

TIER 3 CATEGORICAL EXCLUSION

**AHTD JOB NUMBER CA0601
FAP NUMBER ACNHPP-030-2(267)111
Widening of I-30
Highway 70 - Sevier Street
Saline County, Arkansas**

Submitted Pursuant to 42 U.S.C. 4332(2)
By the
U.S. Department of Transportation
Federal Highway Administration
and the
Arkansas State Highway and Transportation Department

Prepared by
Kimley-Horn and Associates, Inc.
Memphis, TN

June 15, 2016

6/30/2016
Date of Approval



Randal Looney
Environmental Specialist
Federal Highway Administration

The Arkansas Highway Department of Transportation (AHTD) Environmental Division has reviewed the referenced project and it falls within the definition of the Tier 3 Categorical Exclusion as defined by the AHTD and Federal Highway Administration (FHWA) Memorandum of Agreement on the processing of Categorical Exclusions.

The purpose of the project is to increase capacity and safety along the Interstate 30 corridor. The project begins at Highway 70 and extends to Sevier Street at Benton in Saline County. Total length of the project is 5.3 miles. A project location map is in Attachment A.

The existing roadway consists of four 12-foot wide paved travel lanes with 10-foot wide outside and 6-foot wide inside shoulders. The existing median width is 40 feet. Existing right of way width varies, ranging from 300' - 420'.

Proposed improvements consist of six 12-foot wide paved travel lanes with 12-foot wide inside and 10-foot wide outside shoulders. Interchange modifications will be constructed at Highway 70, Highway 67/229, and Sevier Street. Access at the Sevier Street interchange will be changed. The direct connection of Sevier Street with the eastbound I-30 entrance ramp has been removed to increase safety on the ramp. Access to eastbound I-30 is still available to local traffic via South Street. Frontage roads will be modified in multiple locations to accommodate the new interchange configurations. Seven bridges will be replaced. Information about the existing bridge structures to be replaced is provided in Attachment D (Table 1). Information regarding the proposed structures is provided in Attachment D (Table 2). Proposed right of way width varies, ranging from 300' - 420'. Approximately 19.5 acres of additional right of way will be required for this project.

Design data for this project is as follows:

Design Year	Average Daily Traffic	Percent Trucks	Design Speed
2016	79,000	17	70 mph
2036	127,000	17	70 mph

There are no prime farmland impacts associated with this project. There are no Executive Order 12898 Environmental Justice issues involved with this project. Field inspections confirmed that no impacts to any existing underground storage tanks are anticipated and no hazardous waste deposits were identified. Two existing businesses will require relocation. Public Law 91-646, Uniform Relocation Assistance Act of 1970, as amended, will apply.

A noise study was conducted for the project to identify potential noise impacts (Attachment F). The noise study indicated that noise abatement was not warranted in the project area

based upon AHTD noise policy. Should the final noise report identify that noise abatement is warranted, the AHTD will follow the current noise policy and provide the findings to the public for review and consideration.

A cultural resources technical report was prepared and reviewed by the State Historic Preservation Officer (SHPO) over the Phase I cultural resources survey conducted in 2014 and 2015. Crouch Cemetery was identified as an area requiring special protection and has been included as a restraining condition in the project plans and specifications. The restraining condition special provision can be found in Attachment G. Concurrence from the SHPO is enclosed. Coordination letters with SHPO are in Attachment C. Prior to the survey, the appropriate Native American tribes were consulted. The consultation letters and responses from the tribes are in Attachment E.

Saline County participates in the National Flood Insurance Program. All of the floodplain encroachments within this highway construction project will be designed to comply with the county's local flood damage prevention ordinance. The project lies within the Zone AE, Special Flood Hazard Area. The final project design will be reviewed to confirm that the design is adequate and that the potential risk to life and property are minimized. Adjacent properties should not be impacted nor have a greater flood risk than existed before construction of the project. None of the encroachments will constitute a significant floodplain encroachment or a significant risk to property or life.

During the field survey, 10 streams, two wetlands, and one pond were identified as crossing or adjacent to the project corridor. Stream impacts totaling 1,001 linear feet and permanent wetland impacts of 0.26 acre are anticipated. Compensatory mitigation for unavoidable stream and wetland impacts will be provided at the Department's Upper Saline River Mitigation Bank, once approved. The result of coordination with the U.S. Army Corps of Engineers is pending. It is anticipated that the project will be allowed under the terms of a Section 404 Nationwide 23 Permit as defined in Federal Register 77(34)10183-10290. The complete Jurisdictional Determination Report is available upon request.

The Saline River is an Ecologically Sensitive Waterbody and an Extraordinary Resource Water. Construction activities within the Saline River will require an Individual Section 401 Water Quality Certification and a Short Term Activity Authorization from the Arkansas Department of Environmental Quality.

The project lies within the range or proximity of numerous federally protected threatened or endangered species. Those species include the northern long-eared bat (*Myotis septentrionalis*), Arkansas fatmucket (*Lampsilis powellii*), rabbitsfoot (*Quadrula cylindrica*), pink mucket (*Lampsilis abrupta*), and winged mapleleaf (*Quadrula fragosa*).

AHTD and FHWA are currently in formal consultation, under Section 7(a)(2) of the Endangered Species Act (ESA), with the United States Fish and Wildlife Service (USFWS)

for potential impacts to the above listed species. It is anticipated that consultation will result in a determination that the 4 (d) Rule will apply for the northern long-eared bat, that the project will have no effect on the winged mapleleaf, that the project may affect but is not likely to adversely affect the rabbitsfoot and pink mucket and that the project is likely to adversely affect the Arkansas fatmucket. All reasonable and prudent measures included in the resulting Biological Opinion will be implemented, including the translocation of mussels within the project are to a site determined by the USFWS and Arkansas Game and Fish Commission.

Several resources meeting the eligibility requirements for Section 4(f) protection and are located in the project survey corridor, including: the Arkansas Game and Fish Commission Boat Ramp at the Saline River, property along the Saline River owned by the City of Benton Parks and Recreation Department that provides river access and unmarked trails, Sunset Lake Park, the City of Benton Dog Park, and the future Riverside Park which will be located at the old airport. As currently planned, there are no impacts to these resources.

A Public Involvement Meeting was held November 5, 2015 at the Holland Chapel Baptist Church in Benton, Arkansas. A synopsis of this meeting is in Attachment H.

Listing of Commitments

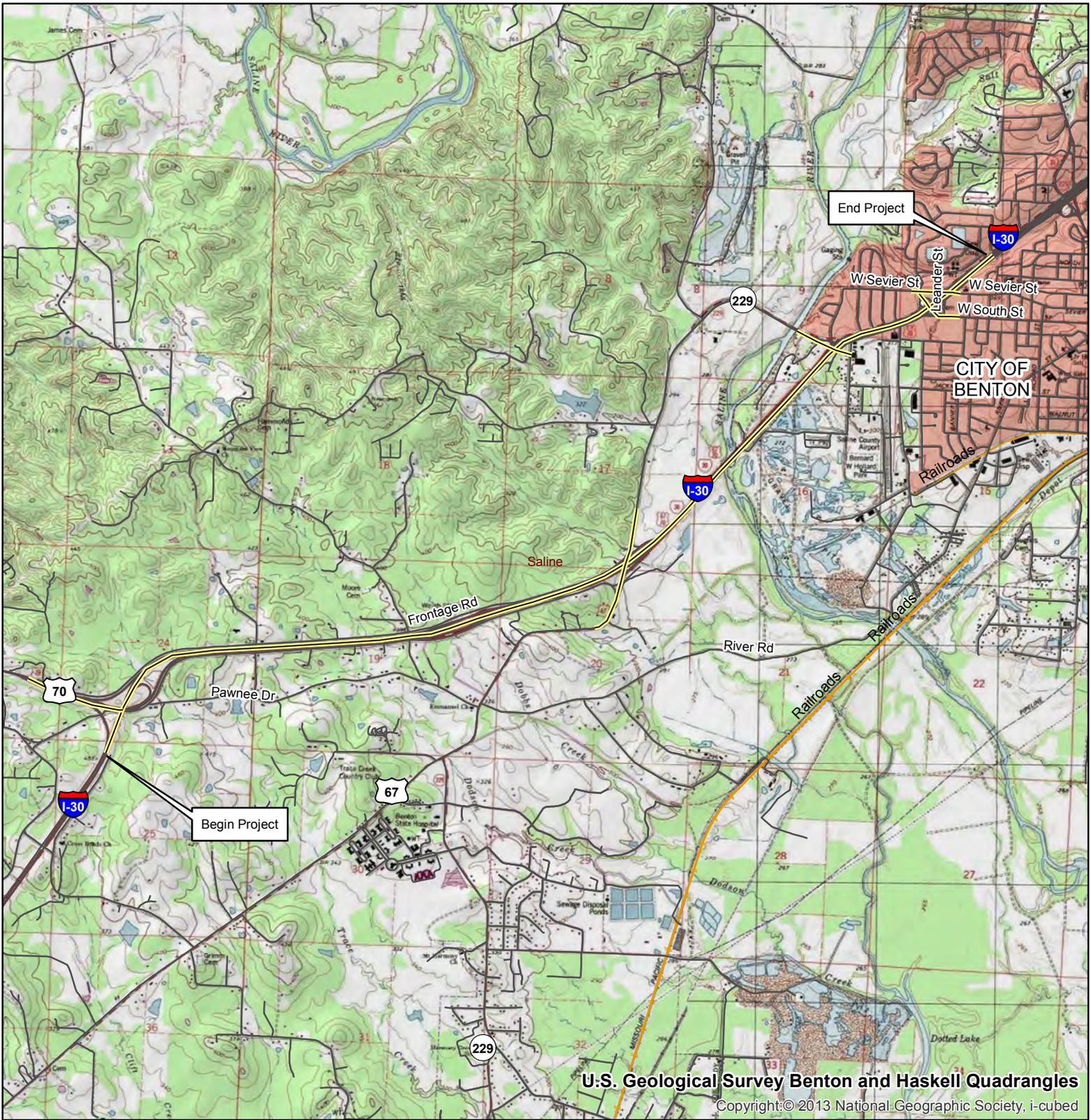
- *Special Provisions for Migratory Birds*
- *Special Provisions for Wellhead Protection*
- *Special Provisions for Water Quality Control*
- *USACOE 404 Nationwide 23 Permit*
- *Short Term Activity Authorization*
- *Individual Section 401 Water Quality Certification*
- *Wetland and Stream mitigation from the Upper Saline River Mitigation Bank*
- *Floodplain Development Permit*
- *Avoid any Impacts to Crouch Cemetery and provide parking spaces*
- *Complete formal Section 7 consultation with USFWS for potential impacts to listed species*
- *Implement all reasonable and prudent measures identified in the Biological Opinion issued by the USFWS*
- *AHTD will require Special Provisions for T&E species once the formal consultation with the USFWS is complete*



CA0601 I-30 Widening, From Highway 70 to Sevier Street

Attachment A

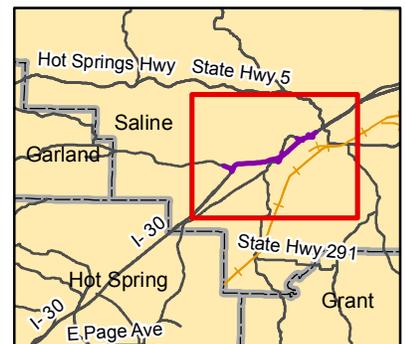
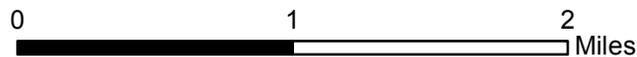
Project Location Map



**AHTD Job CA0601
 I-30 Widening
 From Highway 70 to Sevier Street
 Project Location**

Legend

— Project Corridor





CA0601 I-30 Widening, From Highway 70 to Sevier Street

Attachment B

Environmental Impacts Assessment Form

AHTD ENVIRONMENTAL IMPACTS ASSESSMENT FORM

AHTD Job Number CA0601 FAP Number ACNHPP-030-2(267)111

Job Title Widening of I-30, From Highway 70 to Sevier Street

Environmental Impacts	None	Minor	Significant	Comments
Air Quality	X			
Construction Impacts		X		
Cultural Resources	X			<i>Cemetery identified as constraint area.</i>
Economic	X			
Endangered Species		X		<i>Formal consultation for potential impacts to Arkansas fatmuckets, rabbitsfoot, and Northern Long Eared Bats underway with USFWS.</i>
Energy Resources	X			
Environmental Justice/Title VI	X			
Fish and Wildlife				
Floodplains	X			
Forest Service Property	X			
Hazardous Materials/Landfills	X			
Land Use Impacts	X			
Migratory Birds		X		<i>Special Provisions for Migratory Birds added.</i>
Navigation/Coast Guard	X			
Noise Levels	X			
Prime Farmland	X			
Protected Waters		X		<i>Temporary impacts during construction to Saline River (Ecologically Sensitive Waterbody and an Extraordinary Resource Water)</i>
Public Recreation Lands		X		<i>Loss of outbuilding at the State Fairground.</i>
Public Water Supply/WHPA	X			
Relocates		X		<i>Two business relocations.</i>
Section 4(f)/6(f)	X			
Social	X			
Underground Storage Tanks	X			
Visual Impacts	X			

AHTD ENVIRONMENTAL IMPACTS ASSESSMENT FORM

Stream Impacts		X		<i>1,001' of permanent impacts anticipated.</i>
Water Quality	X			
Wetlands		X		<i>0.26 acres of permanent impacts anticipated.</i>
Wildlife Refuges	X			

Section 401 Water Quality Certification Required? YES
 Short-term Activity Authorization Required? YES
 Section 404 Permit Required? YES Type Nationwide 23

Remarks:

Signature of Evaluator  Date April 4, 2016



CA0601 I-30 Widening, From Highway 70 to Sevier Street

Attachment C

SHPO Clearance and Agency Responses

ARKANSAS STATE HIGHWAY
AND
TRANSPORTATION DEPARTMENT

Scott E. Bennett, P.E.
Director
Telephone: (501) 569-2000
Voice/TTY: 711



P.O. Box 2261
Little Rock, AR 72203-2261
Telefax: (501) 569-2400
www.ArkansasHighways.com

March 16, 2015

Mr. Eric Gilliland
Arkansas Historic Preservation Program
1500 Tower Building
323 Center Street
Little Rock, AR 72201

Re: Connecting Arkansas Program
Job CA0601 – I-30, US Highway 70 to Sevier Street
Saline County, Arkansas
AHPP Tracking Number 90864.1

Dear Mr. Gilliland:

The above referenced project proposes to widen Interstate 30 from US Highway 70 to Sevier Street for a distance of approximately 5.2 miles in Saline County. Interchange improvements are planned at Exit 111 (US 70), Exit 114 (US 67), and Exit 116 (South St). We submitted the cultural resource report for this project for your review last year. Your office had requested additional information to include in the report. The additional information has been compiled in the attached addendum report. If further information is required, please contact me at 601.825.3633. Thank you for your time and assistance in this matter.

Sincerely yours,

A handwritten signature in blue ink that reads "Ray Balentine".

Ray Balentine, PE

CAP Environmental Manager

Attachment

cc: Shahriar Azad, PE -Bridgefarmer / Brenda Price - AHTD



The Department of Arkansas Heritage

Mike Beebe
Governor

Martha Miller
Director

Arkansas Arts Council

Arkansas Natural Heritage
Commission

Delta Cultural Center

Historic Arkansas Museum

Mosaic Templars
Cultural Center

Old State House Museum



Arkansas Historic Preservation Program

323 Center Street, Suite 1500
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www.arkansaspreservation.org

An Equal Opportunity Employer



April 7, 2015

Mr. John Fleming
Division Head, Environmental Division
Arkansas State Highway and Transportation Department
Post Office Box 2261
Little Rock, Arkansas 72203-2261

Re: Saline County – Washington
Section 106 Review – FHWA
AHTD Job No. CA0601; I-30, US Highway 70 to Sevier Street
AHPP Project Number 90864.2

Dear Mr. Fleming:

The staff of the Arkansas Historic Preservation Program has examined the above-referenced project and is pleased to offer the following comments regarding the Area of Potential Effect (APE).

My staff has reviewed an addendum to the report entitled *A Cultural Resources Survey of the Proposed New Right-of-Way Associated with AHTD Job No: CA0601 (FPA No:9991) Widening of I-30 & Interchange Improvements in Saline County, Arkansas* by Flat Earth Archeology. This addendum addresses our previous concerns regarding properties SA32 (De Soto Expedition Route Marker) and SA33 (Fort Bussy) as well as an unnamed cemetery (now known as the Crouch Cemetery) shown on the USGS quadrangle map.

We agree that neither SA32 nor SA33 will be affected by the proposed undertaking and that the cemetery should be avoided. With the provision that the Crouch Cemetery is avoided and that an AAS site form is completed for it, we find that this undertaking will have no effect on historic properties. A copy of the site form should be forwarded to this office.

Thank you for the opportunity to review this report. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, please call Steve Imhoff of my staff at 501-324-9880.

Sincerely,

Frances McSwain
Deputy State Historic Preservation Officer

cc: Mr. Ray Balentine, Arkansas State Highway and Transportation Department
Mr. Everett Bandy, Quapaw Tribe of Oklahoma
Dr. Timothy Baugh, Chickasaw Nation
Mr. Chris Branam, Flat Earth Archeology
Mr. Kenneth H. Carleton, Mississippi Band of Choctaw Indians
Dr. Ann Early, Arkansas Archeological Survey
~~Ms. Tamara Francis-Fourkiller, Caddo Nation~~
Mr. Randal Looney, FHWA
Dr. Andrea Hunter, Osage Nation
Dr. Ian Thompson, Choctaw Nation of Oklahoma



The Department of Arkansas Heritage

Mike Beebe Governor

Martha Miller Director

Arkansas Arts Council

Arkansas Natural Heritage Commission

Delta Cultural Center

Historic Arkansas Museum

Mosaic Templars Cultural Center

Old State House Museum



Arkansas Historic Preservation Program

323 Center Street, Suite 1500 Little Rock, AR 72201 (501) 324-9880 fax: (501) 324-9184 tdd: (501) 324-9811 e-mail:

info@arkansaspreservation.org

website:

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August 18, 2014

Mr. Ray Balentine, P.E. Environmental Team Leader Arkansas State Highway and Transportation Department Connecting Arkansas Program PO Box 2261 Little Rock, AR 72203-2261

RE: Saline County – Benton Section 106 Review – FHWA Request for Technical Assistance AHTD Job Number CA0901 AHPP Tracking Number 90864 CA0601

RECEIVED AHTD

AUG 19 2014

ENVIRONMENTAL DIVISION

Dear Mr. Balentine:

This letter is written in response to your inquiry regarding properties of architectural or historical significance in the area of the proposed referenced project. The staff of the Arkansas Historic Preservation Program has reviewed the documents contained in your July 21, 2014, letter and has determined that the ten (10) structures (A-J) possibly impacted by this undertaking are ineligible for inclusion in the National Register of Historic Places. Please note that your letter mentions eleven (11) structures but only includes ten (10).

In your documentation you write that other properties without Right-of-Way impact were not evaluated and therefore were not included. We have noted four (4) additional properties located within the Right-of Way (SA0126 Yates Cabin, SA0020 Saline River Bridge, SA0032 DeSoto's Expedition Route Site, and SA0033 Busey's Fort Site) that were not included in your submission material.

Once the undertaking is further along in the planning stages, we look forward to reviewing the cultural resources survey report of the proposed project. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, please call Theresa Russell of my staff at (501)-324-9357.

Sincerely,

Frances McSwain

Frances McSwain Deputy State Historic Preservation Officer

cc: Mr. Randal Looney, Federal Highway Administration Mr. John Fleming, AHTD Ms. Rebecca Brave, Osage Nation Mr. Everett Bandy, Quapaw Tribe of Oklahoma Dr. Ann Early, Arkansas Archeological Survey



The Department of
**Arkansas
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Arkansas Historic
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November 7, 2014

Mr. Chris Branam
Flat Earth Archeology, LLC
13 Valley Road
Cabot, Arkansas 72023

Re: Saline County – General
Section 106 Review – FHWA
Report Titled *Cultural Resources Survey of Proposed New Right-of-Way Associated with AHTD Job No. CA0601 – Widening I-30 in Saline County, Arkansas*
F.E.A. Project Report 2014-37
AHPP Tracking Number 90864.1

Dear Mr. Branam:

The staff of the Arkansas Historic Preservation Program has reviewed the above-referenced cultural resources survey report. The portions of the report dealing with areas of new right-of-way are acceptable, and we concur that no historic properties will be impacted by these small right-of-way expansions. We also concur that archeological site 3SA380 is ineligible for listing in the National Register of Historic Places, that no evidence of archeological site 3SA222 is present within the proposed right-of-way, and that no further work is necessary at these locations.

We do, however, have some concerns regarding possibly properties within the existing right-of-way. The DeSoto's Expedition Route Marker (SA32) and Fort Bussy (SA33) were discussed in the text, but details regarding efforts to relocate these properties were not given. It is not clear whether the small semi-circular area in the southwest corner of the intersection of Interstate 30 and Highway 67 was actually subjected to survey to ensure that these properties are not present in this area. We recommend that this area be subjected to cultural resources survey to determine if remnants of these resources, particularly Fort Bussy, are present in the area. If this area was already surveyed for the presence of cultural resources, please provide details regarding the activities taken in the area to attempt to find these properties.

Likewise, please provide more detailed information regarding the procedures implemented to attempt to find the historic cemetery depicted on the 1974 Benton quadrangle map near 3SA356.

Thank you for the opportunity to review this undertaking. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, please call Eric Gilliland of my staff at 501-324-9270.

