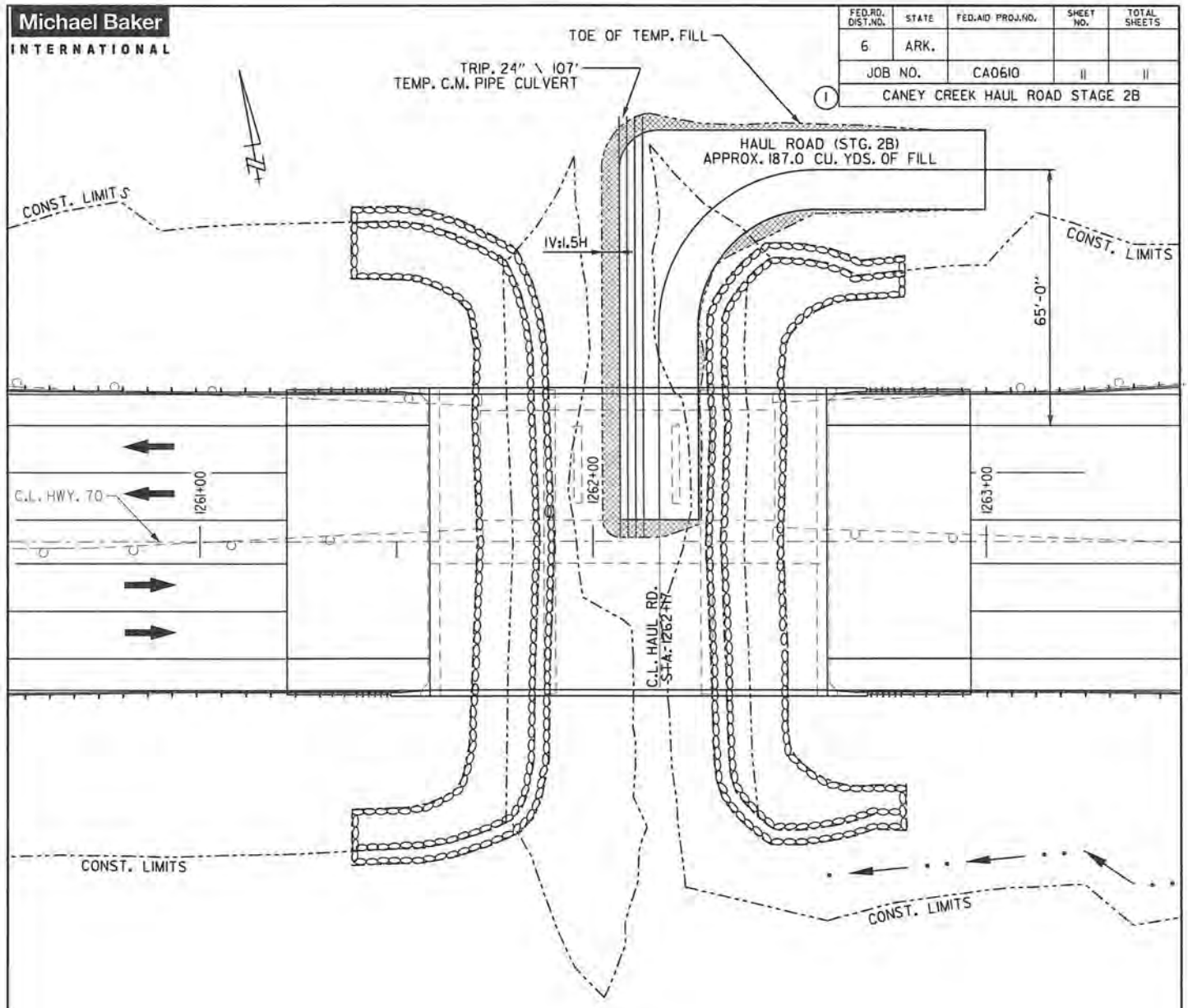
PLAN  
NO SCALE



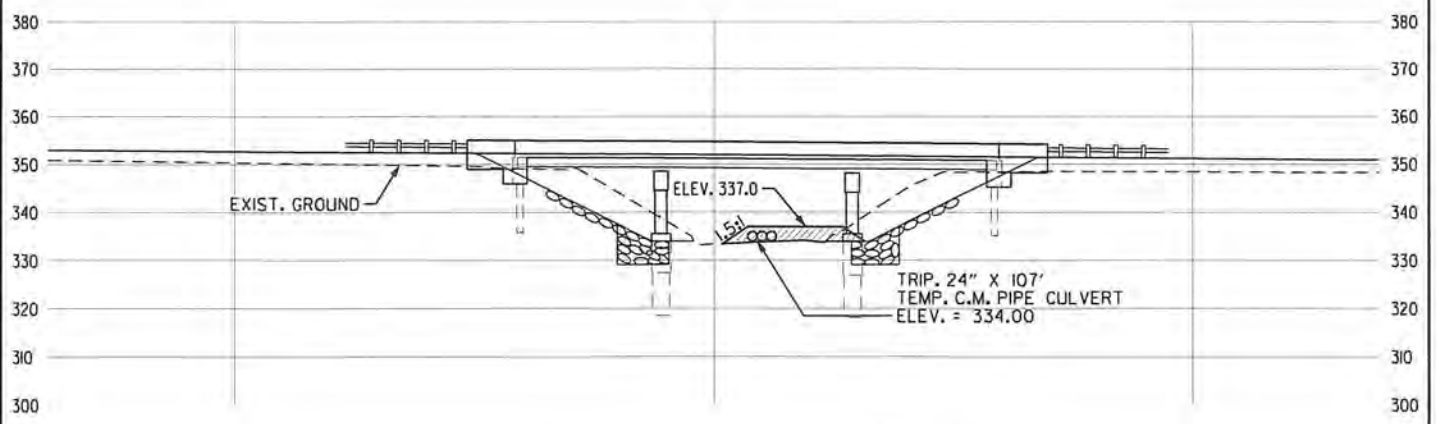
ELEVATION (HAUL ROAD STG. 2A)  
NO SCALE



FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