NOV 12 2014

Kimley-Horn & Associates, Inc.
Memphis, TN

Sincerely,

Frances McSwain

Frances McSwain
Deputy State Historic Preservation Officer

cc: Mr. Everett Bandy, Quapaw Tribe of Oklahoma
Mr. Robert Cast, Caddo Nation
Mr. Drake Danley, Kimley-Horn and Associates
Dr. Ann Early, Arkansas Archeological Survey
Mr. John Fleming, AHTD
Ms. Amber Hood, Chickasaw Nation
Dr. Andrea Hunter, Osage Nation
Dr. Ian Thompson, Choctaw Nation of Oklahoma

ARKANSAS STATE HIGHWAY
AND
TRANSPORTATION DEPARTMENT

Scott E. Bennett, P.E.
Director
Telephone: (501) 569-2000
Voice/TTY: 711



P.O. Box 2261
Little Rock, AR 72203-2261
Telefax: (501) 569-2400
www.ArkansasHighways.com

August 1, 2014

Mr. John Beneke
Outdoor Recreation Grants
Arkansas Department of Parks and Tourism
One Capitol Mall
Little Rock, AR 72201

Re: Connecting Arkansas Program
Job CA0601 – I30 Widening from US Highway 70 to Sevier Street
Saline County, Arkansas

Dear Mr. Beneke:

The Arkansas State Highway and Transportation Department (AHTD) would like to request information on Land and Water Conservation Fund (LWCF) grant assisted recreational sites protected by Section 6(f)(3) of the LWCF Act within the vicinity of the proposed project area. The project consists of the widening of Interstate 30 (I-30) from US Highway 70 (US 70) to West Sevier Street, and interchange improvements at Exit 111/ US 70, Exit 114/State Highway 229 (AR 229), and Exit 116/AR 229/West Sevier Street. The total project length is approximately five miles. The improvements will generally consist of widening the interstate and will also involve replacing one bridge on I-30 over the Saline River. The project is located in Saline County Arkansas (see attached location map).

Resources meeting the eligibility requirements for Section 4(f) protection and are located in the project survey corridor include: the Arkansas Game and Fish Commission Boat Ramp at the Saline River, property along the Saline River owned by the City of Benton Parks and Recreation Department that provides river access and unmarked trails, Sunset Lake Park, the City of Benton Dog Park, and the future Riverside Park which will be located at the old airport. As currently planned, impacts to these facilities would be limited to areas outside of park boundaries that would be considered to be in existing transportation use.

CA0601

12017730/1

Mr. Beneke
August 1, 2014
Page 2 of 2

The CAP would like to ensure these properties are avoided if possible during project development, design and construction. Any information you could provide would be appreciated. If further information is required, please contact Ray Balentine (601) 825-3633.

Please call me if you have any questions.

Sincerely yours,

A handwritten signature in blue ink that reads "Ray Balentine". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Ray Balentine, PE

CAP Environmental Manager

Attachment

cc: Shahriar Azad, PE -Bridgefamer / Brenda Price -AHTD



CA0601 I-30 Widening, From Highway 70 to Sevier Street

Attachment D

Roadway and Bridge Design Sheets

DESIGN INFORMATION

Job Number CA0601 FAP Number 9991 County Saline

Job Name I-30 Widening from Highway 70 to Sevier Street

Design Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)

Brief Project Description Widening of existing I-30 and replacement of bridge structures, from Highway 70 interchange to Sevier Street

EXISTING CONDITIONS:

Roadway Width: 24'-0" each way Shoulder Width: 10'-0" outside, 6" inside

Number of Lanes and Width: 2 lanes each way, 12'-0" width

Average Existing ROW Width 300' (300'min., 420' max.)

PROPOSED CONDITIONS:

Roadway Width: 24'-0" to 48'-0", each way Shoulder Width: 12'-0" outside, 10'-0" inside

Number of Lanes and Width: Varies, 2-4 lanes each way, 12'-0" width

Average Existing ROW Width 300' (300'min., 420' max.)

CONSTRUCTION INFORMATION:

If detour: Where N/A Length _____

DESIGN DATA:

2016 ADT 79,000 2036 ADT 127,000 %Trucks 17% Design Speed 70 mph

Approximate total length of project: 5.358 mile(s)

Justification for improvements: Improve the overall level of service and address future growth in the heavily traveled corridor.

Table 1: Existing Structures

Bridge Number	Roadway/Watercourse	Existing Structure
A3092	Highway 67	43' x 258' structure comprised of 3-span concrete deck with steel beams and HP Steel Bearing piles. The structure has a sufficiency rating of 84.2.
B3092	Highway 67	43' x 258' structure comprised of 3-span concrete deck with steel beams and HP Steel Bearing piles. The structure is structurally deficient and has a sufficiency rating of 66.0.
A3093	Saline River Relief	43' x 503' structure comprised of 10-span concrete deck with steel beams and HP Steel Bearing piles. The structure is structurally deficient and has a sufficiency rating of 71.0.
B3093	Saline River Relief	43' x 503' structure comprised of 10-span concrete deck with steel beams and HP Steel Bearing piles. The structure is structurally deficient and has a sufficiency rating of 71.0.
A3094	Saline River	43' x 1063' structure comprised of 14-span concrete deck with steel beams and HP Steel Bearing piles. The structure is structurally deficient and has a sufficiency rating of 67.1.
B3094	Saline River	63' x 1063' structure comprised of 14-span concrete deck with steel beams and HP Steel Bearing piles. The structure has a sufficiency rating of 83.9.
3141R	I-30	47' x 283' structure comprised of 6-span concrete deck with steel beams and HP Steel Bearing piles. The structure has a sufficiency rating of 97.0.
Sta. 258+57	Trace Creek	Double 4' x 6' x 265'-8" structure comprised of RCBC
Sta. 320+78	Dobbs Creek	Double 8' x 8' x 256' structure comprised of RCBC
Sta. 399+85	Tributary to Saline River	Double 10' x 6' x 462' structure comprised of RCBC

Table 2: Proposed Structures

Roadway/ Watercourse	Proposed Structure	Type
Highway 67	148'-0" Composite Plate Girder on Pile End Bents. Total length 150'-2 9/16"	Replacement Structure (I-30 EB)
Highway 67	148'-0" Composite Plate Girder on Pile End Bents. Total length 151'-5 11/16"	Replacement Structure (I-30 WB)
Saline River Relief	8-span Continuous Composite W-Beam Unit on Trestle Pile Bents. Total length 533'-0 7/16"	Replacement Structure (I-30 EB)
Saline River Relief	8-span Continuous Composite W-Beam Unit on Trestle Pile Bents. Total length 533'-0 7/16"	Replacement Structure (I-30 WB)
Saline River Relief	8-span Continuous Composite W-Beam Unit on Trestle Pile Bents. Total length 533'-0 7/16"	New Structure (I-30 WB Ramp)
Saline River	14-span Continuous Composite W-Beam Unit on Trestle Pile Bents and Columns on Drilled Shafts. Total length 1063'-0 3/4"	Replacement Structure (I-30 EB)
Saline River	14-span Continuous Composite W-Beam Unit on Trestle Pile Bents and Columns on Drilled Shafts. Total length 1063'-0 3/4"	Replacement Structure (I-30 WB)
I-30	4-span Continuous Composite W-Beam Unit on Trestle Pile Bents. Total length 150'-2 9/16"	Replacement Structure (South Street)
Trace Creek Sta 258+57	Extend existing Double 4' x 6' x 265'-8" RCBC to 284'-3"	Culvert Extension
Dobbs Creek Sta 320+78	Extend existing Double 8' x 8' x 256' RCBC to 272'-0"	Culvert Extension
Tributary to Saline River Sta 399+85	Extend existing Double 10' x 6' x 462' RCBC to 542'-4 1/4"	Culvert Extension
Tributary to Saline River Sta 76+28	Triple 10' x 6' x 102'-4 1/2" RCBC	New Structure

BRIDGE DESIGN INFORMATIONJob Number CA0601 FAP Number 9991 County SalineJob Name I-30 Widening from Highway 70 to Sevier StreetDesign Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)**Description of Existing Bridge:**Bridge Number B3092 over Highway 67Bridge Location: Rte: I-30 WB Section: 220 Log Mile: 113.65Length: 258'-4¹/₄" Br. Rdwy. width: 40'-0" Deck width (Out-to-Out) 43'-0"Type Construction: Composite W-Beam UnitDeficiencies Deck ConditionHBRRP Eligibility: _____ Qualifying Code: SD Sufficiency Rating: 66**Proposed Improvements:**Length: 151'-5¹¹/₁₆" Br. Rdwy. Width: 70'-6⁵/₈" to 74'-8¹/₂" Deck Width (Out-to-out) 73'-6⁵/₈" to 78'-8¹/₂"Travel Lanes: 3 Lanes @12'-0" Each & 1 Ramp @12'-6" to 15'-0" Shoulder Width: 10' outside, 12' insideSidewalks: No Location: _____ Width: _____**Construction Information**Location in relation to existing bridge: Same LocationSuperstructure Type: Composite Plate GirderSpan Lengths: 148'-0"Substructure Type: Pile end bentsOrdinary High Water Elev. N/A No. of Bents inside OHW Contours: N/AConcrete Volume below OHW: N/A Vol. Bent Excavation: N/A Is backfill req'd? N/AIs Channel excavation req'd? N/A Surface Area: N/A Volume: N/AIs fill below OHW req'd? N/A Surface Area: N/A Volume: N/AIs riprap req'd? No**Work Road Information:**Is work road(s) required? No Location: _____ Top width: _____ ftIs fill below OHW req'd? _____ Surface Area: _____ ft² Volume: _____ yd³

Are pipes required to meet backwater criteria? _____

Detour Information:Is a detour bridge required? No Location in relation to existing bridge: _____

Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____

Volume of fill below OHW: _____ yd³ Surface area: _____ ft²

BRIDGE DESIGN INFORMATIONJob Number CA0601 FAP Number 9991 County SalineJob Name I-30 Widening from Highway 70 to Sevier StreetDesign Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)**Description of Existing Bridge:**Bridge Number A3092 over Highway 67Bridge Location: Rte: I-30 EB Section: 220 Log Mile: 113.64Length: 258'-4¹/₄" Br. Rdwy. width: 40'-0" Deck width (Out-to-Out) 43'-0"Type Construction: Composite W-Beam Unit

Deficiencies _____

HBRRP Eligibility: _____ Qualifying Code: _____ Sufficiency Rating: 84.2**Proposed Improvements:**Length: 150'-2⁹/₁₆" Br. Rdwy. Width: 58'-0" Deck Width (Out-to-out) 61'-0"Travel Lanes: 3 Lanes @ 12'-0" Each Shoulder Width: 10' outside, 12' insideSidewalks: No Location: _____ Width: _____**Construction Information**Location in relation to existing bridge: Same LocationSuperstructure Type: Composite Plate GirderSpan Lengths: 148'-0"Substructure Type: Pile end bentsOrdinary High Water Elev. N/A No. of Bents inside OHW Contours: N/AConcrete Volume below OHW: N/A Vol. Bent Excavation: N/A Is backfill req'd? N/AIs Channel excavation req'd? N/A Surface Area: N/A Volume: N/AIs fill below OHW req'd? N/A Surface Area: N/A Volume: N/AIs riprap req'd? No**Work Road Information:**Is work road(s) required? No Location: _____ Top width: _____ ftIs fill below OHW req'd? _____ Surface Area: _____ ft² Volume: _____ yd³

Are pipes required to meet backwater criteria? _____

Detour Information:Is a detour bridge required? No Location in relation to existing bridge: _____

Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____

Volume of fill below OHW: _____ yd³ Surface area: _____ ft²

BRIDGE DESIGN INFORMATIONJob Number CA0601 FAP Number 9991 County SalineJob Name I-30 Widening from Highway 70 to Sevier StreetDesign Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)**Description of Existing Bridge:**Bridge Number B3093 over Saline River ReliefBridge Location: Rte: I-30 WB Section: 220 Log Mile: 113.95Length: 503'-0³/₄" Br. Rdwy. width: 40'-0" Deck width (Out-to-Out) 43'-0"Type Construction: Composite W-Beam UnitDeficiencies Superstructure ConditionHBRRP Eligibility: _____ Qualifying Code: SD Sufficiency Rating: 71**Proposed Improvements:**Length: 533'-0⁷/₁₆" Br. Rdwy. Width: 58'-0" Deck Width (Out-to-out) 61'-0"Travel Lanes: 3 Lanes @ 12'-0" Each Shoulder Width: 10' outside, 12' insideSidewalks: No Location: _____ Width: _____**Construction Information**Location in relation to existing bridge: Same LocationSuperstructure Type: Continuous Composite W-Beam UnitSpan Lengths: 63'-73'-70'-59', 59'-70'-73'-63'Substructure Type: Trestle Pile BentsOrdinary High Water Elev. 273.5 ft No. of Bents inside OHW Contours: 1Concrete Volume below OHW: 0.60 yd³ Vol. Bent Excavation: 0 yd³ Is backfill req'd? NoIs Channel excavation req'd? No Surface Area: _____ Volume: _____Is fill below OHW req'd? No Surface Area: _____ Volume: _____Is riprap req'd? Yes**Work Road Information:**Is work road(s) required? Yes Location: See Attached Plans Top width: 14 ft-25 ftIs fill below OHW req'd? Yes Surface Area: 1654 ft² Volume: 39 yd³Are pipes required to meet backwater criteria? No**Detour Information:**Is a detour bridge required? No Location in relation to existing bridge: _____

Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____

Volume of fill below OHW: _____ yd³ Surface area: _____ ft²

BRIDGE DESIGN INFORMATIONJob Number CA0601 FAP Number 9991 County SalineJob Name I-30 Widening from Highway 70 to Sevier StreetDesign Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)**Description of Existing Bridge:**Bridge Number A3093 over Saline River ReliefBridge Location: Rte: I-30 EB Section: 220 Log Mile: 113.96Length: 503'-0³/₄" Br. Rdwy. width: 40'-0" Deck width (Out-to-Out) 43'-0"Type Construction: Composite W-Beam UnitDeficiencies Superstructure ConditionHBRRP Eligibility: _____ Qualifying Code: SD Sufficiency Rating: 71**Proposed Improvements:**Length: 533'-0⁷/₁₆" Br. Rdwy. Width: 70'-0" Deck Width (Out-to-out) 73'-0"Travel Lanes: 4 Lanes @ 12'-0" Each Shoulder Width: 10' outside, 12' insideSidewalks: No Location: _____ Width: _____**Construction Information**Location in relation to existing bridge: Same LocationSuperstructure Type: Continuous Composite W-Beam UnitSpan Lengths: 63'-73'-70'-59', 59'-70'-73'-63'Substructure Type: Trestle Pile BentsOrdinary High Water Elev. 273.5 ft No. of Bents inside OHW Contours: 1Concrete Volume below OHW: 2.64 yd³ Vol. Bent Excavation: 0 yd³ Is backfill req'd? NoIs Channel excavation req'd? No Surface Area: _____ Volume: _____Is fill below OHW req'd? No Surface Area: _____ Volume: _____Is riprap req'd? Yes**Work Road Information:**Is work road(s) required? Yes Location: See Attached Plans Top width: 14 ft-25 ftIs fill below OHW req'd? Yes Surface Area: 1916 ft² Volume: 63 yd³Are pipes required to meet backwater criteria? No**Detour Information:**Is a detour bridge required? No Location in relation to existing bridge: _____

Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____

Volume of fill below OHW: _____ yd³ Surface area: _____ ft²

BRIDGE DESIGN INFORMATIONJob Number CA0601 FAP Number 9991 County SalineJob Name I-30 Widening from Highway 70 to Sevier StreetDesign Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)**Description of Existing Bridge:**Bridge Number B3094 over Saline RiverBridge Location: Rte: I-30 WB Section: 220 Log Mile: 114.38Length: 1063'-0³/₄" Br. Rdwy. width: 40'-0" Deck width (Out-to-Out) 43'-0"Type Construction: Composite W-Beam Unit

Deficiencies _____

HBRRP Eligibility: _____ Qualifying Code: _____ Sufficiency Rating: 83.9**Proposed Improvements:**Length: 1063'-0³/₄" Br. Rdwy. Width: 58'-0" Deck Width (Out-to-out) 61'-0"Travel Lanes: 3 Lanes @ 12'-0" Each Shoulder Width: 10' outside, 12' insideSidewalks: No Location: _____ Width: _____**Construction Information**Location in relation to existing bridge: Same LocationSuperstructure Type: Continuous Composite W-Beam UnitSpan Lengths: 58'-80'-80'-62', 77'-96'-77', 58'-80'-80'-62', 77'-96'-77'Substructure Type: Trestle Pile Bents and Columns on Drilled ShaftsOrdinary High Water Elev. 273.5 ft No. of Bents inside OHW Contours: 11Concrete Volume below OHW: 134.7 yd³ Vol. Bent Excavation: 993.7 yd³ Is backfill req'd? NoIs Channel excavation req'd? No Surface Area: _____ Volume: _____Is fill below OHW req'd? No Surface Area: _____ Volume: _____Is riprap req'd? Yes**Work Road Information:**Is work road(s) required? Yes Location: See Attached Top width: 14 ft-25 ftIs fill below OHW req'd? Yes Surface Area: 40560 ft² Volume: 18664 yd³Are pipes required to meet backwater criteria? No**Detour Information:**Is a detour bridge required? No Location in relation to existing bridge: _____

Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____

Volume of fill below OHW: _____ yd³ Surface area: _____ ft²

BRIDGE DESIGN INFORMATIONJob Number CA0601 FAP Number 9991 County SalineJob Name I-30 Widening from Highway 70 to Sevier StreetDesign Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)**Description of Existing Bridge:**Bridge Number A3094 over Saline RiverBridge Location: Rte: I-30 EB Section: 220 Log Mile: 114.38Length: 1063'-0^{3/4}" Br. Rdwy. width: 40'-0" Deck width (Out-to-Out) 43'-0"Type Construction: Composite W-Beam UnitDeficiencies Superstructure ConditionHBRRP Eligibility: _____ Qualifying Code: SD Sufficiency Rating: 67.1**Proposed Improvements:**Length: 1063'-0^{3/4}" Br. Rdwy. Width: 58'-0" Deck Width (Out-to-out) 61'-0"Travel Lanes: 3 Lanes @ 12'-0" Each Shoulder Width: 10' outside, 12' insideSidewalks: No Location: _____ Width: _____**Construction Information**Location in relation to existing bridge: Same LocationSuperstructure Type: Continuous Composite W-Beam UnitSpan Lengths: 58'-80'-80'-62', 77'-96'-77', 58'-80'-80'-62', 77'-96'-77'Substructure Type: Trestle Pile Bents and Columns on Drilled ShaftsOrdinary High Water Elev. 273.5 ft No. of Bents inside OHW Contours: 11Concrete Volume below OHW: 138.3 yd³ Vol. Bent Excavation: 993.7 yd³ Is backfill req'd? NoIs Channel excavation req'd? No Surface Area: _____ Volume: _____Is fill below OHW req'd? No Surface Area: _____ Volume: _____Is riprap req'd? Yes**Work Road Information:**Is work road(s) required? Yes Location: See Attached Top width: 14 ft-25 ftIs fill below OHW req'd? Yes Surface Area: 49265 ft² Volume: 22899 yd³Are pipes required to meet backwater criteria? No**Detour Information:**Is a detour bridge required? No Location in relation to existing bridge: _____

Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____

Volume of fill below OHW: _____ yd³ Surface area: _____ ft²

BRIDGE DESIGN INFORMATIONJob Number CA0601 FAP Number 9991 County SalineJob Name I-30 Widening from Highway 70 to Sevier StreetDesign Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)**Description of Existing Bridge:**Bridge Number 3141R over I-30Bridge Location: Rte: South Street Section: Log Mile: 1.08Length: 282'-3¹⁵/₁₆" Br. Rdwy. width: 44'-0" Deck width (Out-to-Out) 47'-0"Type Construction: Composite W-Beam Spans

Deficiencies _____

HBRRP Eligibility: _____ Qualifying Code: _____ Sufficiency Rating: 97**Proposed Improvements:**Length: 250'-2" Br. Rdwy. Width: 53'-0" Deck Width (Out-to-out) 62'-8"Travel Lanes: 4 Lanes @ 12'-0" Each Shoulder Width: 4' (EB lanes)Sidewalks: Yes Location: Outside of WB lanes Width: 6'-0"**Construction Information**Location in relation to existing bridge: Same LocationSuperstructure Type: Continuous Composite W-Beam UnitSpan Lengths: 52'-62'-65'-69'Substructure Type: Columns on Spread FootingsOrdinary High Water Elev. N/A No. of Bents inside OHW Contours: N/AConcrete Volume below OHW: N/A Vol. Bent Excavation: N/A Is backfill req'd? N/AIs Channel excavation req'd? N/A Surface Area: N/A Volume: N/AIs fill below OHW req'd? N/A Surface Area: N/A Volume: N/AIs riprap req'd? No**Work Road Information:**Is work road(s) required? No Location: _____ Top width: _____ ftIs fill below OHW req'd? _____ Surface Area: _____ ft² Volume: _____ yd³

Are pipes required to meet backwater criteria? _____

Detour Information:Is a detour bridge required? No Location in relation to existing bridge: _____

Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____

Volume of fill below OHW: _____ yd³ Surface area: _____ ft²

BRIDGE DESIGN INFORMATIONJob Number CA0601 FAP Number 9991 County SalineJob Name I-30 Widening from Highway 70 to Sevier StreetDesign Engineer Shahriar Azad, PE (Bridgefarmer and Associates, Inc.)**Description of Existing Bridge:**Bridge Number No Existing Bridge over _____

Bridge Location: Rte: _____ Section: _____ Log Mile: _____

Length: _____ Br. Rdwy. width: _____ Deck width (Out-to-Out) _____

Type Construction: _____

Deficiencies _____

HBRRP Eligibility: _____ Qualifying Code: _____ Sufficiency Rating: _____

Proposed Improvements:Length: 533'-0⁷/₁₆" Br. Rdwy. Width: 36'-0" Deck Width (Out-to-out) 39'-2"Travel Lanes: 2 Lanes @ 12'-0" Each Shoulder Width: 8' outside, 4' insideSidewalks: No Location: _____ Width: _____**Construction Information**Location in relation to existing bridge: New bridge NW of existing bridges over river reliefSuperstructure Type: Continuous Composite W-Beam UnitSpan Lengths: 63'-73'-70'-59', 59'-70'-73'-63'Substructure Type: Trestle Pile BentsOrdinary High Water Elev. 273.5 No. of Bents inside OHW Contours: 0

Concrete Volume below OHW: _____ Vol. Bent Excavation: _____ Is backfill req'd? _____

Is Channel excavation req'd? No Surface Area: _____ Volume: _____Is fill below OHW req'd? No Surface Area: _____ Volume: _____Is riprap req'd? Yes**Work Road Information:**Is work road(s) required? Yes Location: See Attached Plans Top width: 14 ft-25 ftIs fill below OHW req'd? Yes Surface Area: 584 ft² Volume: 6 yd³Are pipes required to meet backwater criteria? No**Detour Information:**Is a detour bridge required? No Location in relation to existing bridge: _____

Length: _____ ft Br. Rdwy. Width: _____ ft Deck Elevation: _____

Volume of fill below OHW: _____ yd³ Surface area: _____ ft²



CA0601 I-30 Widening, From Highway 70 to Sevier Street

Attachment E

Tribal Consultation Letters

The following coordination letter was sent to the tribes and contacts listed below on September 9, 2014:

1. Mr. Earl J. Barbry, Jr.
Tribal Historic Preservation Officer
Tunica-Biloxi Tribe of Louisiana, Inc.
151 Melacon Drive
Marksville, Louisiana 71351

2. Mr. Everett Bandy
Tribal Historic Preservation Officer
Quapaw Tribe of Oklahoma
Post Office Box 765
Quapaw, Oklahoma 74363-0765

3. Ms. Rebecca Brave
Tribal Historic Preservation Officer
The Osage Nation
P.O. Box 779
Pawhuska, Oklahoma 74056

4. Dr. Ian Thompson
Tribal Historic Preservation Officer
The Choctaw Nation of Oklahoma
Post Office Box 1210
Durant, Oklahoma 74702-1210

5. Mr. Robert Cast
Tribal Historic Preservation Officer
Caddo Nation
Post Office Box 487
Binger, Oklahoma 73009



U.S. Department
of Transportation
**Federal Highway
Administration**

Arkansas Division

September 9, 2014

700 West Capitol Ave
Suite 3130
Little Rock AR 72201
(501) 324-6430

In Reply Refer To:
AHTD Job CA0601
Widening of I-30 (US Highway 70 to
Sevier Street)
Saline County
HDA-AR

Mr. Earl J. Barbry, Jr.
Tribal Historic Preservation Officer
Tunica-Biloxi Tribe of Louisiana
151 Melacon Drive
Marksville, LA 71351

Dear Mr. Earl J. Barbry, Jr.:

This letter is written in order to initiate consultation between the Federal Highway Administration, Arkansas Division Office and the Tunica-Biloxi Tribe of Louisiana regarding a federal-aid highway project that may potentially affect ancestral lands or properties that may be of religious or cultural significance to your Tribe.

The Arkansas State Highway and Transportation Department (AHTD) plans to widen approximately five miles of Interstate 30 (I-30), and to improve interchanges at Exit 111/ US 70, Exit 114/State Highway 229 (AR 229), and Exit 116/AR 229/West Sevier Street. The project is located in Saline County Arkansas (see attached location map). In an effort to identify any archeological sites within the proposed project area, the AHTD is planning to conduct a cultural resources survey of the project area. To date, a survey of existing records regarding previously recorded archeological sites has been conducted and three archeological sites are listed in the records. Copies of these records are attached.

Please review this information and notify us of any constraints or concerns that you may have regarding this undertaking. We would greatly appreciate your input regarding not only this project but also sites or properties in the immediate area that might be of cultural or religious significance to your Tribe. If you have any questions or need additional information, please contact me at (501) 324-6430.

Sincerely,

Randal Looney
Environmental Coordinator

Enclosure

CA0601

12017730/1

From: Randal.Looney@dot.gov
To: [Wilks, Diana](#)
Subject: FW: AHTD CA0601
Date: Tuesday, October 14, 2014 4:13:15 PM

Randal J. Looney

FHWA – Arkansas Division Office
700 West Capitol Ave., Rm 3130
Little Rock, AR 72201-3298
501-324-6430
fax: 501-324-6423

From: Everett Bandy [mailto:EBandy@quapawtribe.com]
Sent: Friday, October 10, 2014 9:47 AM
To: Looney, Randal (FHWA)
Subject: AHTD CA0601

The Quapaw Tribe Historic Preservation Office has received notification of the proposed project listed as **AHTD CA0601**.

The Quapaw Tribe concurs with your findings that a cultural resources survey of the project area is necessary,

Please contact the Quapaw Tribe Historic Preservation Office with your response to this request. This office looks forward to receiving and reviewing the cultural resource survey report for the proposed project. The Quapaw Tribe requires that cultural resource survey personnel and reports follow the Secretary of Interior's standards and guidelines.

Should you have any questions or need any additional information, please feel free to contact me at the number listed below. Thank you for consulting with the Quapaw Tribe on this matter.

Sincerely,
-Everett Bandy, THPO
Tribal Historic Preservation Office
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363
(w) 918-542-1853

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From: Lindsey Bilyeu [<mailto:lbilyeu@choctawnation.com>]
Sent: Monday, October 27, 2014 1:10 PM
To: Wilks, Diana
Subject: RE: AHTD Job CA0601 Widening of I-30 (US Hwy 70 to Sevier Street), Saline Co., AR

Ms. Wilks,

Thank you for sending the shapfiles for the project. This project does lie in our Trail of Tears Removal Route that passes through Saline Co., AR. Please forward our office a copy of the cultural resources survey once it is completed. If you have any questions, please contact our office at 580-924-8280 ext. 2631.

Thank You,

Lindsey D. Bilyeu
NHPA Senior Section 106 Reviewer
Historic Preservation Department
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74701
580-924-8280 ext. 2631

From: Wilks, Diana [<mailto:Diana.Wilks@ahtd.ar.gov>]
Sent: Monday, October 27, 2014 10:58 AM
To: Lindsey Bilyeu
Cc: Looney, Randal
Subject: FW: AHTD Job CA0601 Widening of I-30 (US Hwy 70 to Sevier Street), Saline Co., AR

Lindsey,

I have attached the CA0601 shape files for your use. Please don't hesitate to contact me or Randall Looney if you need any additional information.

Diana Wilks
Section Head, Cultural Resources
Arkansas Highway and Transportation Department
P.O. Box 2261, Little Rock, AR 72209
www.arkansashighways.com
(501) 569-2283

From: Lindsey Bilyeu [<mailto:lbilyeu@choctawnation.com>]
Sent: Tuesday, October 21, 2014 4:06 PM
To: Looney, Randal (FHWA)
Subject: RE: AHTD Job CA0601 Widening of I-30 (US Hwy 70 to Sevier Street), Saline Co., AR

Dear Randal,

The Choctaw Nation of Oklahoma thanks the FHWA, Arkansas Division, for the correspondence regarding the above referenced project. A portion of Saline Co., AR lies in the Choctaw Nation of Oklahoma's area of historic interest. Please send our office the GPS coordinates for this project so that we may determine if the APE is within our area of interest. If you have any questions, please contact our office at 580-924-8280 ext. 2631.

Thank You,

Lindsey D. Bilyeu
NHPA Senior Section 106 Reviewer
Historic Preservation Department
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74701
580-924-8280 ext. 2631



TRIBAL HISTORIC PRESERVATION OFFICE

Date: November 7, 2014

File: 1415-726AR-10

RE: AHTD Job CA0601 widening of approximately 5 miles of interstate 30, and improve interchanges at exit 111/US 70, exit 114 state highway 229, and exit 116/AR 229/West Servier St.

Arkansas State Highway and Transportation Department
Randal Looney
700 West Capitol Ave., Suite 3130
Little Rock, AR 72201

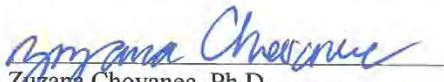
Dear Mr. Looney,

The Osage Nation Historic Preservation Office has received notification and accompanying information for the proposed project listed as AHTD Job CA0601 widening of approximately 5 miles of interstate 30, and improve interchanges at exit 111/US 70, exit 114 state highway 229, and exit 116/AR 229/West Servier St. . The Osage Nation requests that a cultural resources survey be conducted for this project.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. The Osage Nation anticipates reviewing and commenting on the planned Phase I cultural resources survey report for the proposed AHTD Job CA0601 widening of approximately 5 miles of interstate 30, and improve interchanges at exit 111/US 70, exit 114 state highway 229, and exit 116/AR 229/West Servier St. .

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.


Zuzana Chovanec, Ph.D.
Archaeologist

RECEIVED
AHTD
NOV 19 2014
ENVIRONMENTAL
P-2-1



CA0601 I-30 Widening, From Highway 70 to Sevier Street

Attachment F

Noise Assessment

Final Noise Study Report

**Interstate 30 Widening Noise Analysis
From East of US 70 Interchange
To East of W Sevier St / W South St Interchange
FAP No. ACNHPP-030-2(267)111
Job No. CA0601
Saline County, Arkansas**



Submitted to:



Prepared By:

Kimley»»Horn

Executive Summary

This report documents the results of a noise analysis and abatement design as part of the project widening Interstate 30 (I-30) in Saline County. The purpose of this project is to enhance the transportation connection through central Arkansas, increase capacity, and improve traveler safety. Total length of the project is approximately 5 miles, extending generally from US Highway 70 (US 70) to the W Sevier Street/W South Street Interchange.

Six noise study areas (NSA) were identified along the project, listed below roughly from west to east:

1. Residences along Frontage Road, north of I-30 between the US 70 Interchange and Mountain View Road, including those on N Beggs Road, Herzfeld Boulevard, Beaty Road, and Mountain View Road.
2. Residences and two churches along Frontage Road, south of I-30 between the US 70 Interchange and the Inspection Station, including those on S Beggs Road, Bragg Place, JK Drive, Mountain View Cutoff, and Pawnee Drive.
3. Residences along Frontage Road and Highway 67, south of I-30, between the Inspection Station and the AR 229 Interchange.
4. Residences, a motel, and school property between the AR 229/W South Street Intersection and the W Sevier Street/W South Street Interchange, north of I-30, including those on Randel Street, King Road, Troutt Block, Pike Block, Bass Lane, Crouch Block, W Sevier Street, and Woodland Drive.
5. Residences, churches, and a motel south of I-30 between the I-30 EB off ramp and the W Sevier Street/W South Street Interchange, including those along Fairfield Road, Frontage Road, and Airline Drive.
6. Residences and a church south of I-30 and east of the W Sevier Street/W South Street Interchange, including those along W South Street, Jefferson Street, Rasburry Street, N Conrad Street, and W Sevier Street.

The FHWA Traffic Noise Model (TNM 2.5) computer program was used to calculate “with-project” peak hour equivalent sound levels in the design year (2038) for noise-sensitive receivers in each noise study area. Design Year 2038 PM peak hour traffic projections developed for the *CA0601 Interchange Justification Report (IJR)* were used in the noise modeling. The modeling identified future exterior noise impacts, as defined in the AHTD *Policy on Highway Traffic Noise Abatement* (October 15, 2015), for all of the study areas.

Based on the *CA0601 Interchange Justification Report* Design Year 2038 peak hour traffic projections, it was determined that the NSAs along the I-30 corridor experience the worst noise hour during the PM peak hour.

Abatement is generally evaluated when impacts are predicted to occur. Noise abatement measures may include alteration of horizontal and vertical alignment and traffic management measures (such as reducing speed limits or prohibition of heavy trucks). However, these forms of mitigation are not feasible for this project. Noise barriers were determined to be the only available abatement measure to reduce noise levels for impacted areas within this project.

Noise barriers were studied for “feasibility” and “reasonableness” at all areas where impacts were predicted. Barriers were considered for the impacted receptors in all NSAs.

“Feasibility” means that a noise barrier will provide at least a five decibel reduction in the one-hour equivalent sound level for at least one impacted residence. Additionally, the noise barrier should not pose any major problems related to design, construction, safety, drainage, maintenance or other factors.

Noise barriers were found to be acoustically feasible for NSAs 1, 2, 3, 4, 5, and 6 because a minimum of 5 dB(A) reduction in design year highway traffic noise levels for at least one impacted receiver was achieved. However, feasibility alone does not dictate whether a noise barrier will be built. Each noise barrier must also pass a “reasonableness” test.

“Reasonableness” is based on a number of factors with regard to all of the individual, specific circumstances of a particular project, including the cost of the noise barrier averaged over the number of residences that are shown in the modeling to benefit from the barrier. To “benefit” means that the sound levels would be reduced five or more decibels by the barrier. The AHTD *Policy on Highway Traffic Noise Abatement* specifies a noise reduction goal of 8 dB(A) that must be achieved for at least one impacted receiver in order for a noise abatement measure to be considered reasonable.

The studied noise barriers for NSAs 1, 2, 3, 4, 5, and 6 were found to not be reasonable because the average cost per benefited residence exceeded the AHTD threshold criterion of \$36,000 per benefited residence.

Separate from these abatement measures, AHTD encourages local communities and developers to practice noise compatible planning in order to avoid future noise impacts. Generalized noise predictions for the Design Year 2038 were made for areas along I-30 where vacant and possibly developable lands exist. The results estimate that exterior residential activities may be impacted approximately 700 feet from centerline of the nearest travel lane of I-30, depending on the amount of shielding provided by surrounding buildings. The modeled noise levels and associated impact distance at any particular site along I-30 will vary depending on the actual terrain and other conditions at that site. This information is being included to make local officials and planners aware of anticipated highway noise levels, with the goal that any future development along I-30 will be compatible with these levels.

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1.0 Introduction

This report documents the results of a noise analysis and abatement design as part of the project widening Interstate 30 (I-30) in Saline County. The purpose of this project is to enhance the transportation connection through central Arkansas, increase capacity, and improve traveler safety. Total length of the project is approximately 5 miles, extending generally from US Highway 70 (US 70) to the W Sevier Street/ W South Street Interchange. Figure 1 shows the project area.

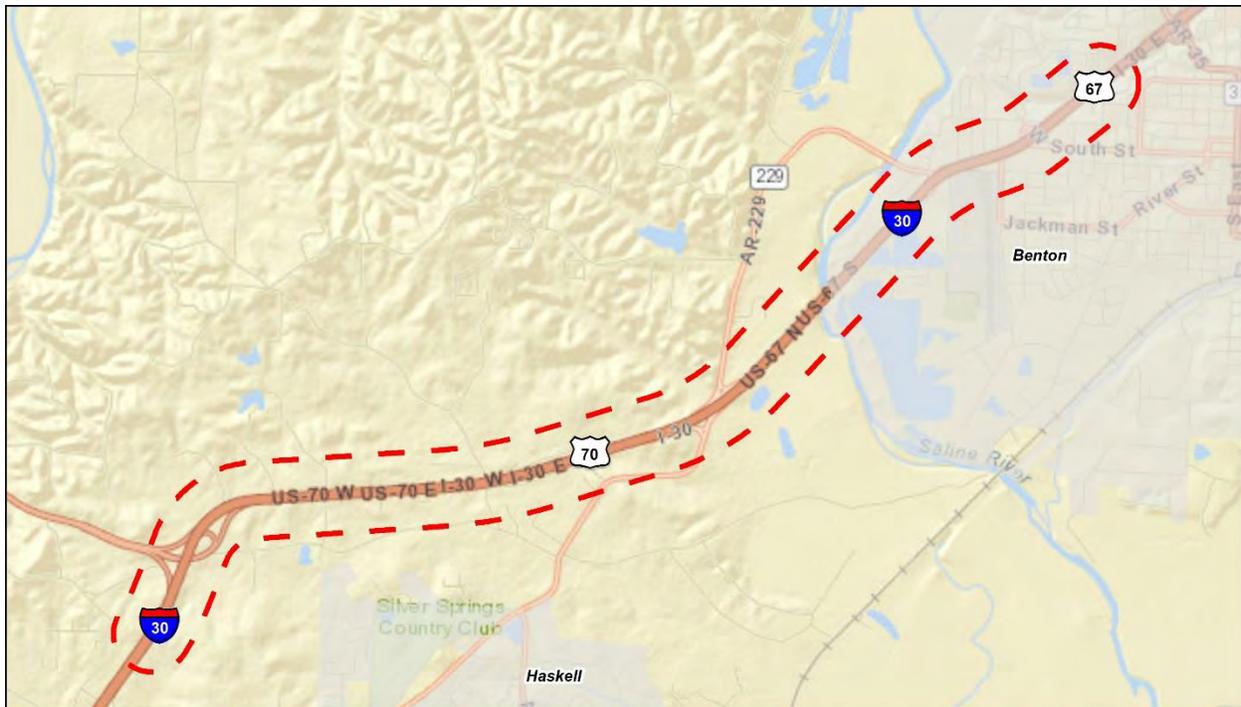


Figure 1: Project Area

This study has been prepared in accordance with the FHWA noise standards, *Procedures for Abatement of Highway Traffic and Construction Noise*, 23 CFR 772 [1], and the AHTD *Policy on Highway Traffic Noise Abatement* [2]. The noise analysis included the following tasks:

1. Identification of noise sensitive areas and associated receptors (discrete or representative locations in a noise study area (NSA) for the land uses listed in 23 CFR 772) in the vicinity of the project corridor;
2. Determination of existing sound levels at selected receptors to characterize the existing noise environment in the project area;
3. Determination of future sound levels with and without the project at the receptors;
4. Determination of impacted receptors;
5. Evaluation of noise abatement for impacted areas;
6. Discussion of construction noise; and
7. Coordination with local officials.

Each of these analysis steps is discussed below, following a discussion of basic terminology and AHTD's criteria for determining noise impacts.

1.1 Traffic Noise Terminology

Traffic noise levels are expressed in terms of the hourly, A-weighted equivalent sound level in decibels [dB(A)]. A sound level represents the level of the rapid air pressure fluctuations caused by sources such as traffic that are heard as noise. A decibel is a unit that relates the sound pressure of a noise to the faintest sound the human ear can hear. The A-weighting refers to the amplification or attenuation of the different frequencies of the sound (subjectively, the pitch) to correspond to the way the human ear “hears” these frequencies.

Generally, when the sound level exceeds the mid-60 dB(A) range, outdoor conversation in normal tones at a distance of three feet becomes difficult. A 9-10 dB(A) increase in sound level is typically judged by the listener to be twice as loud as the original sound while a 9-10 dB(A) reduction is judged to be half as loud. Doubling the number of sources (i.e., vehicles) will increase the hourly equivalent sound level by approximately 3 dB(A), which is usually the smallest change in hourly equivalent A-weighted traffic noise levels that people can detect without specifically listening for the change.

Because most environmental noise fluctuates from moment to moment, it is standard practice to condense data into a single level called the equivalent sound level (L_{eq}). The L_{eq} is a steady sound level that would contain the same amount of sound energy as the actual time-varying sound evaluated over the same time period. The L_{eq} averages the louder and quieter moments, but gives much more weight to the louder moments in the averaging. For traffic noise assessment purposes, L_{eq} is typically evaluated over the worst one-hour period and is written as $L_{eq(h)}$.

The term insertion loss (IL) is generally used to describe the reduction in $L_{eq(h)}$ at a location after a noise barrier is constructed. For example, if the $L_{eq(h)}$ at a residence before a barrier is constructed is 75 dB(A) and the $L_{eq(h)}$ after a barrier constructed is 65 dB(A), then the insertion loss would be 10 dB(A).

1.2 Criteria for Determining Impacts

Noise impacts are determined by comparing future “design year” project worst-hour $L_{eq(h)}$ values at areas of frequent human use to: (1) a set of Noise Abatement Criteria (NAC) for different land use categories, and (2) existing $L_{eq(h)}$ values. The FHWA noise standards (23 CFR 772) and AHTD’s noise policy state that when traffic noise impacts have been identified, then noise abatement should be considered.

Table 1 shows the land uses that are classified as Activity Categories A - G and the corresponding NAC.

A receptor is impacted in either of two ways:

1. The predicted, worst-hour, design year $L_{eq(h)}$ approaches or exceeds the NAC, even if there is not a substantial increase over the existing levels. “Approach” is defined by AHTD as one dB(A) less than the appropriate NAC. As an example, the NAC for Activity Category B and C land uses is 67 dB(A). An impact would occur if the design year $L_{eq(h)}$ is predicted to be 66 dB(A) or higher at a point of frequent exterior human use for a land use in either category.
2. The predicted, worst-hour, design year $L_{eq(h)}$ “substantially” exceeds the existing $L_{eq(h)}$, even if the NAC is not approached or exceeded. AHTD defines “substantially” as 10 or more dB(A).