0610	II	II
CANEY CREEK HAUL ROAD STAGE 2B				



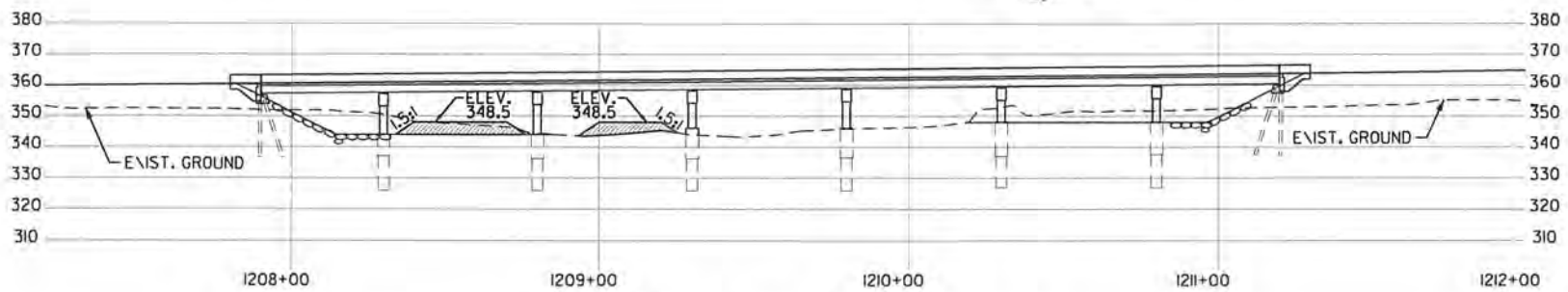
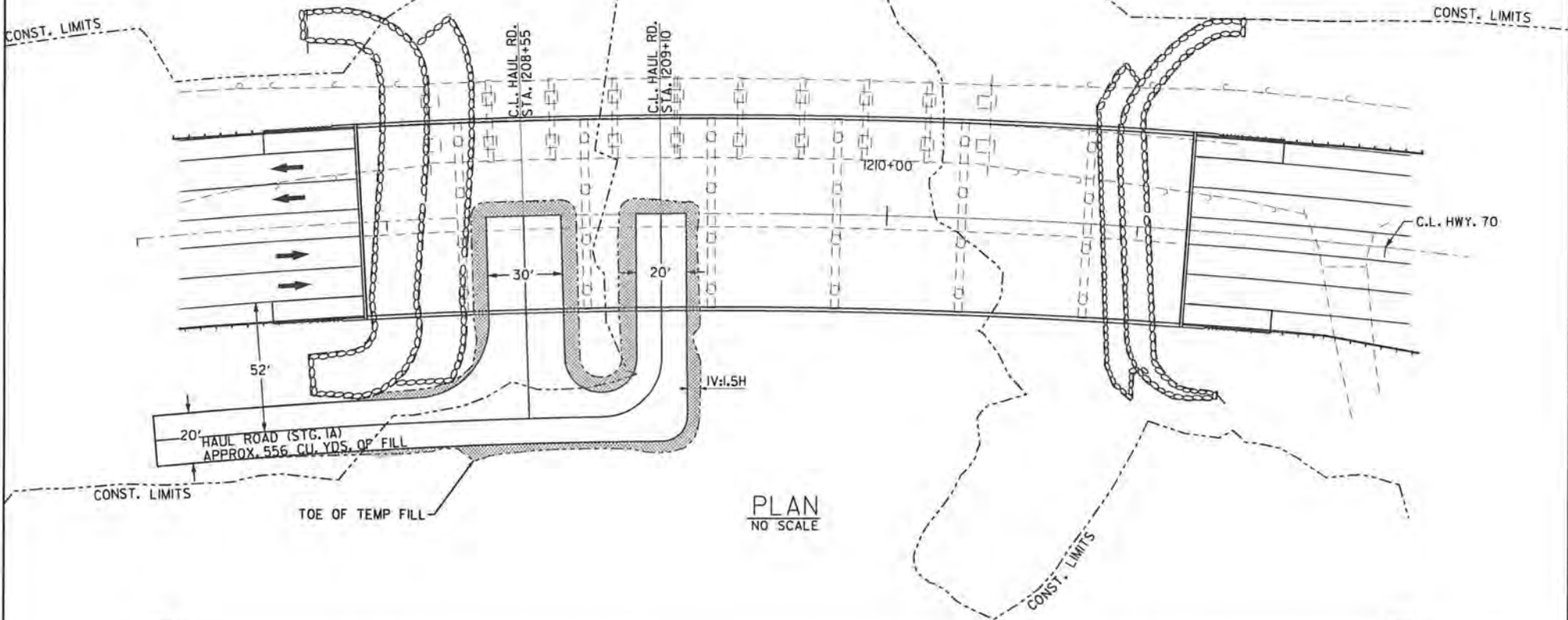
PLAN  
NO SCALE