Table 1. Noise Abatement Criteria in 23 CFR 772

Activity Category	Activity Criteria ¹ L _{eq(h)} [dB(A)]	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B²	67	Exterior	Residential
C²	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites ⁴ , schools, television studios, trails, and trail crossings
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E²	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
F	-	-	Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G³	-	-	Undeveloped lands that are not permitted

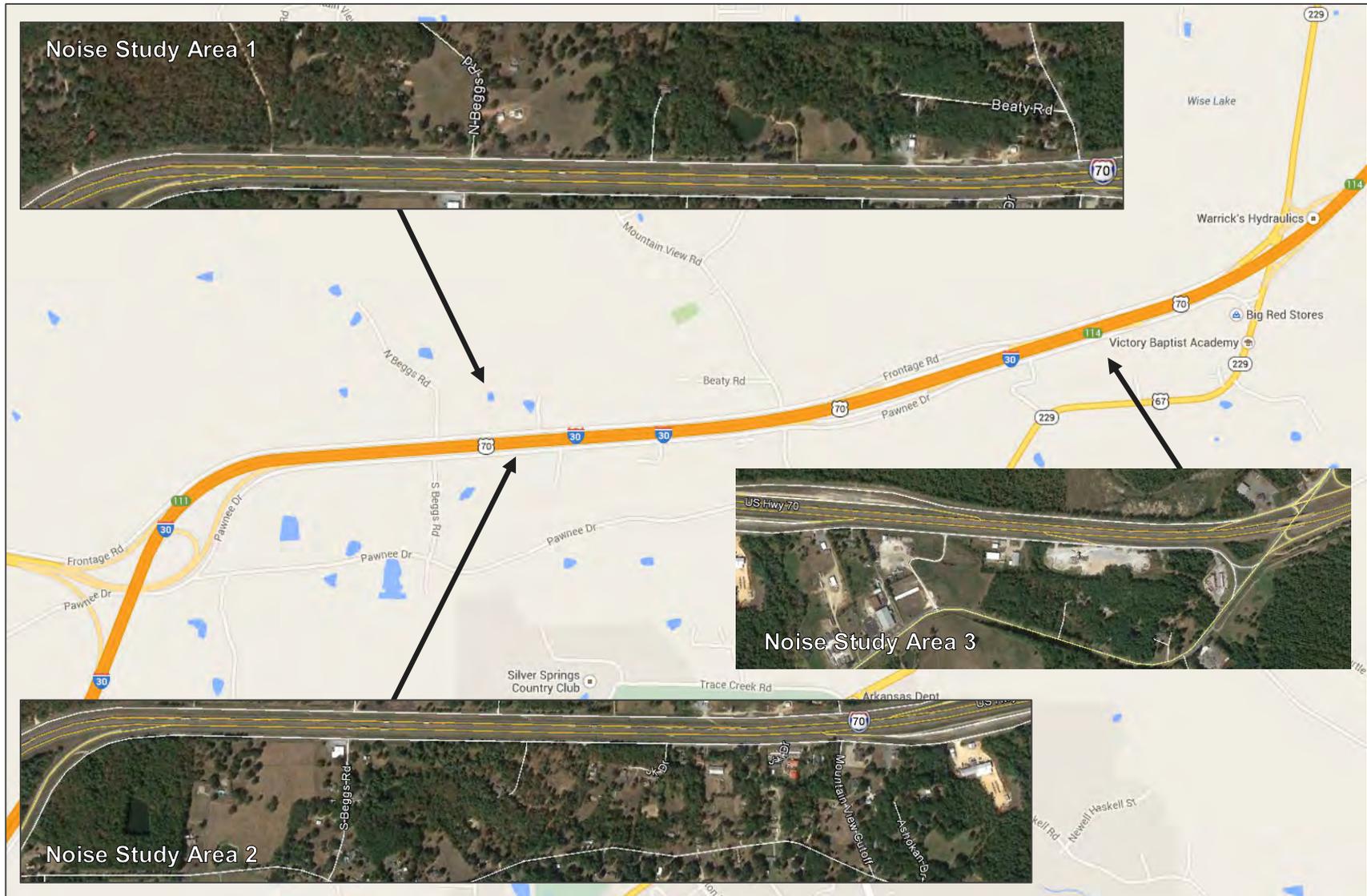
1. The Leq(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement.
2. Includes undeveloped lands that have been permitted for this Activity Category.
3. Indicates no building permits on or before the date of public knowledge.
4. Section 4(f) property means publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance, as initially defined in Section 4(f) of the Department of Transportation Act of 1966 and addressed in 23 CFR 774, Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f)).

2.0 Identification of Noise Sensitive Areas and Receptors

Review of available electronic mapping, as well as field reconnaissance, led to the selection of six study areas with potential for noise impacts, called Noise Study Areas (NSAs). These areas are shown in Figure 2 and Figure 3. Table 2 lists the relevant associated land uses in each NSA that are in the vicinity of the edge of the outside travel lane of I-30 by Activity Category. The applicable NAC for each Activity Category were shown in Table 1.

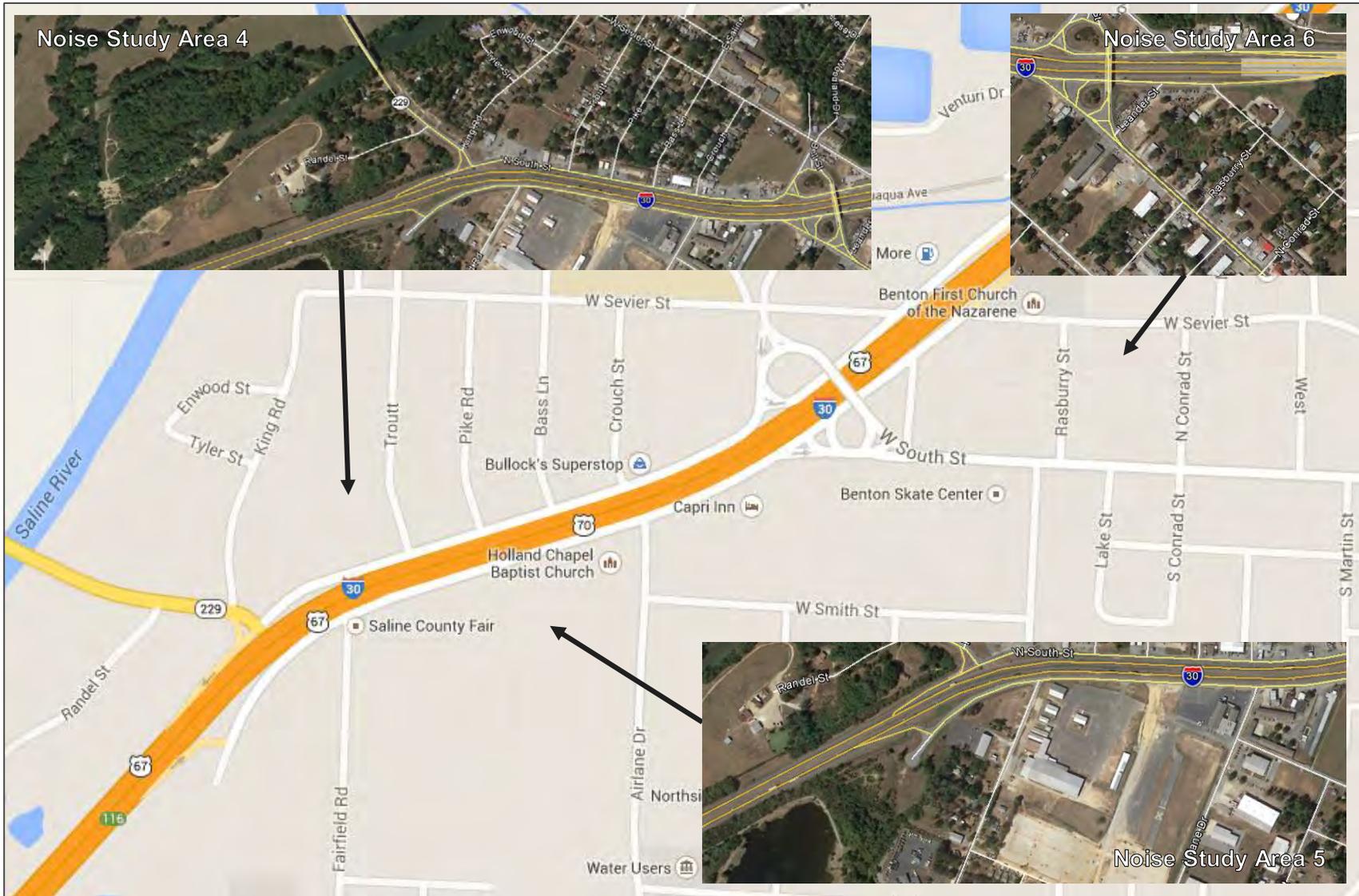
Table 2: Noise Study Area Descriptions

NSA	Description
1	<p>North of I-30 between US 70 Interchange and AR 229 Interchange: <i>Activity Category B (Exterior)</i> – Residences on Frontage Road, N Beggs Road, Herzfeld Boulevard, Beaty Road, and Mountain View Road</p>
2	<p>South of I-30 between US 70 Interchange and Inspection Station: <i>Activity Category B (Exterior)</i> – Residences on Pawnee Drive, S Beggs Road, Bragg Place, JK Drive, Mountain View Cutoff, and Ashokan Drive <i>Activity Category C (Exterior)</i> – Jehovah’s Witnesses Church and Bible Missionary Church</p>
3	<p>South of I-30 between Inspection Station and AR 229 Interchange: <i>Activity Category B (Exterior)</i> – Residences on Pawnee Drive and US 67/AR 229</p>
4	<p>North of I-30 between AR 229/W South Street Intersection and the W Sevier Street/W South Street Interchange: <i>Activity Category B (Exterior)</i> – Residences on Randel Street, King Road, AR 229, Troutt Block, Pike Block, Bass Lane, Crouch Block, W Sevier Street, Brents Ford Road, and Woodland Drive <i>Activity Category C (Exterior)</i> – Saline River Boat Ramp and W.C. Caldwell Elementary School recreational areas <i>Activity Category E (Exterior)</i> – Troutt Motel</p>
5	<p>South of the I-30 between off ramp and W Sevier Street/W South Street Interchange: <i>Activity Category B (Exterior)</i> – Residences on Fairfield Road, W South Street, Jefferson Street, and in the Castle Oaks Apartment Home complex <i>Activity Category C (Exterior)</i> – Sunset Lake Park Walking Trail, Holland Chapel Baptist Church, and Family Life Center <i>Activity Category E (Exterior)</i> – Capri Inn</p>
6	<p>South of I-30 and East of W Sevier Street/W South Street Interchange: <i>Activity Category B (Exterior)</i> – Residences on W Sevier Street, Rasburry Street, Jefferson Street, N Conrad Street, and W South Street <i>Activity Category C (Exterior)</i> – First Church of the Nazarene</p>



Base map: Google Maps (2014)

Figure 2: Noise Study Areas 1-3



Base map: Google Maps (2014)

Figure 3: Noise Study Areas 4-6

The land uses along the project corridor studied for noise impacts were either identified as Activity Category B, Activity Category C, or Activity Category E. Activity Category B receptors are located at exterior areas of frequent human use, such as a patio or yard. Multifamily dwellings, such as an apartment complex, have receptors located at each ground floor unit with a patio and each upper floor unit with a balcony. Activity Category C receptors are either located at individual sites or can involve properties with multiple areas of diverse activity and usage characteristics. The receptor identification metrics for Activity Category C land uses outlined in the AHTD *Policy on Highway Traffic Noise Abatement* was followed for this analysis. Activity Category F land uses, commercial and industrial facilities, are located throughout the project area.

A search of building permits at the time of the analysis revealed no active building permits for new noise sensitive land uses. Any subsequent building permits for noise sensitive land uses would be after the date of public knowledge for the project, and AHTD would not be responsible for noise abatement.

3.0 Measurement of Existing Sound Levels

Noise measurements were conducted at several noise sensitive land use locations in the project area on September 18, 2014. Table 3 summarizes the measured equivalent sound levels at each of the measurement locations. Figure 4 and Figure 5 show the measurement locations. The individual locations' noise measurement results are provided in Appendix A. Field data sheets and photographs are available upon request.

Short-term noise measurements at these locations were conducted by making a series of consecutive measurements in one-minute intervals, over a 15 minute period at each site, repeated twice. If these measurements differed by more than 3 dB(A), a third measurement was taken, unless the variation could be explained by other noise events occurring during the measurement period. Background noises (i.e., local traffic, dog barking, sirens, etc.) during these measurements were noted, and the corresponding one-minute measurement intervals were eliminated from the calculation of the measured sound level for the overall measurement period. An ambient noise measurement was taken at one location to obtain desirable statistical accuracy for the background noise levels.

Table 3: Measured Existing Equivalent Sound Levels at Measurement Locations

Location (Setup)	Noise Study Area	Date	Period	Measured L_{eq} [dB(A)]
S Beggs Rd (1.1)	2	9/18/2014	9:18 – 9:33 AM	66
			9:35 – 9:50 AM	65
S Beggs Rd (1.2)	2	9/18/2014	9:18 – 9:33 AM	63
			9:35 – 9:50 AM	62
S Beggs Rd (1.3)	2	9/18/2014	9:18 – 9:33 AM	58
			9:35 – 9:50 AM	57
Fairfield Rd and Jackmon St (2.1)	5	9/18/2014	10:38 – 11:08 AM	56

Location (Setup)	Noise Study Area	Date	Period	Measured L_{eq} [dB(A)]
Troutt (3.1)	4	9/18/2014	11:28 – 11:43 AM	67
			11:51 AM – 12:06 PM	68
Troutt (3.2)	4	9/18/2014	11:28 – 11:43 AM	59
			11:51 AM – 12:06 PM	60
Troutt (3.3)	4	9/18/2014	11:28 – 11:43 AM	50
			11:51 AM – 12:06 PM	53

As indicated in Table 3, the existing sound levels at the exterior measurement locations were between 50 dB(A) and 68 dB(A). The lower sound levels were recorded at distant measurement locations and the sound levels in the high 60 dB(A) range were recorded at the first row residences closest to I-30.



Base Image: Google Maps (2014)

Figure 4: Noise Measurement Locations 1.1-1.3



Base Image: Google Maps (2014)

Figure 5: Noise Measurement Locations 2.1 and 3.1-3.3

4.0 Model Validation

AHTD policy requires validation of the FHWA Traffic Noise Model (TNM 2.5) computer program that is used to calculate worst-hour equivalent sound levels for receptors in each NSA for the existing scenario, and for the Build Alternative in the future design year (2038). Validation involves taking noise measurements at selected points near the existing roadway while taking simultaneous vehicle classification counts of the traffic and estimating travel speed. Then, the traffic counts are factored up to be hourly volumes, and along with the speeds, are entered into a TNM 2.5 model that has been created for the existing highway situation. The modeled levels are compared to the measured levels, and if they are within 3 dB(A) of the measured levels, the model is said to be validated.

Model validation noise measurements were made on September 18, 2014, with simultaneous traffic data collection. Traffic was videotaped for classification counting in the office. The noise measurement locations are listed in Table 4 and labeled on Figure 4 and Figure 5. Appendix A contains the detailed measurement results.

Table 4 lists the validation locations and presents the validation results. As shown in the table, the difference in the predicted and measured levels for the validation locations are all equal to or less than 3 dB(A). A high volume of heavy trucks were observed during the measurements, and thus TNM over-predicted noise levels at each measurement location.

Table 4: Model Validation Results

Location	Setup	Measured L_{eq} [dB(A)]	Predicted L_{eq} [dB(A)]	Predicted- Measured Difference [dB(A)]
S Beggs Rd	1.1	66	68	2
	1.2	63	64	1
	1.3	58	61	3
Fairfield Rd and Jackmon St	2.1	56	56	0
Troutt	3.1	68	71	3
	3.2	60	62	2
	3.3	53	56	3

5.0 Determination of Existing and Future One-Hour Equivalent Sound Levels

The FHWA TNM 2.5 computer program was used to calculate loudest-hour equivalent sound levels for the receptors in each NSA for the existing scenario and the future alternative. These receptors included numerous locations representative of each land use and varying distances up to approximately 700 feet from the centerline of the nearest I-30 travel lane.

Existing AM and PM peak hour traffic volumes, including truck percentages, were developed by AHTD for use in the noise modeling for the Existing Scenario. Design Year 2038 AM and PM peak hour traffic projections were developed for the *CA0601 Interchange Justification Report* and were used in the noise modeling for the Build Scenario.

Based on the *CA0601 Interchange Justification Report* Design Year 2038 peak hour traffic projections, it was determined that the NSAs along the I-30 corridor experience the worst noise hour during the PM peak hour.

For multiple-lane roadways, multiple travel lanes were modeled as a single TNM “roadway”. The posted speed limits of 70 mph for cars and 65 mph for trucks were used for I-30, and design speeds were used for interchange ramps.

Receptors were modeled by TNM “receiver” points at areas of frequent human use of a property. For single-family residences, that area could be the front or back yard. For apartments and condominiums, that area could be a patio or balcony or a common use area. For the hotels and recreational areas, receptors were modeled at the common use areas. A TNM receiver could represent more than one receptor, such as several adjacent single-family residences or condominium balconies, or the common use area for an apartment building.

Large buildings were modeled as noise barriers to properly account for the shielding of the traffic noise that they provide to receptors. Single-family houses were modeled as individual noise barriers to account for the shielding that they would provide. Significant terrain features were also modeled. The default ground surface of lawn grass was used, with any large areas of paved ground specifically modeled as pavement.

Appendix C provides plan view plots of the Traffic Noise Models for the project corridor.

The predicted sound levels and the resulting impacts are discussed in the following section for each NSA.

6.0 Impact Determination Analysis

6.1 Summary of Impacts

An impact assessment was completed for the build alternative for each NSA. As noted previously, a receptor is impacted in two ways:

1. The predicted, worst-hour, design year $L_{eq(h)}$ approaches or exceeds the NAC. AHTD defines “approach” as 1 dB(A) less than the NAC. These levels apply at areas of frequent human use.
2. The predicted, worst-hour, design year $L_{eq(h)}$ “substantially” exceeds the existing $L_{eq(h)}$. “Substantially” is defined by AHTD as an increase of 10 or more dB(A).

Due to the nature of the project – widening of an Interstate – experience shows that increases over existing levels will be small and below the AHTD criterion of a 10 or more dB increase. Therefore, no receptors will be impacted by a substantial noise increase.

Table 5 summarizes the predicted impacts in each NSA for the Build Scenario. The impacts are then described in detail in the sections that follow.

As shown in Table 5, there will be a total of 88 impacted residential properties (Activity Category B), 8 impacts to Category C properties, and 1 impact to Category E properties. All of the impacts will be in terms of approaching or exceeding the NAC. NSA 1 is predicted to have 10 impacts. NSA 2 is predicted to have 26 impacts. NSA 3 is predicted to have 4 impacts. NSA 4 is predicted to have 26 impacts. NSA 5 is predicted to have 16 impacts. NSA 6 is predicted to have 15 impacts.

Table 5: Summary of Noise Impacts for the Build Scenario (Year 2038)

Noise Study Area	Design Year Sound Levels, $L_{eq(h)}$, [dB(A)]	Increase over Existing Sound Levels, [dB(A)]	Impacts based on NAC?	Impacts based on Substantial Increase	Number and Type of Impacted Receptors
1	Activity Category B: 61-76	2 to 9	Yes	No	10 single-family homes
2	Activity Category B: 62-73 Activity Category C: 76-77	3 to 7	Yes	No	24 single-family homes 2 church exterior areas
3	Activity Category B: 59-75	4 to 5	Yes	No	4 single-family homes
4	Activity Category B: 52-76 Activity Category C: 56-68 Activity Category E: 80	1 to 5	Yes	No	23 single-family homes 2 recreational areas 1 motel exterior area
5	Activity Category B: 51-75 Activity Category C: 63-76 Activity Category E: 66	2 to 6	Yes	No	8 single-family homes 6 apartment units 1 recreation area 1 church exterior area
6	Activity Category B: 55-75 Activity Category C: 73-76	3 to 5	Yes	No	13 single-family homes 2 church exterior areas

6.2 Noise Study Area 1

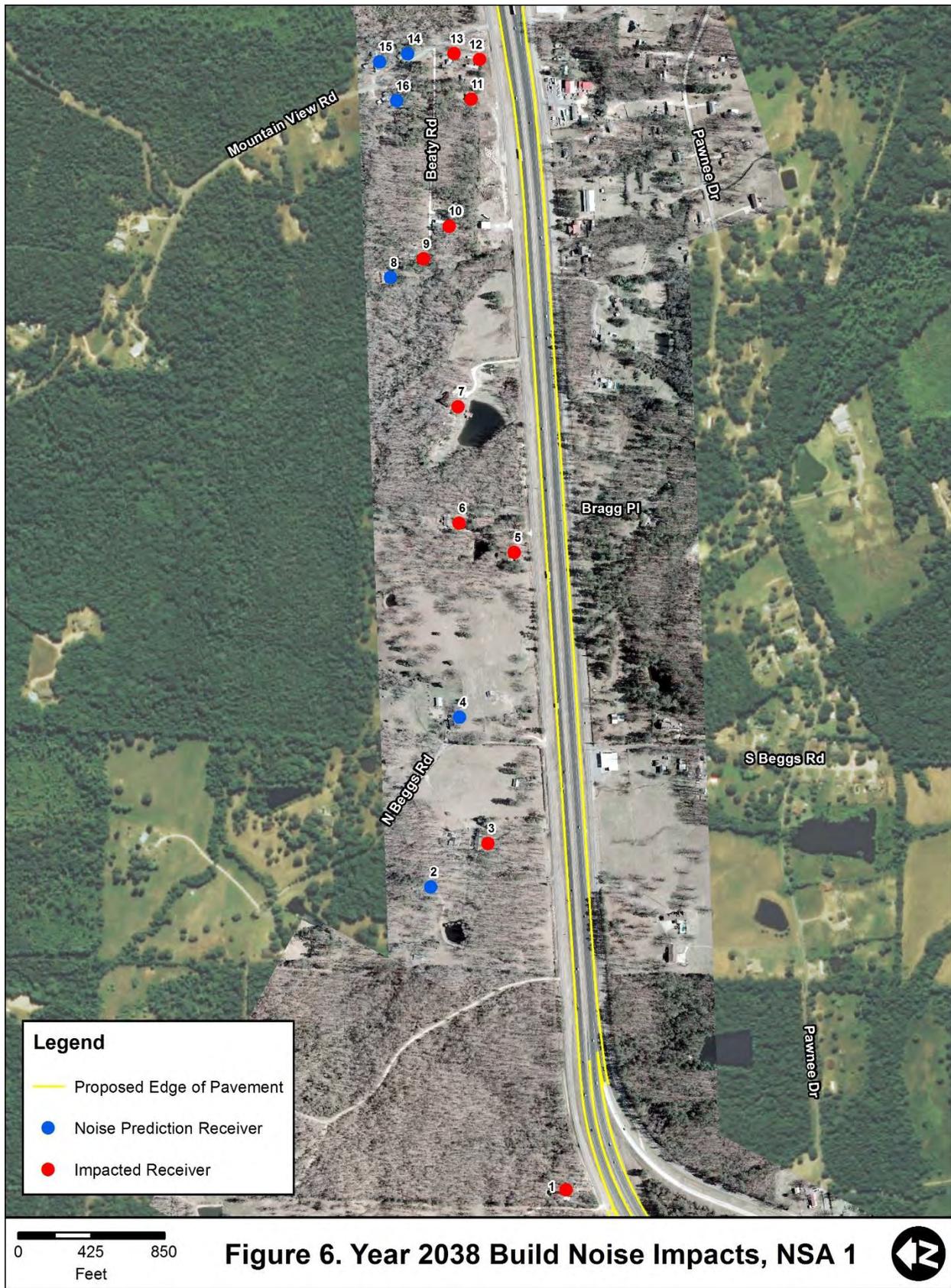
Table 6 lists the TNM receivers in NSA 1 and the one-hour equivalent sound levels for the Existing and Design Year 2038 Build scenarios. The Design Year 2038 PM peak hour was determined to be the worst noise hour for this NSA. Levels in bold italics represent impacts. Figure 6 shows the impacts for the area.

Table 6: Year 2038 One-Hour Equivalent Sound Levels and Impacts, NSA 1

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
11174 I-30 N (R 1)	1	<i>72</i>	<i>74</i>	2	1
11350 I-30 N (R 2)	1	52	61	9	-
11500 I-30 N (R 3)	1	61	<i>69</i>	8	1
2417 N BEGGS RD (R 4)	1	57	61	4	-
12000 I-30 N (R 5)	1	<i>72</i>	<i>76</i>	4	1
12050 I-30 N (R 6)	1	60	<i>67</i>	7	1
12180 I-30 N (R 7)	1	<i>66</i>	<i>70</i>	4	1
4652 BEATY RD (R 8)	1	59	65	6	-
4638 BEATY RD (R 9)	1	63	<i>67</i>	4	1
4583 BEATY RD (R 10)	1	<i>66</i>	<i>70</i>	4	1
12464 I-30 N (R 11)	1	<i>67</i>	<i>71</i>	4	1
123 MOUNTAIN VIEW RD (R 12)	1	<i>72</i>	<i>76</i>	4	1
145 MOUNTAIN VIEW RD (R 13)	1	<i>66</i>	<i>71</i>	5	1
196 MOUNTAIN VIEW RD (R 14)	1	59	65	6	-
228/232 MOUNTAIN VIEW RD (R 15)	2	57	63	6	-
231 MOUNTAIN VIEW RD (R 16)	1	60	64	4	-
Predicted "Build" Alternative Design Year 2038 Traffic Noise Impacts					10

¹***Bold, italics = Impact***

The predicted sound levels in NSA 1 are between 61 and 76 dB(A). The impacted receptors are predicted to experience sound levels approaching or exceeding the NAC. Future sound level increases over the existing levels range between 2-9 dB(A). None of the receptors will experience future sound level increases exceeding the 10 dB(A) AHTD criterion.



6.3 Noise Study Area 2

Table 7 lists the TNM receivers in NSA 2 and the one-hour equivalent sound levels for the Existing and Design Year 2038 Build scenarios. The Design Year 2038 PM peak hour was determined to be the worst noise hour for this NSA. Levels in bold italics represent impacts. Figure 7 shows the impacts for the area.

Table 7: Year 2038 One-Hour Equivalent Sound Levels and Impacts, NSA 2

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
7827 PAWNEE DR (R 17)	1	65	69	4	1
7823 PAWNEE DR (R 18)	1	63	66	3	1
7810 PAWNEE DR (R 19)	1	61	64	3	-
7412 PAWNEE DR (R 20)	1	56	63	7	-
11523 I-30 S (R 21)	1	64	69	5	1
3107 S BEGGS RD (R 22)	1	61	65	4	-
3108 S BEGGS RD (R 23)	1	65	70	5	1
3203 S BEGGS RD (R 24)	1	61	64	3	-
12057 I-30 S (R 25)	1	67	71	4	1
6422 PAWNEE DR (R 26)	1	57	62	5	-
6364 PAWNEE DR (R 27)	1	59	63	4	-
12183 I-30 S (R 28)	1	64	69	5	1
3115 J K DR (R 29)	1	68	72	4	1
3105 J K DR (R 30)	1	66	69	3	1
12295 I-30 S (R 31)	1	68	72	4	1
12299 I-30 S (R 32)	1	70	73	3	1
12329 I-30 S (R 33)	1	69	73	4	1
6204 PAWNEE DR (R 34)	1	60	64	4	-
6108 PAWNEE DR (R 35)	1	58	62	4	-
6016 PAWNEE DR (R 36)	1	59	63	4	-
6006 PAWNEE DR (R 37)	1	59	62	3	-
5922 PAWNEE DR (R 38)	1	58	62	4	-
5912 PAWNEE DR (R 39)	1	59	63	4	-
12427 I-30 S (R 40)	1	65	68	3	1
12429-B I-30 S (R 41)	1	66	70	4	1
12407 I-30 S (R 42)	1	69	73	4	1
12429 I-30 S (R 43)	1	68	72	4	1
5916 PAWNEE DR (R 44)	1	62	66	4	1
12471 I-30 S (R 45)	1	68	72	4	1
12497 I-30 S (R 46)	1	67	70	3	1
5866 PAWNEE DR (R 47)	1	62	66	4	1
2901 MOUNTAIN VIEW CUT-OFF (R 48)	1	62	67	5	1
2900 MOUNTAIN VIEW CUT-OFF (R 49)	1	66	71	5	1
12601 I-30 S (R 50)	1	73	77	4	1
12619 I-30 S (R 51)	1	66	70	4	1
12613 I-30 S (R 52)	1	72	76	4	1
12623 I-30 S (R 53)	1	68	73	5	1

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
2900 ASHOKAN DR (R 54)	1	61	66	5	1
3006 ASHOKAN DR (R 55)	1	60	64	4	-
Predicted "Build" Alternative Design Year 2038 Traffic Noise Impacts					26

¹*Bold, italics = Impact*

The predicted sound levels at the receptors in NSA 2 are between 62 and 77 dB(A). The impacted receptors are predicted to experience sound levels approaching or exceeding the NAC. Future sound level increases over the existing levels range between 3-7 dB(A). None of the receptors will experience future sound level increases exceeding the 10 dB(A) AHTD criterion.

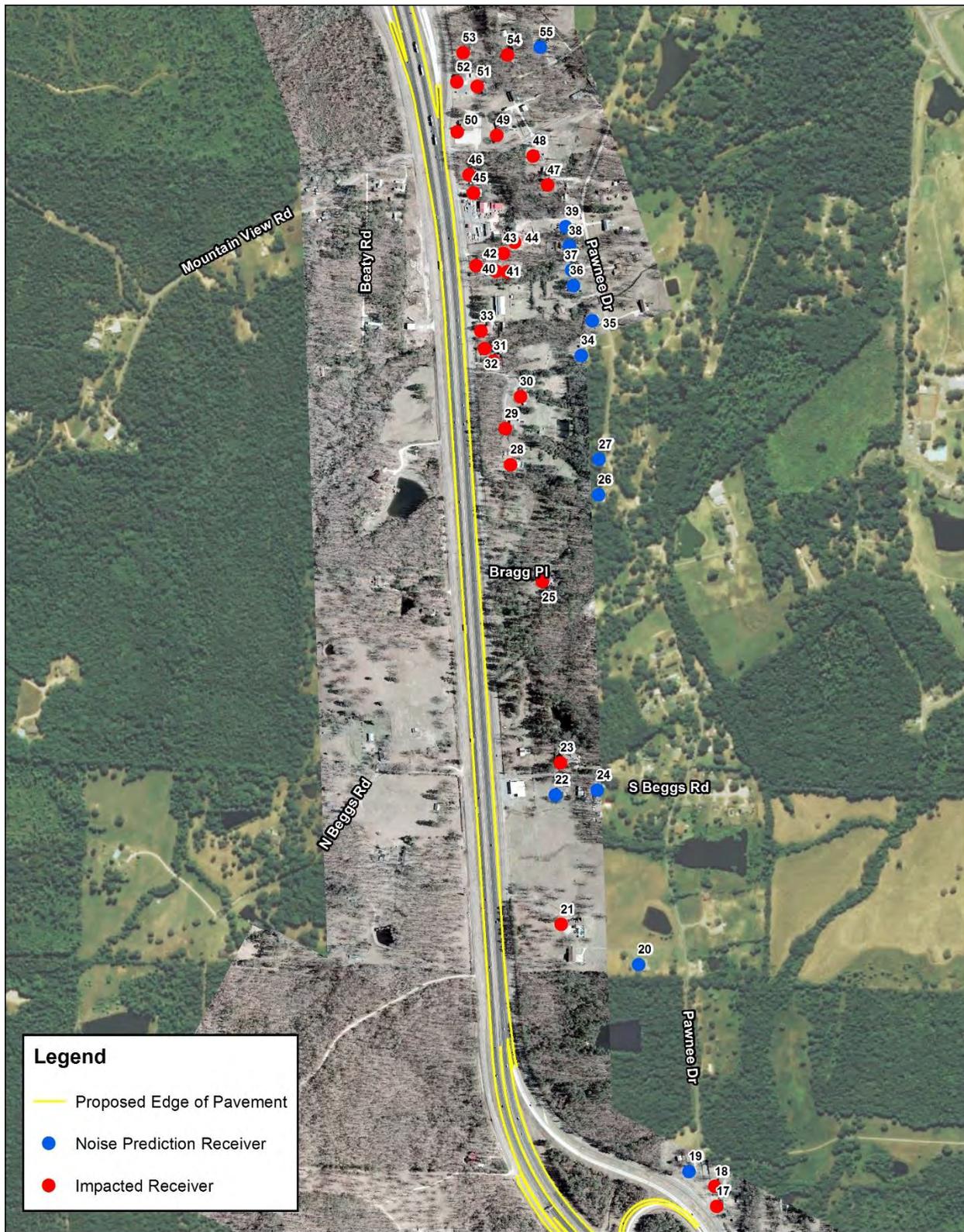


Figure 7. Year 2038 Build Noise Impacts, NSA 2

6.4 Noise Study Area 3

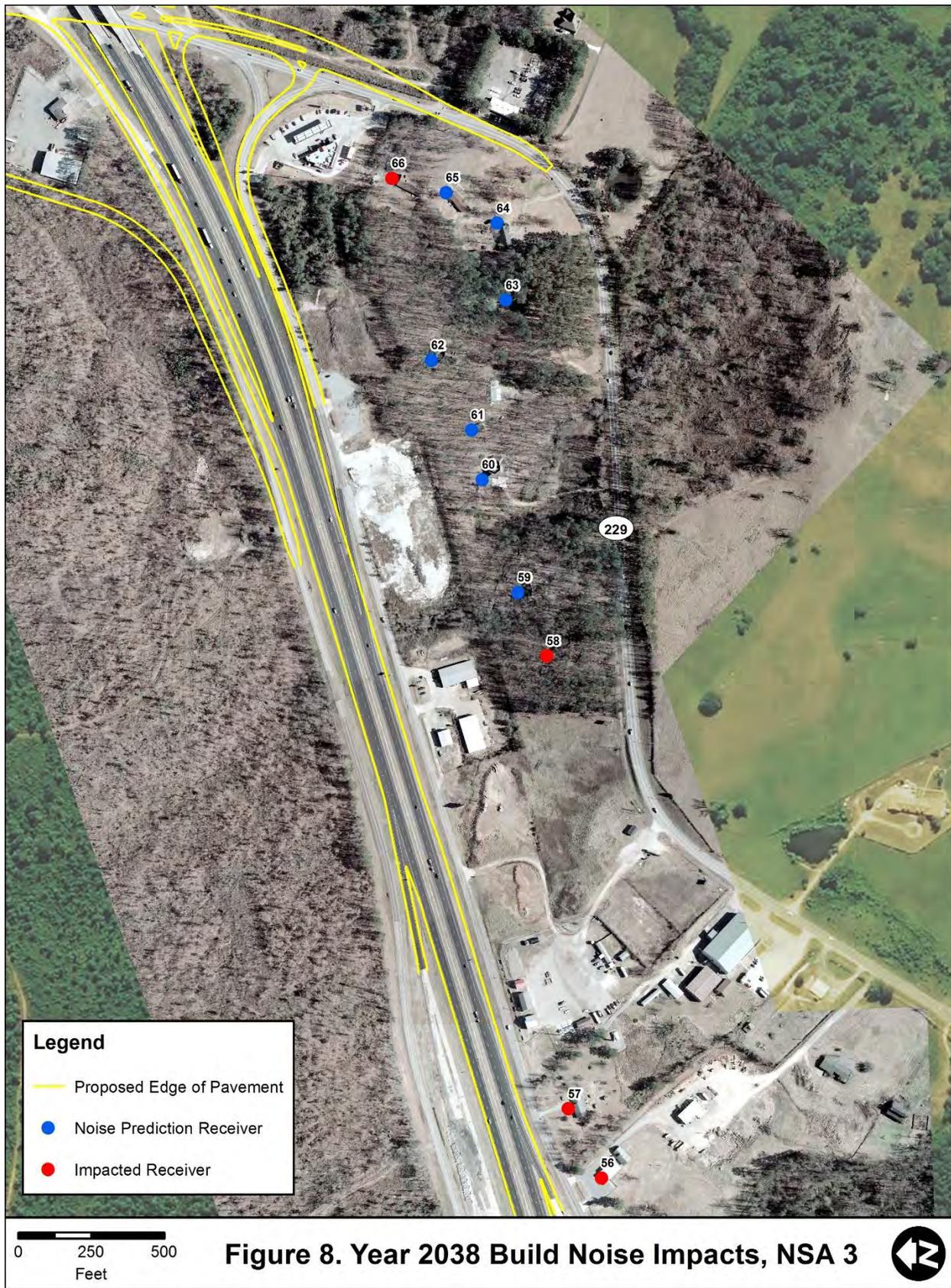
Table 8 lists the TNM receivers in NSA 3 and the one-hour equivalent sound levels for the Existing and Design Year 2038 Build scenarios. The Design Year 2038 PM peak hour was determined to be the worst noise hour for this NSA. Levels in bold italics represent impacts. Figure 8 shows the impacts for the area.

Table 8: Year 2038 One-Hour Equivalent Sound Levels and Impacts, NSA 3

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
12913 I-30 S (R 56)	1	69	74	5	1
12967 I-30 S (R 57)	1	70	75	5	1
5178 HWY 67 (R 58)	1	64	68	4	1
5134 HWY 67 (R 59)	1	61	65	4	-
5110 HWY 67 (R 60)	1	58	62	4	-
4994 HWY 67 (R 61)	1	60	64	4	-
13425 I-30 S (R 62)	1	59	64	5	-
4956 HWY 67 (R 63)	1	54	59	5	-
4876 HWY 67 (R 64)	1	55	59	4	-
4866 HWY 67 (R 65)	1	58	62	4	-
4754 HWY 67 (R 66)	1	62	66	4	1
Predicted "Build" Alternative Design Year 2038 Traffic Noise Impacts					4

¹*Bold, italics = Impact*

The predicted sound levels at the receptors in NSA 3 are between 59 and 75 dB(A). The impacted receptors are predicted to experience sound levels approaching or exceeding the NAC. Future sound level increases over the existing levels range between 4-5 dB(A). None of the receptors will experience future sound level increases exceeding the 10 dB(A) AHTD criterion.



6.5 Noise Study Area 4

Table 9 lists the TNM receivers in NSA 4 and the one-hour equivalent sound levels for the Existing and Design Year 2038 Build scenarios. The Design Year 2038 PM peak hour was determined to be the worst noise hour for this NSA. Levels in bold italics represent impacts. Figure 9 shows the impacts for the area.

Table 9: Year 2038 One-Hour Equivalent Sound Levels and Impacts, NSA 4

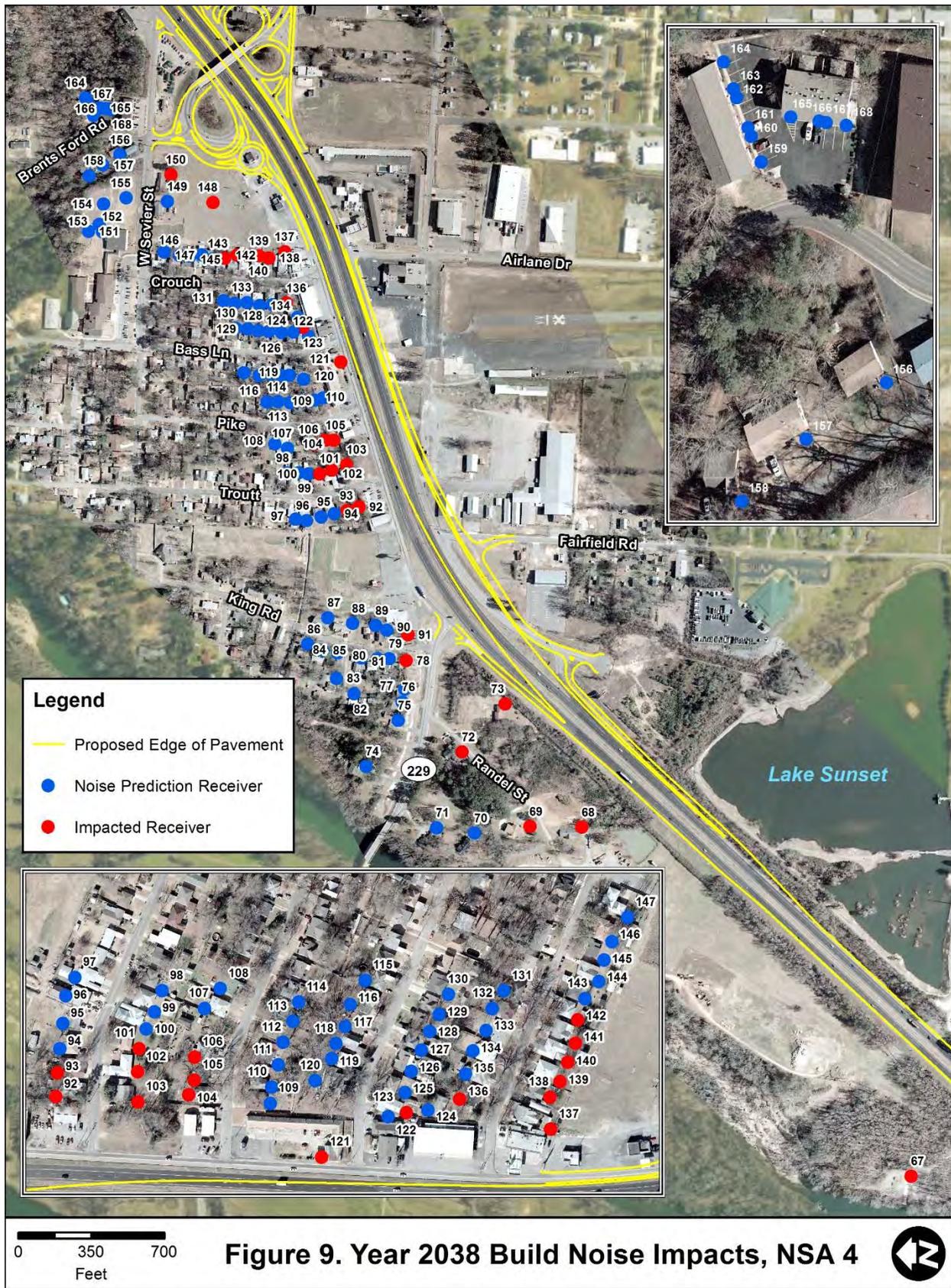
Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
SALINE RIVER BOAT RAMP (R 67)	1	63	66	3	1
500 RANDEL ST (R 68)	1	67	69	2	1
415 RANDEL ST (R 69)	1	65	70	5	1
2500 W SOUTH ST (R 70)	1	59	63	4	-
2508 W SOUTH ST (R 71)	1	58	61	3	-
2402 W SOUTH ST (R 72)	1	64	67	3	1
401 RANDEL ST (R 73)	1	75	76	1	1
2421 W SOUTH ST (R 74)	1	57	60	3	-
2409 W SOUTH ST (R 75)	1	62	64	2	-
2315 W SOUTH ST (R 76)	1	63	65	2	-
2315-B W SOUTH ST (R 77)	1	62	64	2	-
104 KING RD (R 78)	1	64	66	2	1
110 KING RD (R 79)	1	60	62	2	-
118 KING RD (R 80)	1	59	61	2	-
122 KING RD (R 81)	1	58	60	2	-
122-B KING RD (R 82)	1	55	57	2	-
208 KING RD (R 83)	1	55	57	2	-
206 KING RD (R 84)	1	57	60	3	-
214 KING RD (R 85)	1	56	58	2	-
222 KING RD (R 86)	1	56	58	2	-
217/219 KING RD (R 87)	2	59	63	4	-
125 KING RD (R 88)	1	61	64	3	-
121 KING RD (R 89)	1	62	65	3	-
117 KING RD (R 90)	1	62	64	2	-
15218 I-30 N (R 91)	1	67	70	3	1
114 TROUTT (R 92)	1	65	68	3	1
120 TROUTT (R 93)	1	64	66	2	1
124 TROUTT (R 94)	1	62	65	3	-
204 TROUTT (R 95)	1	61	65	4	-
208 TROUTT (R 96)	1	60	64	4	-
212 TROUTT (R 97)	1	59	62	3	-
217 TROUTT (R 98)	1	60	63	3	-
213 TROUTT (R 99)	1	61	64	3	-
209 TROUTT (R 100)	1	61	65	4	-
203 TROUTT (R 101)	1	62	66	4	1
121 TROUTT (R 102)	1	65	68	3	1
115 TROUTT (R 103)	1	71	74	3	1
114 PIKE (R 104)	1	69	71	2	1