ELEVATION (HAUL ROAD STG. 2B)  
NO SCALE



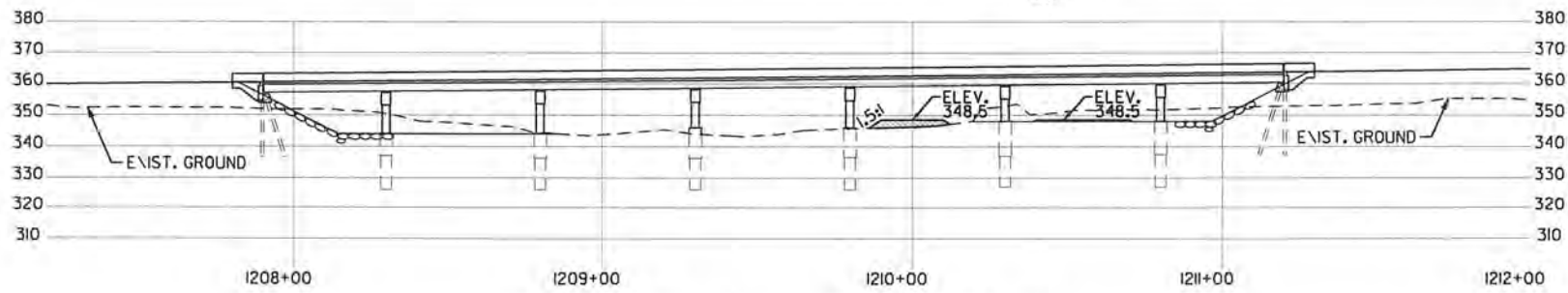
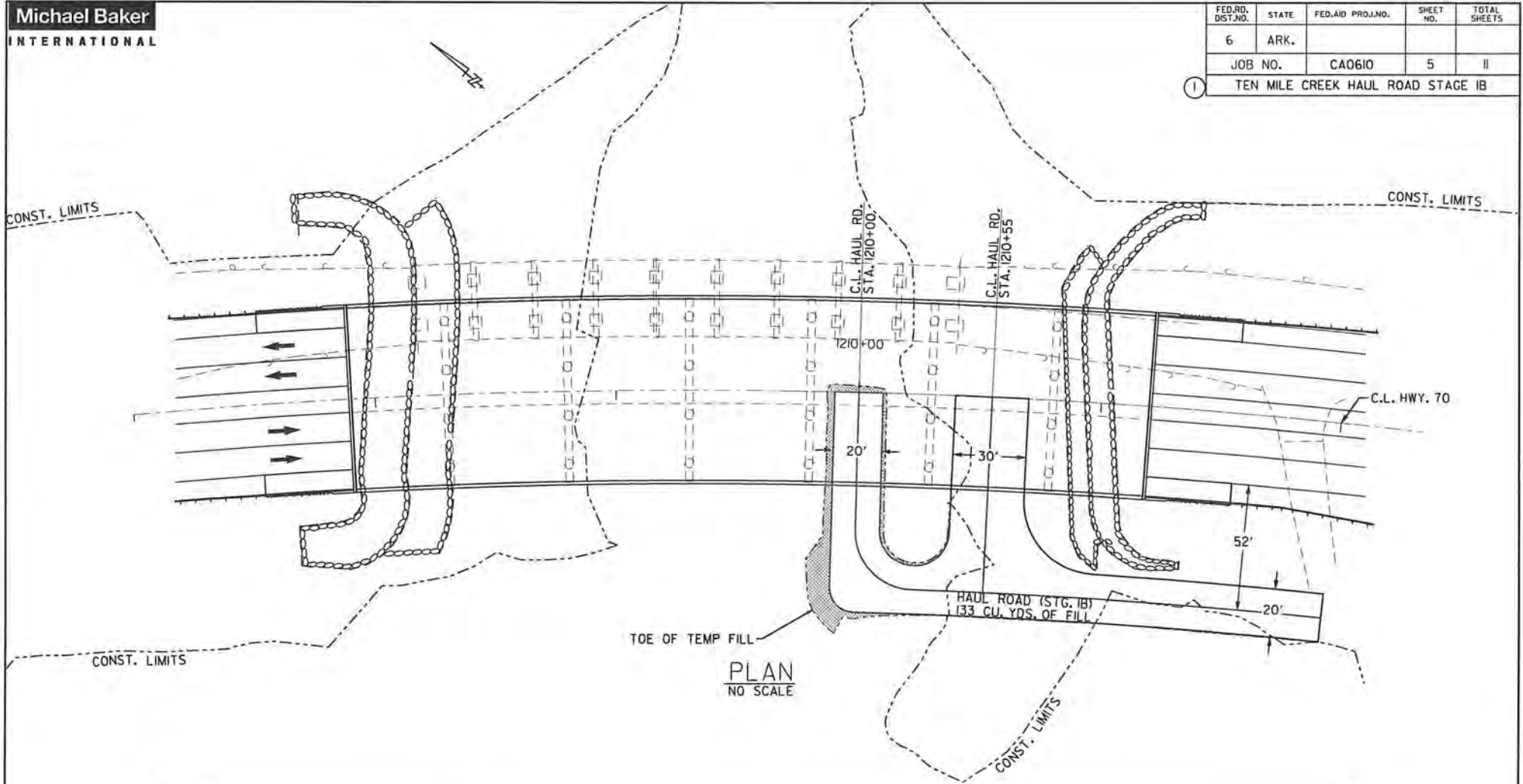
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0610	4	11