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
118 PIKE (R 105)	1	65	69	4	1
124 PIKE (R 106)	1	63	67	4	1
204 PIKE (R 107)	1	61	64	3	-
208 PIKE (R 108)	1	55	57	2	-
115 PIKE (R 109)	1	59	62	3	-
119 PIKE (R 110)	1	59	61	2	-
201 PIKE (R 111)	1	59	62	3	-
205 PIKE (R 112)	1	59	62	3	-
209 PIKE (R 113)	1	58	61	3	-
213 PIKE (R 114)	1	57	60	3	-
214 BASS LN (R 115)	1	55	58	3	-
210 BASS LN (R 116)	1	56	59	3	-
206 BASS LN (R 117)	1	57	60	3	-
202 BASS LN (R 118)	1	58	61	3	-
120 BASS LN (R 119)	1	58	61	3	-
118 BASS LN (R 120)	1	61	64	3	-
15438 I-30 N (R 121)	1	78	80	2	1
113 BASS LN (R 122)	3	58	61	3	-
117 BASS LN (R 123)	1	65	68	3	1
116-B CROUCH (R 124)	1	60	63	3	-
121 BASS LN (R 125)	1	61	64	3	-
203 BASS LN (R 126)	1	61	65	4	-
207 BASS LN (R 127)	1	61	64	3	-
211 BASS LN (R 128)	1	59	63	4	-
215 BASS LN (R 129)	1	58	62	4	-
219 BASS LN (R 130)	1	58	61	3	-
212 CROUCH (R 131)	1	55	58	3	-
210 CROUCH (R 132)	1	56	60	4	-
206 CROUCH (R 133)	1	57	61	4	-
202 CROUCH (R 134)	1	58	61	3	-
120 CROUCH (R 135)	1	59	62	3	-
116 CROUCH (R 136)	1	63	66	3	1
115 CROUCH (R 137)	1	70	72	2	1
121 CROUCH (R 138)	1	65	68	3	1
201 CROUCH (R 139)	1	65	68	3	1
205 CROUCH (R 140)	1	64	67	3	1
209 CROUCH (R 141)	1	63	67	4	1
213 CROUCH (R 142)	1	63	66	3	1
217 CROUCH (R 143)	1	62	65	3	-
221 CROUCH (R 144)	1	61	64	3	-
303 CROUCH (R 145)	1	61	64	3	-
311 CROUCH (R 146)	1	60	63	3	-
315 CROUCH (R 147)	1	59	63	4	-
1501 W SEVIER ST (SOCCER FIELD) (R 148)	1	64	68	4	1
1614 W SEVIER ST (R 149)	1	62	65	3	-

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
1606 W SEVIER ST (R 150)	1	63	66	3	1
1501 W SEVIER ST (PLAYGROUND) (R 151)	1	53	57	4	-
1501 W SEVIER ST (BASKETBALL COURT 1) (R 152)	1	53	56	3	-
1501 W SEVIER ST (BASKETBALL COURT 2) (R 153)	1	54	57	3	-
1501 W SEVIER ST (BASEBALL FIELD) (R 154)	1	54	58	4	-
1501 W SEVIER ST (SOCCER FIELD) (R 155)	1	57	61	4	-
607 BRENTS FORD RD (R 156)	1	54	58	4	-
609 BRENTS FORD RD (R 157)	1	52	55	3	-
611 BRENTS FORD RD (R 158)	1	51	54	3	-
207 WOODLAND DR, UNIT 1 (R 159)	1	52	56	4	-
207 WOODLAND DR, UNIT 2 (R 160)	1	52	56	4	-
207 WOODLAND DR, UNIT 3 (R 161)	1	52	56	4	-
207 WOODLAND DR, UNIT 4 (R 162)	1	53	57	4	-
207 WOODLAND DR, UNIT 5 (R 163)	1	53	57	4	-
207 WOODLAND DR, UNIT 6 (R 164)	1	53	57	4	-
207 WOODLAND DR, UNIT 7 (R 165)	1	48	53	5	-
207 WOODLAND DR, UNIT 8 (R 166)	1	47	52	5	-
207 WOODLAND DR, UNIT 9 (R 167)	1	47	52	5	-
207 WOODLAND DR, UNIT 10 (R 168)	1	51	55	4	-
Predicted "Build" Alternative Design Year 2038 Traffic Noise Impacts					26

¹*Bold, italics = Impact*

The predicted sound levels at the receptors in NSA 4 are between 52 and 80 dB(A). The impacted receptors are predicted to experience sound levels approaching or exceeding the NAC. Future sound level increases over the existing levels range between 1-5 dB(A). None of the receptors will experience future sound level increases exceeding the 10 dB(A) AHTD criterion.



6.6 Noise Study Area 5

Table 10 lists the TNM receivers in NSA 5 and the one-hour equivalent sound levels for the Existing and Design Year 2038 Build scenarios. The Design Year 2038 PM peak hour was determined to be the worst noise hour for this NSA. Levels in bold italics represent impacts. Figure 10 shows the impacts for the area.

Table 10: Year 2038 One-Hour Equivalent Sound Levels and Impacts, NSA 5

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
LAKE SUNSET WALKING TRAIL (R 169)	1	71	73	2	1
521 FAIRFIELD RD (R 170)	1	67	70	3	1
417 FAIRFIELD RD (R 171)	1	69	75	6	1
519 FAIRFIELD RD (R 172)	1	64	68	4	1
515 FAIRFIELD RD (R 173)	1	62	68	6	1
517 FAIRFIELD RD (R 174)	1	62	67	5	1
601 FAIRFIELD RD (R 175)	1	61	66	5	1
617 FAIRFIELD RD (R 176)	1	59	64	5	-
619 FAIRFIELD RD (R 177)	1	57	62	5	-
713 FAIRFIELD RD (R 178)	1	56	61	5	-
706 FAIRFIELD RD (R 179)	1	56	61	5	-
620 FAIRFIELD RD (R 180)	1	55	60	5	-
616 FAIRFIELD RD (R 181)	1	58	63	5	-
15523 I-30 S (R 182)	1	71	76	5	1
206 AIRLANE DR (R 183)	1	57	63	6	-
15617 I-30 S (APTS 1-5, FRONT BUILDING) (R 184)	5	72	75	3	5
15617 I-30 S (APT 1, MIDDLE BUILDING) (R 185a)	1	48	52	4	-
15617 I-30 S (APT 11, MIDDLE BUILDING) (R 185b)	1	54	57	3	-
15617 I-30 S (APT 2, MIDDLE BUILDING) (R 186a)	1	48	51	3	-
15617 I-30 S (APT 12, MIDDLE BUILDING) (R 186b)	1	53	57	4	-
15617 I-30 S (APT 3, MIDDLE BUILDING) (R 187a)	1	48	51	3	-
15617 I-30 S (APT 13, MIDDLE BUILDING) (R 187b)	1	53	56	3	-
15617 I-30 S (APT 4, MIDDLE BUILDING) (R 188a)	1	48	51	3	-

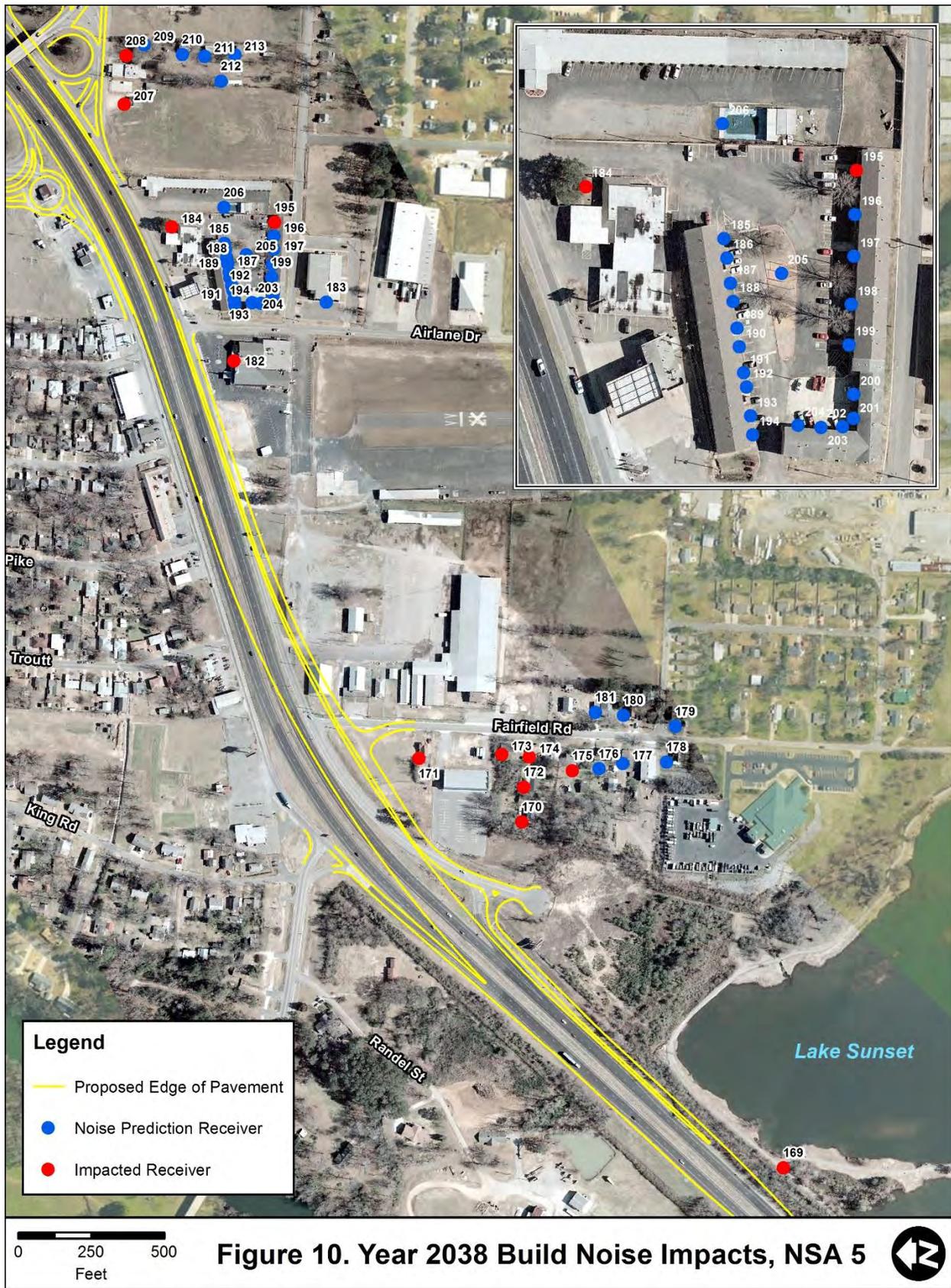
Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
15617 I-30 S (APT 14, MIDDLE BUILDING) (R 188b)	1	52	56	4	-
15617 I-30 S (APT 5, MIDDLE BUILDING) (R 189a)	1	48	51	3	-
15617 I-30 S (APT 15, MIDDLE BUILDING) (R 189b)	1	52	55	3	-
15617 I-30 S (APT 6, MIDDLE BUILDING) (R 190a)	1	47	51	4	-
15617 I-30 S (APT 16, MIDDLE BUILDING) (R 190b)	1	52	55	3	-
15617 I-30 S (APT 7, MIDDLE BUILDING) (R 191a)	1	48	51	3	-
15617 I-30 S (APT 17, MIDDLE BUILDING) (R 191b)	1	51	55	4	-
15617 I-30 S (APT 8, MIDDLE BUILDING) (R 192a)	1	48	51	3	-
15617 I-30 S (APT 18, MIDDLE BUILDING) (R 192b)	1	51	55	4	-
15617 I-30 S (APT 9, MIDDLE BUILDING) (R 193a)	1	48	51	3	-
15617 I-30 S (APT 19, MIDDLE BUILDING) (R 193b)	1	52	55	3	-
15617 I-30 S (APT 10, MIDDLE BUILDING) (R 194a)	1	56	61	5	-
15617 I-30 S (APT 20, MIDDLE BUILDING) (R 194b)	1	60	63	3	-
15617 I-30 S (APT 1, BACK BUILDING) (R 195a)	1	58	63	5	-
15617 I-30 S (APT 11, BACK BUILDING) (R 195b)	1	63	66	3	1
15617 I-30 S (APT 2, BACK BUILDING) (R 196a)	1	58	62	4	-
15617 I-30 S (APT 12, BACK BUILDING) (R 196b)	1	62	65	3	-

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
15617 I-30 S (APT 3, BACK BUILDING) (R 197a)	1	57	62	5	-
15617 I-30 S (APT 13, BACK BUILDING) (R 197b)	1	62	65	3	-
15617 I-30 S (APT 4, BACK BUILDING) (R 198a)	1	57	61	4	-
15617 I-30 S (APT 14, BACK BUILDING) (R 198b)	1	61	64	3	-
15617 I-30 S (APT 5, BACK BUILDING) (R 199a)	1	57	61	4	-
15617 I-30 S (APT 15, BACK BUILDING) (R 199b)	1	60	63	3	-
15617 I-30 S (APT 6, BACK BUILDING) (R 200a)	1	53	56	3	-
15617 I-30 S (APT 16, BACK BUILDING) (R 200b)	1	55	58	3	-
15617 I-30 S (APT 7, BACK BUILDING) (R 201a)	1	51	54	3	-
15617 I-30 S (APT 17 BACK BUILDING) (R 201b)	1	53	56	3	-
15617 I-30 S (APT 8, BACK BUILDING) (R 202a)	1	50	53	3	-
15617 I-30 S (APT 18, BACK BUILDING) (R 202b)	1	53	56	3	-
15617 I-30 S (APT 9, BACK BUILDING) (R 203a)	1	50	53	3	-
15617 I-30 S (APT 19, BACK BUILDING) (R 203b)	1	52	55	3	-
15617 I-30 S (APT 10, BACK BUILDING) (R 204a)	1	51	54	3	-
15617 I-30 S (APT 20, BACK BUILDING) (R 204b)	1	53	56	3	-
15617 I-30 S (PLAYGROUND) (R 205)	1	56	61	5	-

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
15631 I-30 S POOL (R 206)	1	63	66	3	-
1504 W SOUTH ST (R 207)	1	71	74	3	1
1410 W SOUTH ST (R 208)	1	63	66	3	1
1410 W SOUTH ST* (R 209)	1	59	63	4	-
1410 W SOUTH ST* (R 210)	1	58	61	3	-
1410 W SOUTH ST* (R 211)	1	60	63	3	-
1410 W SOUTH ST* (R 212)	1	60	63	3	-
1410 W SOUTH ST* (R 213)	1	58	62	4	-
Predicted "Build" Alternative Design Year 2038 Traffic Noise Impacts					16

¹***Bold, italics = Impact***

The predicted sound levels at the receptors in NSA 5 are between 51 and 76 dB(A). The impacted receptors are predicted to experience sound levels approaching or exceeding the NAC. Future sound level increases over the existing levels range between 2-6 dB(A). None of the receptors will experience future sound level increases exceeding the 10 dB(A) AHTD criterion.



6.7 Noise Study Area 6

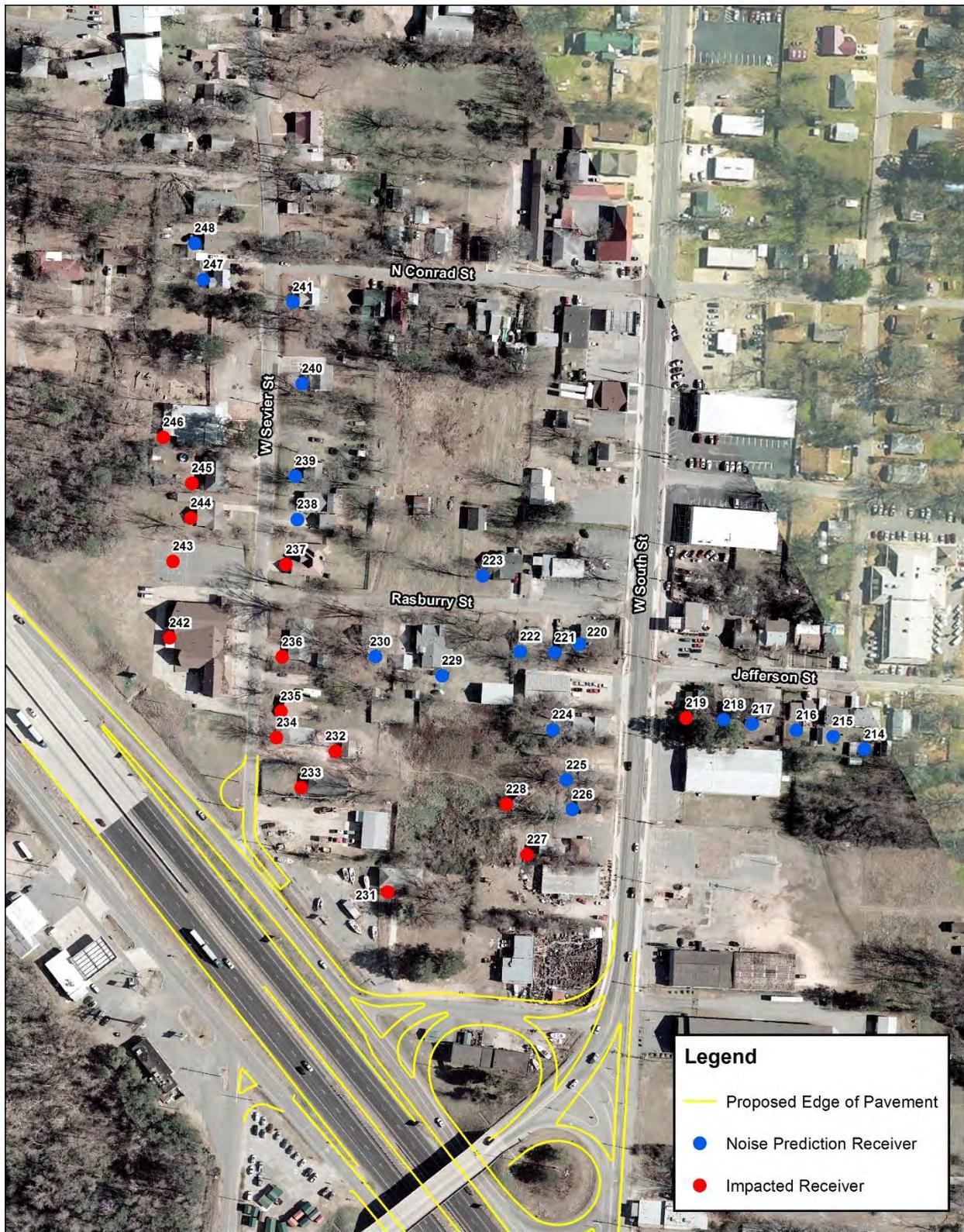
Table 11 lists the TNM receivers in NSA 6 and the one-hour equivalent sound levels for the Existing and Design Year 2038 Build scenarios. The Design Year 2038 PM peak hour was determined to be the worst noise hour for this NSA. Levels in bold italics represent impacts. Figure 11 shows the impacts for the area.

Table 11: Year 2038 One-Hour Equivalent Sound Levels and Impacts, NSA 6

Receiver	Dwelling Units	Existing Sound Level [dB(A)] ¹	Design Sound Level [dB(A)] ¹	Increase over Existing [dB(A)]	Number of Impacts
201 JEFFERSON ST (R 214)	1	51	55	4	-
123 JEFFERSON ST (R 215)	1	52	55	3	-
117 JEFFERSON ST (R 216)	1	51	55	4	-
111 JEFFERSON ST (R 217)	1	52	57	5	-
1200-C W SOUTH ST (R 218)	1	55	60	5	-
1200 W SOUTH ST (R 219)	1	62	66	4	1
1117-A W SOUTH ST (R 220)	1	58	63	5	-
1117-B W SOUTH ST (R 221)	1	56	60	4	-
114 RASBURY ST (R 222)	1	53	57	4	-
115 RASBURY ST (R 223)	1	53	56	3	-
1211 W SOUTH ST (R 224)	1	58	62	4	-
1219-A W SOUTH ST (R 225)	1	59	64	5	-
1219-B W SOUTH ST (R 226)	1	57	62	5	-
1223 W SOUTH ST (R 227)	1	62	66	4	1
1219-C W SOUTH ST (R 228)	1	61	66	5	1
124 RASBURY ST (R 229)	1	59	63	4	-
202 RASBURY ST (R 230)	1	58	63	5	-
1228 W SEVIER ST (R 231)	1	71	74	3	1
1214 1/2 W SEVIER ST (R 232)	1	64	69	5	1
1216 W SEVIER ST (R 233)	1	72	75	3	1
1214 W SEVIER ST (R 234)	1	70	74	4	1
1206 W SEVIER ST (R 235)	1	67	72	5	1
1204 W SEVIER ST (R 236)	1	63	68	5	1
1116 W SEVIER ST (R 237)	1	62	66	4	1
1106 W SEVIER ST (R 238)	1	60	64	4	-
1024 W SEVIER ST (R 239)	1	59	63	4	-
1018 W SEVEIR ST (R 240)	1	58	62	4	-
214 N CONRAD ST (R 241)	1	56	59	3	-
1203 W SEVIER ST (R 242)	1	72	76	4	1
1203 W SEVIER ST (Basketball Court) (R 243)	1	68	73	5	1
1019 W SEVIER ST (R 244)	1	65	70	5	1
1017 W SEVIER ST (R 245)	1	65	70	5	1
1015 W SEVIER ST (R 246)	1	64	69	5	1
929 W SEVEIR ST (R 247)	1	59	63	4	-
927 W SEVEIR ST (R 248)	1	59	64	5	-
Predicted "Build" Alternative Design Year 2038 Traffic Noise Impacts					15

¹**Bold, italics = Impact**

The predicted sound levels at the receptors in NSA 6 are between 55 and 76 dB(A). The impacted receptors are predicted to experience sound levels approaching or exceeding the NAC. Future sound level increases over the existing levels range between 3-5 dB(A). None of the receptors will experience future sound level increases exceeding the 10 dB(A) AHTD criterion.



0 125 250
Feet

Figure 11. Year 2038 Build Noise Impacts, NSA 6



7.0 Noise Abatement Evaluation

In accordance with criteria in the AHTD noise policy, noise abatement needs to be studied first for “feasibility” and, if feasible, for “reasonableness.” Noise barriers must be both feasible and reasonable to be deemed likely for construction.

Feasibility includes acoustical and engineering considerations. Acoustical feasibility means that a noise barrier will provide at least a 5 dB(A) reduction in the L_{eq} for at least one of the impacted receivers. If a barrier cannot meet this criterion, abatement is considered to not be acoustically feasible. Additionally, the noise barrier should be feasible from an engineering perspective. Engineering feasibility takes into account topography, drainage, safety, barrier height, utilities, and access and maintenance needs (which may include right-of-way considerations). If a barrier poses engineering problems, it may not be feasible even if it meets the acoustical feasibility criterion, and it will not be recommended for construction.

If feasible, then the barriers are assessed for reasonableness in accordance with the criteria in AHTD’s noise policy. All proposed noise abatement must meet the following three criteria to be considered reasonable by AHTD. If any of the criteria is not met, noise abatement measures will not be constructed.

1. **Consideration and Obtaining Views of Residents and Property Owners:** The viewpoints of the affected property owners and residents are important. For those barriers found to be reasonable by the Cost-Effectiveness and Design Goal criteria below, viewpoints of the benefited receptors and affected property owners will be sought.
2. **Cost-Effectiveness:** If the estimated cost of constructing a noise barrier (including installation and additional necessary construction such as foundations or guardrails) divided by the number of benefited receptors [those who would receive a reduction of at least five dB(A)] is \$36,000 or less per benefited receptor, a barrier is considered to be cost-effective. For initial considerations, an estimated unit cost of \$35 per square foot for reflective barriers, \$40 for absorptive barriers, and \$50 for barriers on structures is used in this cost-effectiveness calculation.
3. **Noise Reduction Design Goal:** Traffic noise abatement must achieve at least an 8 dB(A) reduction for at least one impacted receptor.

According to the FHWA noise standards and AHTD policy, abatement needs to be evaluated when impacts are predicted to occur. Noise barriers must be shown to be both feasible and reasonable, as described earlier, to be deemed likely for construction. Based on the predicted impacts, the potential for noise barriers was studied for NSAs 1, 2, 3, 4, 5, and 6.

In general, noise abatement measures may include noise barriers, alteration of horizontal and vertical alignment, and traffic management measures (such as reducing speed limits or prohibition of heavy trucks). Neither of the latter two forms of abatement are feasible for this project because the widening of I-30 is in the median, I-30 is a major truck route and reduced speeds that are still safe for Interstate highway travel do not result in substantial noise reductions.

Noise barriers were determined to be the only potential abatement measure to reduce noise levels for impacted areas. As stated earlier, barriers must pass acoustical feasibility and reasonableness tests.

The FHWA TNM 2.5 program was used to predict one-hour equivalent sound levels with barriers present and to evaluate alternative noise barrier designs for each area.

7.1 Noise Barrier for Noise Study Area 1

Two noise barrier scenarios were studied for NSA 1. However, each was not reasonable in terms of the AHTD cost-effectiveness criteria.

The first noise barrier scenario was a 2,550-ft long barrier (NB1) at the edge of shoulder between I-30 WB and the Frontage Road, extending from west of N Beggs Road to the I-30 WB inspection station.

The second noise barrier scenario was a 2,350-ft long barrier (NB1-1) at the edge of shoulder between I-30 WB and the Frontage Road, extending from east of N Beggs Road to the I-30 WB inspection station.

7.2 Noise Barrier for Noise Study Area 2

Three noise barrier scenarios were studied for NSA 2. However, each was not reasonable in terms of the AHTD cost-effectiveness criteria.

The first noise barrier scenario was a 3,550-ft long barrier (NB2) at the edge of shoulder between I-30 EB and the Frontage Road, extending from west of S Beggs Road to the I-30 EB inspection station.

The second noise barrier scenario was a 3,100-ft long barrier (NB2-1) at the edge of shoulder between I-30 EB On Ramp and the Frontage Road, extending from east of the I-30 bridges over the US 70 Ramps to west of S Beggs Road.

The third noise barrier scenario was a 2,600-ft long barrier (NB2-2) at the edge of shoulder between the end of the I-30 EB On Ramp and the Frontage Road, extending from west of S Beggs Road to east of S Beggs Road.

7.3 Noise Barrier for Noise Study Area 3

The following noise barrier was studied for NSA 3. However, the barrier was not reasonable in terms of the AHTD cost-effectiveness criteria.

A 1,700-ft long barrier (NB3) at the edge of shoulder between I-30 EB and the Frontage Road, extending from east of I-30 EB inspection station to the AR 229 Interchange was studied.

7.4 Noise Barrier for Noise Study Area 4

Three noise barrier scenarios were studied for NSA 4. However, each was not reasonable in terms of the AHTD cost-effectiveness criteria.

The first noise barrier scenario was a 3,300-ft long barrier (NB4) at the edge of shoulder between I-30 WB and the Frontage Road, extending from east of I-30 WB on ramp to the W Sevier Street/W South Street Interchange.

The second noise barrier scenario was a 1,550-ft long barrier (NB4-1) at the edge of shoulder between I-30 WB and the Frontage Road, extending from east of I-30 WB on ramp to west of Pike Block.

The third noise barrier scenario was a 3,050-ft long barrier (NB4-2) at the edge of shoulder between I-30 WB and the Frontage Road, extending from west of AR229 to the W Sevier Street/W South Street Interchange.

7.5 Noise Barrier for Noise Study Area 5

Three noise barrier scenarios were studied for NSA 5. However, each was not reasonable in terms of the AHTD cost-effectiveness criteria.

The first noise barrier scenario was a 4,000-ft long barrier (NB5) at the edge of shoulder between I-30 EB and the Frontage Road, extending from the I-30 EB off ramp to the W Sevier Street/W South Street Interchange.

The second noise barrier scenario was a 1,600-ft long barrier (NB5-1) at the edge of shoulder between I-30 EB and the Frontage Road, extending from the I-30 EB off ramp to east of Fairfield Road.

The third noise barrier scenario was a 2,000-ft long barrier (NB5-2) at the edge of shoulder between I-30 EB and the Frontage Road, extending from east of Fairfield Road to the W Sevier Street/W South Street Interchange.

7.6 Noise Barrier for Noise Study Area 6

The following noise barrier was studied for NSA 6. However, the barrier was not reasonable in terms of the AHTD cost-effectiveness criteria.

A 1,700-ft long barrier (NB5) at the edge of shoulder along Leander Street and I-30 EB, extending from W South Street to east of the I-30 EB On Ramp towards the end of the project corridor was studied.

7.7 Statement of Likelihood of Abatement

Based on the studies completed to date, the Arkansas State Highway and Transportation Department has identified the following impacts:

- 88 residential
- 5 church
- 3 recreational
- 1 motel

The AHTD has determined that all studied noise abatement measures are feasible and acoustically reasonable; however, the costs for all of the studied noise abatement measures have been estimated to have a preliminary cost that would exceed the AHTD cost-effectiveness criteria. Therefore, each of the studied noise abatement measures are considered to not be reasonable and are not recommended for further analysis.

7.8 Views of Benefitted Property Owners and Residents

The final step in determining reasonableness of any abatement system is the solicitation of the viewpoints of the benefitted property owners and residents. If the cost-effectiveness and noise reduction reasonableness criteria are still met after additional design investigations, then the viewpoints of the benefitted residents and property owners will be sought and considered before final decisions are made.

8.0 Mitigation of Construction Noise

The major construction elements of this project are expected to consist of land clearing, earth moving, hauling, grading, paving and bridge construction. General construction noise impacts for passing traffic and those individuals living or working near the project can be expected particularly from clearing, earth moving and paving operations. Motorized equipment shall be maintained with appropriate mufflers to minimize construction noise levels. During certain phases of construction (example, land clearing) and during certain seasons of the year, there will be areas along the project where no construction activity is taking place. Also, considering the relatively short-term nature of construction noise, impacts are not expected to be substantial. Yet, for brief periods of time, some construction noise impacts could be substantial (an increase in existing noise levels by 10 dB(A) or greater), even though existing I-30 traffic noise levels will remain high. These episodes usually occur during daytime work hours. As a result, these impacts will be minimized to adjacent residents. Additionally, nearby structures usually contribute to transmission loss and a resulting moderation of intrusive construction noise.

9.0 Coordination with Local Officials

AHTD encourages local communities and developers to practice noise compatible planning in order to avoid future noise impacts. Two guidance documents on noise compatible land use planning are available from FHWA: “The Audible Landscape: A Manual for Highway Noise and Land Use” and “Entering the Quiet Zone: Noise Compatible Land Use Planning.”

Table 12 presents future predicted equivalent sound levels based on an assumed at-grade situation for areas along I-30 where vacant and possibly developable lands exist. Noise predictions were made at distances of 100, 200, 300, 400, 500, 600, and 700 feet from I-30 for the Design Year 2038 PM peak hour. The results showed exterior residential activities may be considered to be impacted in terms of a level of 66 or more dB(A) out to a distance of approximately 700 feet from centerline of the nearest travel lane of I-30, depending on the amount of shielding provided by surrounding buildings. These values do not represent predicted levels at every location at a particular distance back from the roadway. Sound levels will vary with changes in terrain and other site conditions. This information is being included to make local officials and planners aware of anticipated highway noise levels so that future development will be compatible with these levels.

Table 12: Design Year (2038) Predicted One-Hour Equivalent Sound Levels for Undeveloped Areas

Distance*	$L_{eq(h)}$ [dB(A)]
100	79
200	75
300	73
400	71
500	70
600	68
700	66

*Perpendicular distance to the centerline of the nearest travel lane of I-30

10.0 References

- [1] *Procedures for Abatement of Highway Traffic and Construction Noise*, 23 CFR 772, Federal Highway Administration.
- [2] *Policy on Highway Traffic Noise Abatement*, Arkansas Highway and Transportation Department, revised October 2015.

Appendix A – Noise Measurement Results

<i>Measurement Location</i>	<i>Appendix Page</i>
Along S Beggs Rd (ML 1)	A-2
Intersection of Fairfield Rd and Jackmon St (ML 2)	A-5
Along Troutt Ave (ML 3)	A-6

Date: **09/18/14**Area: **NSA 2**Site: **Along S Beggs Rd (ML 1.1)**Description: **Residential, 1st Row****Set 1**

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	10:18:14	65.3	81.2	3388441	Yes	
2	10:19:14	64.5	69.0	2818382	Yes	
3	10:20:14	67.6	71.1	5754399	Yes	
4	10:21:14	67.7	73.6	5888436	Yes	
5	10:22:14	66.0	71.1	3981071	Yes	
6	10:23:14	67.1	73.6	5128613	Yes	
7	10:24:14	65.9	70.2	3890451	Yes	
8	10:25:14	66.6	71.5	4570881	Yes	
9	10:26:14	67.3	72.3	5370317	Yes	
10	10:27:14	65.5	70.4	3548133	Yes	
11	10:28:14	65.5	70.8	3548133	Yes	
12	10:29:14	63.8	69.5	2398832	Yes	
13	10:30:14	64.3	70.0	2691534	Yes	
14	10:31:14	65.2	70.4	3311311	Yes	
15	10:32:14	63.9	70.2	2454708	Yes	
Leq of Good Periods					65.9	

Set 2

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	10:34:36	65.6	70.0	3630780	Yes	
2	10:35:36	64.7	71.7	2951209	Yes	
3	10:36:36	64.2	71.0	2630267	Yes	
4	10:37:36	65.0	69.8	3162277	Yes	
5	10:38:36	64.6	73.7	2884031	Yes	
6	10:39:36	66.3	71.3	4265795	Yes	
7	10:40:36	63.8	69.9	2398832	Yes	
8	10:41:36	66.4	73.4	4365158	Yes	
9	10:42:36	66.3	71.7	4265795	Yes	
10	10:43:36	62.8	70.9	1905460	Yes	
11	10:44:36	65.8	71.0	3801893	Yes	
12	10:45:36	65.0	71.4	3162277	Yes	
13	10:46:36	66.0	72.6	3981071	Yes	
14	10:47:36	66.1	71.1	4073802	Yes	
15	10:48:36	64.6	77.6	2884031	Yes	
Leq of Good Periods					65.3	

Date: **09/18/14**Area: **NSA 2**Site: **Along S Beggs Rd (ML 1.2)**Description: **Residential, 2nd Row****Set 1**

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	10:18:14	62.2	72.6	1659586	Yes	
2	10:19:14	62.6	68.8	1819700	Yes	
3	10:20:14	64.6	69.9	2884031	Yes	
4	10:21:14	64.1	70.2	2570395	Yes	
5	10:22:14	62.6	68.5	1819700	Yes	
6	10:23:14	63.2	69.4	2089296	Yes	
7	10:24:14	62.6	68.3	1819700	Yes	
8	10:25:14	63.3	67.3	2137962	Yes	
9	10:26:14	63.4	68.1	2187761	Yes	
10	10:27:14	61.9	69.2	1548816	Yes	
11	10:28:14	62.2	67.6	1659586	Yes	
12	10:29:14	61.2	68.6	1318256	Yes	
13	10:30:14	61.5	67.0	1412537	Yes	
14	10:31:14	63.2	71.2	2089296	Yes	
15	10:32:14	60.9	65.3	1230268	Yes	
Leq of Good Periods					62.7	

Set 2

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	10:34:36	62.5	68.3	1778279	Yes	
2	10:35:36	61.9	66.6	1548816	Yes	
3	10:36:36	61.0	70.9	1258925	Yes	
4	10:37:36	63.4	66.8	2187761	Yes	
5	10:38:36	62.2	68.2	1659586	Yes	
6	10:39:36	62.8	67.1	1905460	Yes	
7	10:40:36	60.5	66.2	1122018	Yes	
8	10:41:36	64.4	80.1	2754228	Yes	
9	10:42:36	62.1	67.2	1621810	Yes	
10	10:43:36	61.4	67.0	1380384	Yes	
11	10:44:36	61.8	68.6	1513561	Yes	
12	10:45:36	61.0	66.7	1258925	Yes	
13	10:46:36	62.3	68.0	1698243	Yes	
14	10:47:36	62.2	66.5	1659586	Yes	
15	10:48:36	61.2	68.5	1318256	Yes	
Leq of Good Periods					62.2	

Date: **09/18/14**Area: **NSA 2**Site: **Along S Beggs Rd (ML 1.3)**Description: **Residential, 3rd Row****Set 1**

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	10:18:14	57.3	60.6	537031	Yes	
2	10:19:14	58.0	62.4	630957	Yes	
3	10:20:14	58.8	63.7	758577	Yes	
4	10:21:14	59.6	62.2	912010	Yes	
5	10:22:14	59.9	62.9	977237	Yes	
6	10:23:14	57.8	60.0	602559	Yes	
7	10:24:14	57.5	61.8	562341	Yes	
8	10:25:14	58.0	61.0	630957	Yes	
9	10:26:14	57.6	60.0	575439	Yes	
10	10:27:14	59.1	61.7	812830	Yes	
11	10:28:14	57.0	61.4	501187	Yes	
12	10:29:14	56.8	60.5	478630	Yes	
13	10:30:14	56.6	62.5	457088	Yes	
14	10:31:14	57.6	60.4	575439	Yes	
15	10:32:14	58.0	67.5	630957	Yes	
Leq of Good Periods					58.1	

Set 2

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	10:34:36	56.1	58.7	407380	Yes	
2	10:35:36	56.3	60.7	426579	Yes	
3	10:36:36	56.7	59.1	467735	Yes	
4	10:37:36	56.0	58.5	398107	Yes	
5	10:38:36	58.3	62.9	676082	Yes	
6	10:39:36	55.5	61.5	354813	Yes	
7	10:40:36	56.9	60.0	489778	Yes	
8	10:41:36	57.2	59.9	524807	Yes	
9	10:42:36	55.5	58.8	354813	Yes	
10	10:43:36	58.1	61.2	645654	Yes	
11	10:44:36	57.2	61.5	524807	Yes	
12	10:45:36	57.4	61.1	549540	Yes	
13	10:46:36	57.0	59.8	501187	Yes	
14	10:47:36	56.2	61.4	416869	Yes	
15	10:48:36	58.8	61.4	758577	Yes	
Leq of Good Periods					57.0	

Date: **09/18/14**Area: **NSA 4**Site: **Intersection of Fairfield Rd and Jackmon St (ML 2.1)**Description: **Residential****Set 1**

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	11:38:24	54.5	65.1	281838	Yes	
2	11:39:24	50.9	56.5	123026	Yes	
3	11:40:24	53.1	61.0	204173	Yes	
4	11:41:24	64.3	80.2	-	No	Loud exhaust
5	11:42:24	55.6	68.7	363078	Yes	
6	11:43:24	55.3	67.7	338844	Yes	
7	11:44:24	51.1	54.6	128824	Yes	
8	11:45:24	55.6	65.3	363078	Yes	
9	11:46:24	50.4	55.7	109647	Yes	
10	11:47:24	53.4	63.3	218776	Yes	
11	11:48:24	50.5	52.5	112201	Yes	
12	11:49:24	52.6	66.6	181970	Yes	
13	11:50:24	57.0	68.4	501187	Yes	
14	11:51:24	54.6	64.1	288403	Yes	
15	11:52:24	51.2	56.0	131825	Yes	
16	11:53:24	57.9	69.9	616595	Yes	
17	11:54:24	53.1	57.3	204173	Yes	
18	11:55:24	56.5	68.4	446683	Yes	
19	11:56:24	51.8	57.1	151356	Yes	
20	11:57:24	56.3	68.8	426579	Yes	
21	11:58:24	53.0	56.3	199526	Yes	
22	11:59:24	58.1	71.4	645654	Yes	
23	12:00:24	58.4	71.2	691830	Yes	
24	12:01:24	58.3	70.4	676082	Yes	
25	12:02:24	59.7	72.4	933254	Yes	
26	12:03:24	53.8	58.4	239883	Yes	
27	12:04:24	58.2	68.7	660693	Yes	
28	12:05:24	55.9	67.4	389045	Yes	
29	12:06:24	56.5	70.5	446683	Yes	
30	12:07:24	57.0	70.0	501187	Yes	
Leq of Good Periods					55.6	

Date: **09/18/14**Area: **NSA 5**Site: **Along Troutt Ave (ML 3.1)**Description: **Residential, 1st Row****Set 1**

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	12:27:58	69.3	82.9	8511380	Yes	
2	12:28:58	66.7	73.8	4677351	Yes	
3	12:29:58	65.4	73.5	3467368	Yes	
4	12:30:58	68.9	79.1	7762471	Yes	
5	12:31:58	65.0	72.7	3162277	Yes	
6	12:32:58	64.5	75.6	2818382	Yes	
7	12:33:58	66.6	73.9	4570881	Yes	
8	12:34:58	66.0	75.5	3981071	Yes	
9	12:35:58	65.3	71.1	3388441	Yes	
10	12:36:58	67.3	78.6	5370317	Yes	
11	12:37:58	68.6	76.1	7244359	Yes	
12	12:38:58	68.6	80.2	7244359	Yes	
13	12:39:58	65.9	77.9	3890451	Yes	
14	12:40:58	65.1	77.2	3235936	Yes	
15	12:41:58	68.4	78.8	6918309	Yes	
Leq of Good Periods					67.1	

Set 2

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	12:51:28	69.0	77.1	7943282	Yes	
2	12:52:28	69.5	75.8	8912509	Yes	
3	12:53:28	68.9	75.8	7762471	Yes	
4	12:54:28	67.8	77.3	6025595	Yes	
5	12:55:28	67.2	74.9	5248074	Yes	
6	12:56:28	68.0	74.4	6309573	Yes	
7	12:57:28	67.8	75.1	6025595	Yes	
8	12:58:28	67.5	73.5	5623413	Yes	
9	12:59:28	68.6	78.8	7244359	Yes	
10	13:00:28	66.1	71.3	4073802	Yes	
11	13:01:28	68.0	76.5	6309573	Yes	
12	13:02:28	63.8	70.5	2398832	Yes	
13	13:03:28	67.6	75.3	5754399	Yes	
14	13:04:28	66.6	73.7	4570881	Yes	
15	13:05:28	66.5	76.0	4466835	Yes	
Leq of Good Periods					67.7	

Date: **09/18/14**Area: **NSA 5**Site: **Along Troutt Ave (ML 3.2)**Description: **Residential, 2nd Row****Set 1**

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	12:27:58	60.0	70.9	1000000	Yes	
2	12:28:58	57.6	68.1	575439	Yes	
3	12:29:58	58.2	67.0	660693	Yes	
4	12:30:58	59.8	70.7	954992	Yes	
5	12:31:58	55.7	64.3	371535	Yes	
6	12:32:58	55.9	68.8	389045	Yes	
7	12:33:58	57.4	64.5	549540	Yes	
8	12:34:58	56.7	66.3	467735	Yes	
9	12:35:58	57.3	68.5	537031	Yes	
10	12:36:58	59.2	73.0	831763	Yes	
11	12:37:58	59.3	68.5	851138	Yes	
12	12:38:58	59.9	72.1	977237	Yes	
13	12:39:58	57.5	70.1	562341	Yes	
14	12:40:58	56.7	67.0	467735	Yes	
15	12:41:58	63.5	75.5	2238721	Yes	
Leq of Good Periods					58.8	