① TEN MILE CREEK HAUL ROAD STAGE 1A				



**ELEVATION (HAUL ROAD STG. 1A)**  
NO SCALE

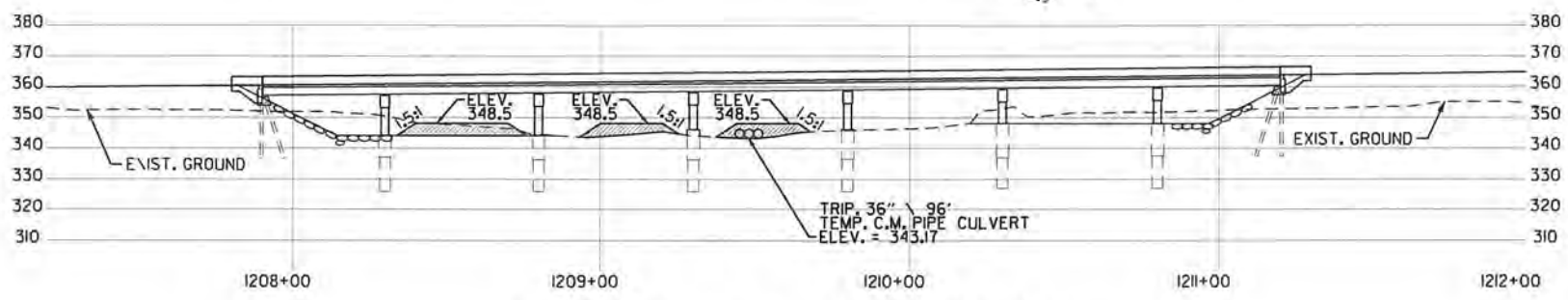
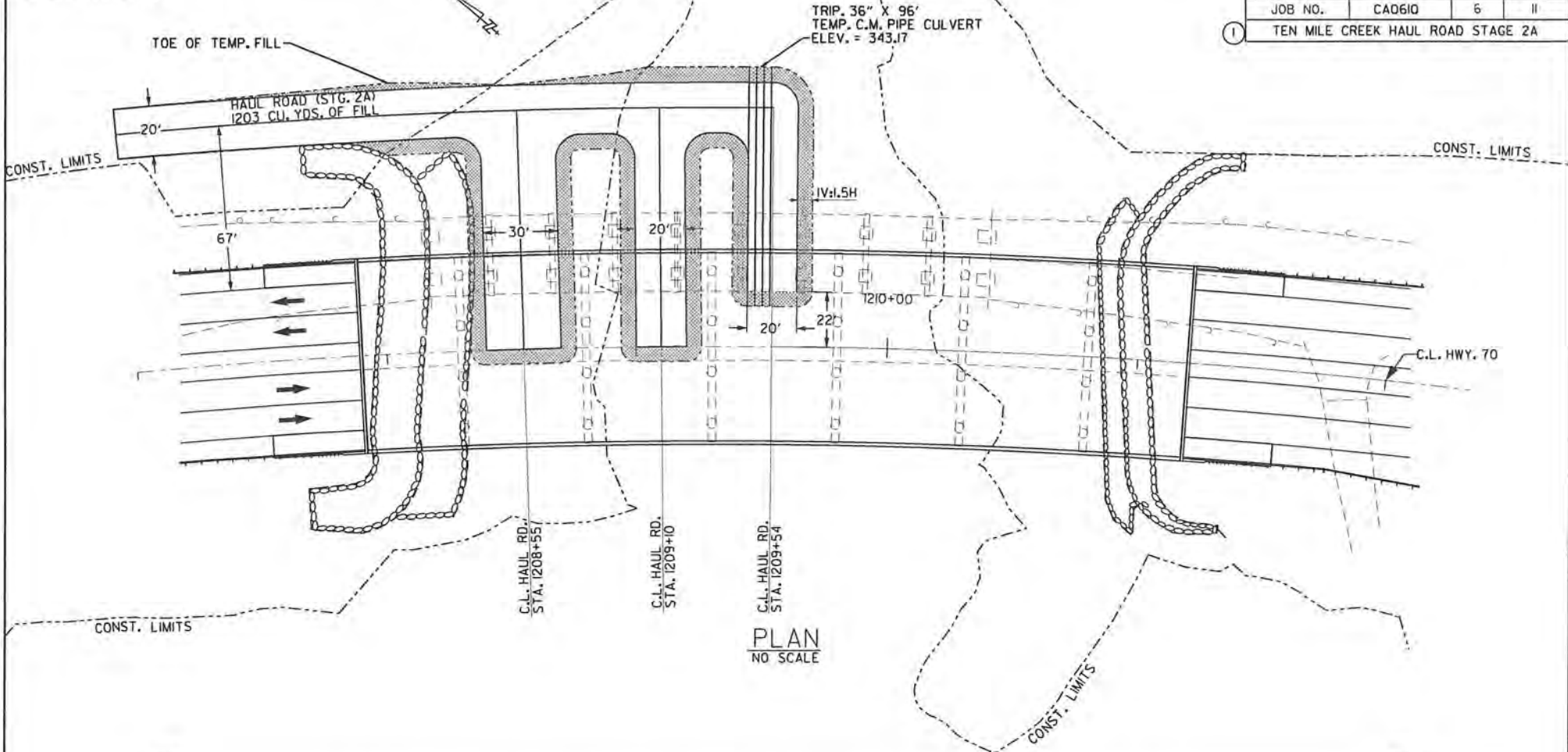


FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0610	5	11
① TEN MILE CREEK HAUL ROAD STAGE IB				





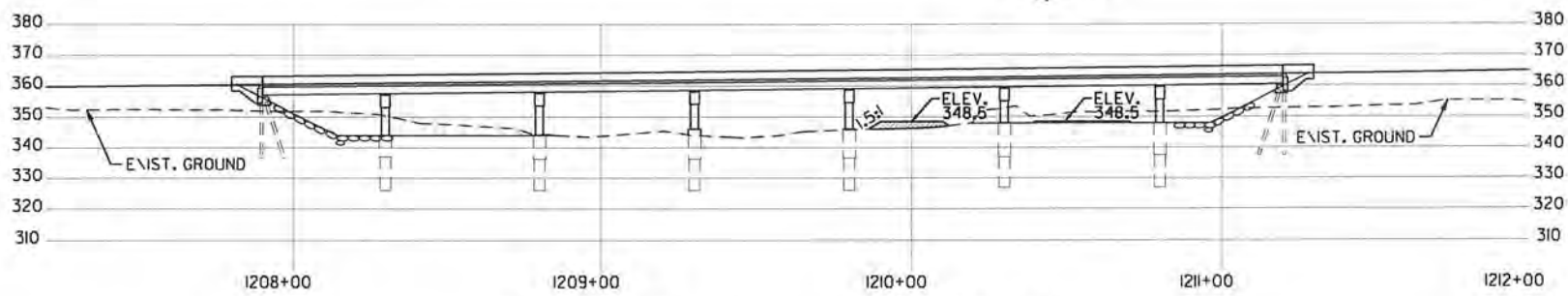
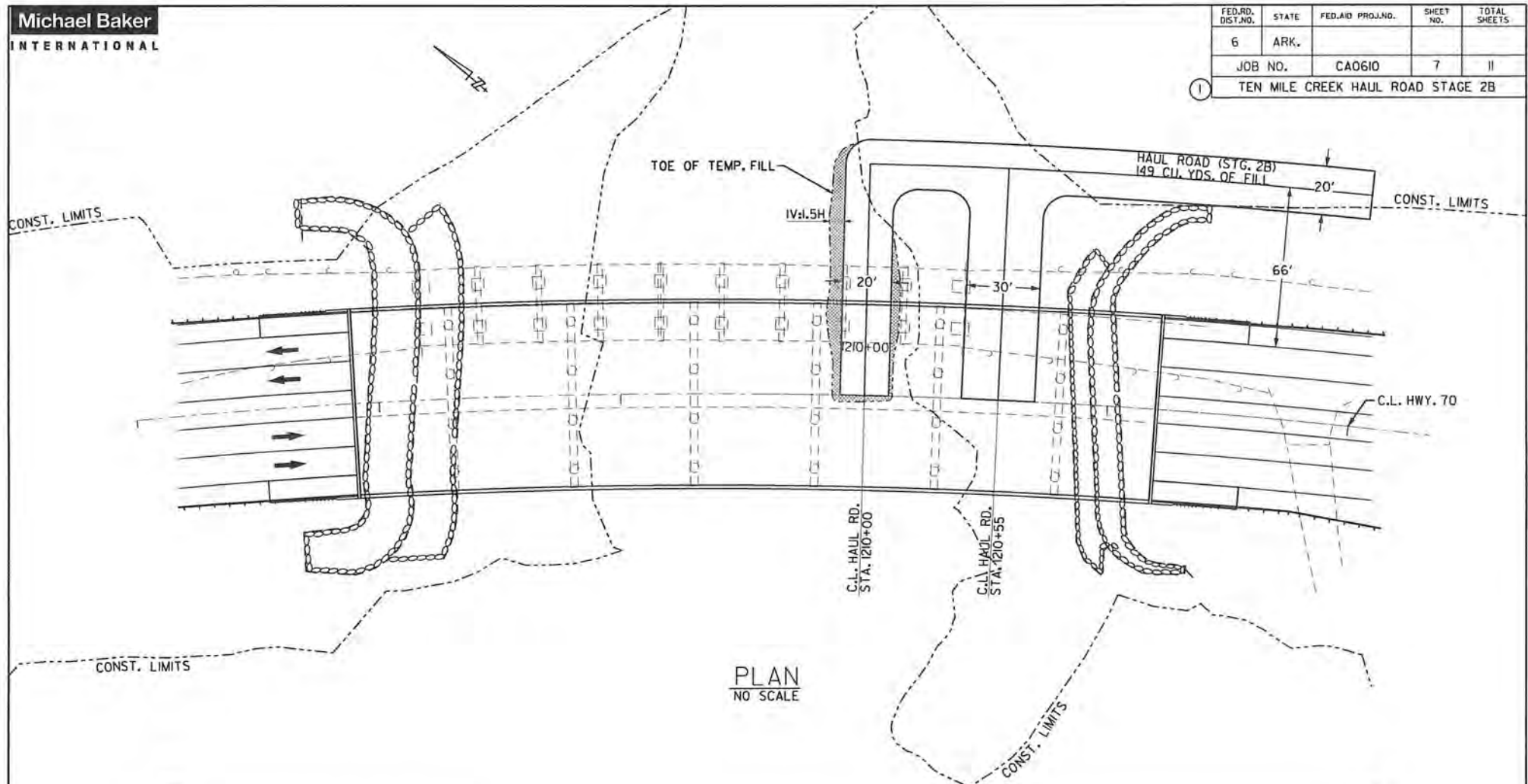
FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		CA0610	6	11
① TEN MILE CREEK HAUL ROAD STAGE 2A				



**ELEVATION (HAUL ROAD STG. 2A)**  
NO SCALE



FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		7	11
JOB NO.		CA0610	7	11
① TEN MILE CREEK HAUL ROAD STAGE 2B				



ELEVATION (HAUL ROAD STG. 2B)  
NO SCALE