Set 2

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	12:51:28	59.7	69.1	933254	Yes	
2	12:52:28	59.9	68.5	977237	Yes	
3	12:53:28	60.8	71.9	1202264	Yes	
4	12:54:28	59.7	68.4	933254	Yes	
5	12:55:28	59.5	68.6	891250	Yes	
6	12:56:28	59.7	67.9	933254	Yes	
7	12:57:28	59.8	72.2	954992	Yes	
8	12:58:28	58.9	65.7	776247	Yes	
9	12:59:28	60.1	70.0	1023292	Yes	
10	13:00:28	58.3	65.1	676082	Yes	
11	13:01:28	59.6	69.0	912010	Yes	
12	13:02:28	60.0	83.3	1000000	Yes	
13	13:03:28	59.6	68.5	912010	Yes	
14	13:04:28	61.7	74.7	1479108	Yes	
15	13:05:28	58.4	64.7	691830	Yes	
Leq of Good Periods					59.8	

Date: **09/18/14**Area: **NSA 5**Site: **Along Troutt Ave (ML 3.3)**Description: **Residential, 3rd Row****Set 1**

Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	12:27:58	48.0	53.4	63095	Yes	
2	12:28:58	49.3	53.5	85113	Yes	
3	12:29:58	50.2	58.7	104712	Yes	
4	12:30:58	49.4	53.7	87096	Yes	
5	12:31:58	51.0	60.3	125892	Yes	
6	12:32:58	51.1	56.4	128824	Yes	
7	12:33:58	49.1	54.7	81283	Yes	
8	12:34:58	47.1	53.2	51286	Yes	
9	12:35:58	51.8	56.1	151356	Yes	
10	12:36:58	50.3	55.8	107151	Yes	
11	12:37:58	49.0	52.7	79432	Yes	
12	12:38:58	52.6	58.4	181970	Yes	
13	12:39:58	49.6	53.3	91201	Yes	
14	12:40:58	50.4	57.7	109647	Yes	
15	12:41:58	49.8	54.6	95499	Yes	
Leq of Good Periods					50.1	

Set 2

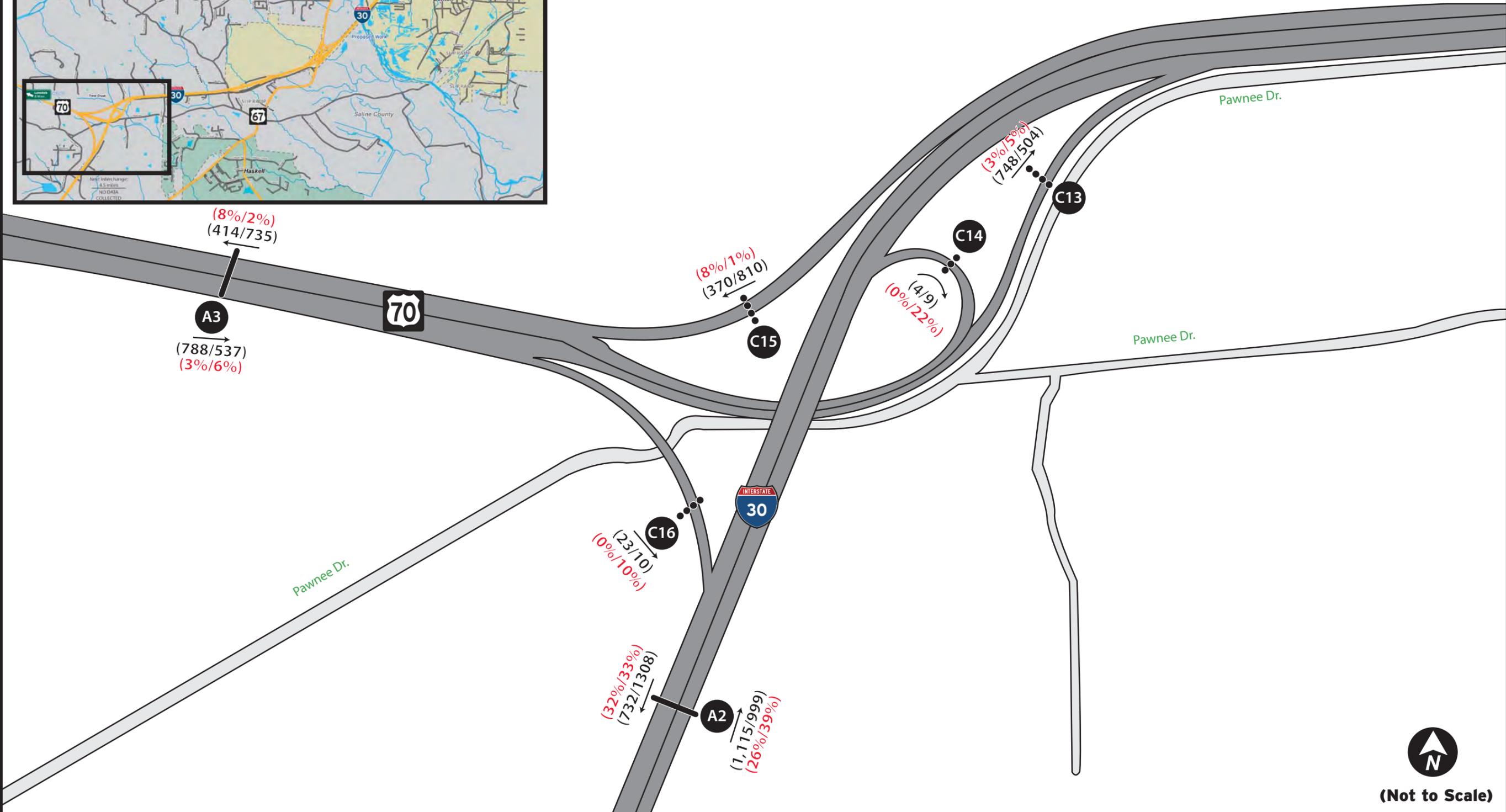
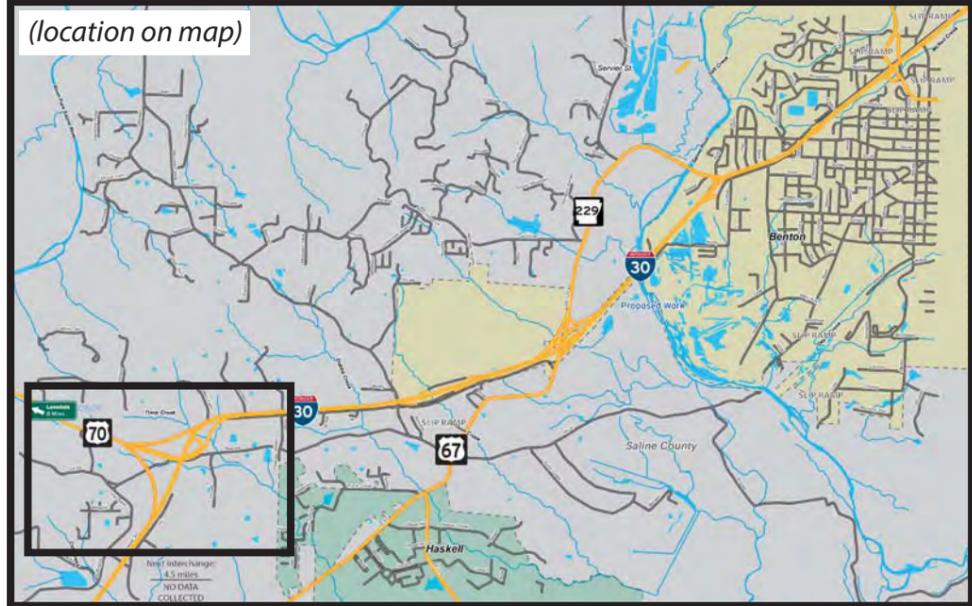
Period	Time Start	Leq	Lmax	SPL	Keep?	Note
1	12:51:28	52.3	54.3	169824	Yes	
2	12:52:28	51.7	56.6	147910	Yes	
3	12:53:28	51.0	53.8	125892	Yes	
4	12:54:28	52.5	56.3	177827	Yes	
5	12:55:28	51.9	55.1	154881	Yes	
6	12:56:28	52.4	55.1	173780	Yes	
7	12:57:28	53.0	55.6	199526	Yes	
8	12:58:28	53.0	55.6	199526	Yes	
9	12:59:28	53.5	55.6	223872	Yes	
10	13:00:28	53.3	57.6	213796	Yes	
11	13:01:28	51.6	55.5	144543	Yes	
12	13:02:28	51.8	56.2	151356	Yes	
13	13:03:28	54.9	65.7	309029	Yes	
14	13:04:28	51.7	53.3	147910	Yes	
15	13:05:28	60.6	73.8	-	No	Lawnmower
Leq of Good Periods					52.6	

Appendix B –Traffic Data for Noise Modeling

<i>Traffic</i>	<i>Appendix Page</i>
Existing 2013 Traffic Counts	B-2
Design Year 2038 Traffic Forecast	B-7
TNM 2.5 Traffic Inputs	B-12

EXHIBIT 4.1

CA0601 - I-30 Widening Highway 70 to Sevier Street Existing 2013 Traffic Counts



(Not to Scale)

Legend

— 48-hour counts ●●●● 24-hour counts

- A** Mainline Count
- B** Turning movement count
- C** Ramp count

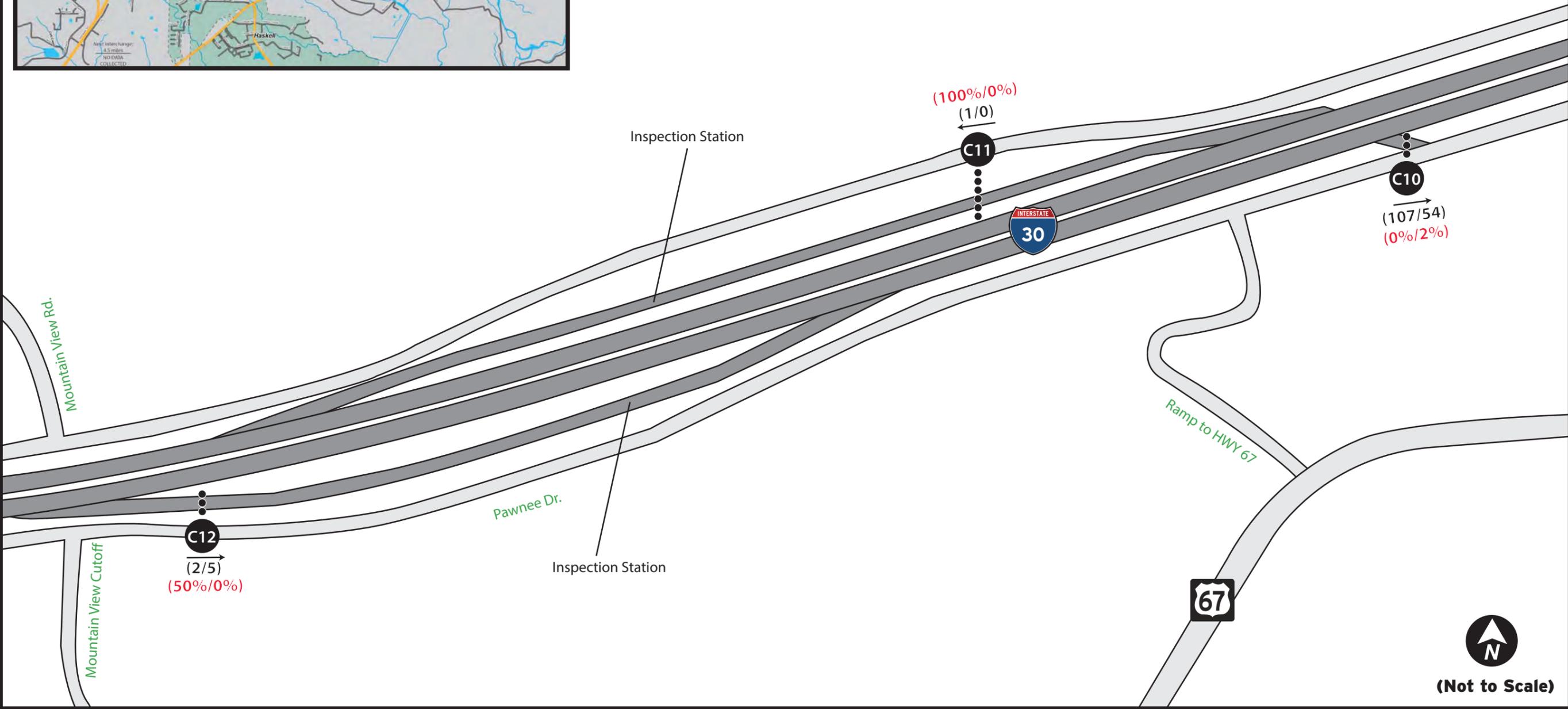
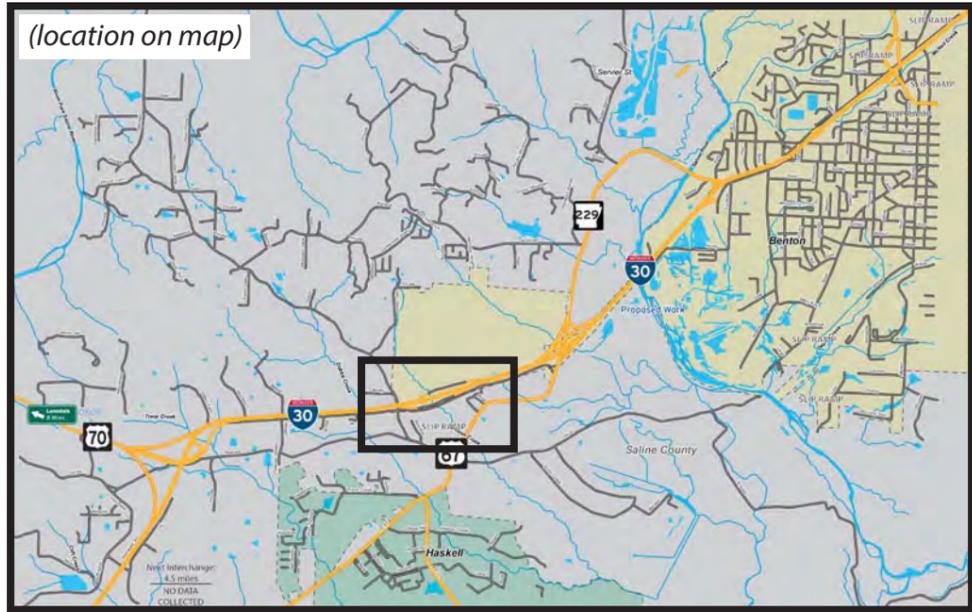
(AM/PM) Traffic Counts [Volumes shown are raw counts taken September 2013]
(AM/PM) Truck Percent
 Peak hour Times: 7:00AM-8:00 AM and 4:30 PM-5:30 PM



January 2014

EXHIBIT 4.2

CA0601 - I-30 Widening Highway 70 to Sevier Street Existing 2013 Traffic Counts



Station	Count Type	AM	PM	Truck Percent
C12	Mainline Count	2	5	50%/0%
	Turning movement count	0	0	0%/0%
C11	Mainline Count	1	0	100%/0%
	Turning movement count	0	0	0%/0%
C10	Mainline Count	107	54	0%/2%
	Turning movement count	0	0	0%/0%

Legend

— 48-hour counts ●●●● 24-hour counts

- Ⓐ Mainline Count
- Ⓑ Turning movement count
- Ⓒ Ramp count

(AM/PM) Traffic Counts [Volumes shown are raw counts taken September 2013]
 (AM/PM) Truck Percent
 Peak hour Times: 7:00AM–8:00 AM and 4:30 PM–5:30 PM



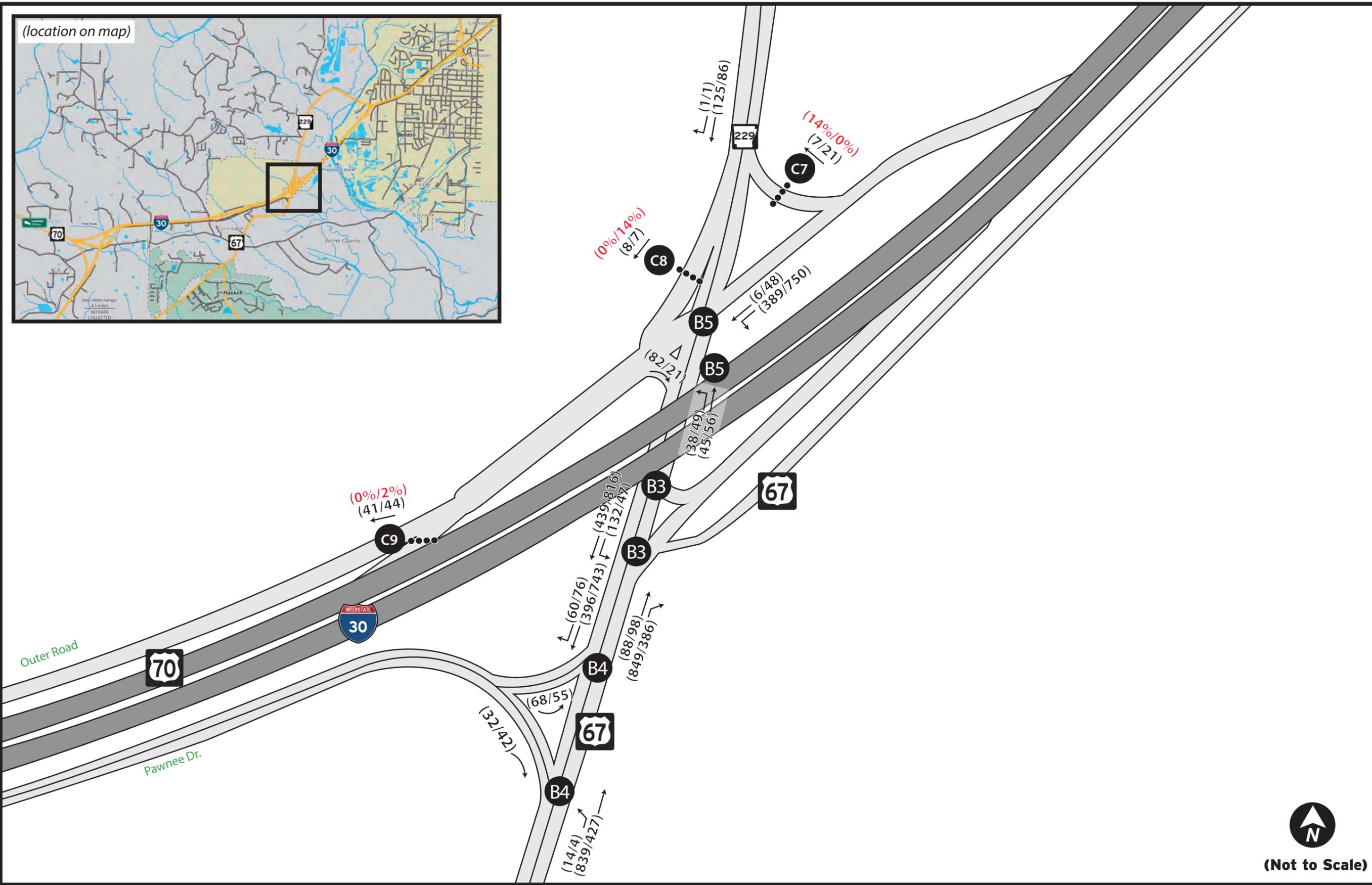
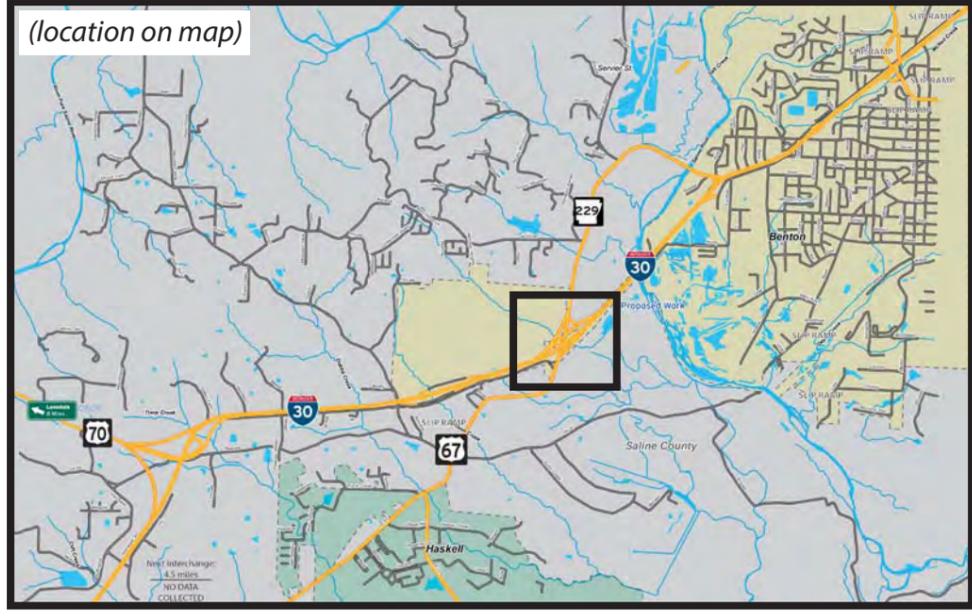
(Not to Scale)



January 2014

EXHIBIT 4.3

CA0601 - I-30 Widening Highway 70 to Sevier Street Existing 2013 Traffic Counts



(Not to Scale)

Legend

— 48-hour counts ●●●● 24-hour counts

- A** Mainline Count
- B** Turning movement count
- C** Ramp count

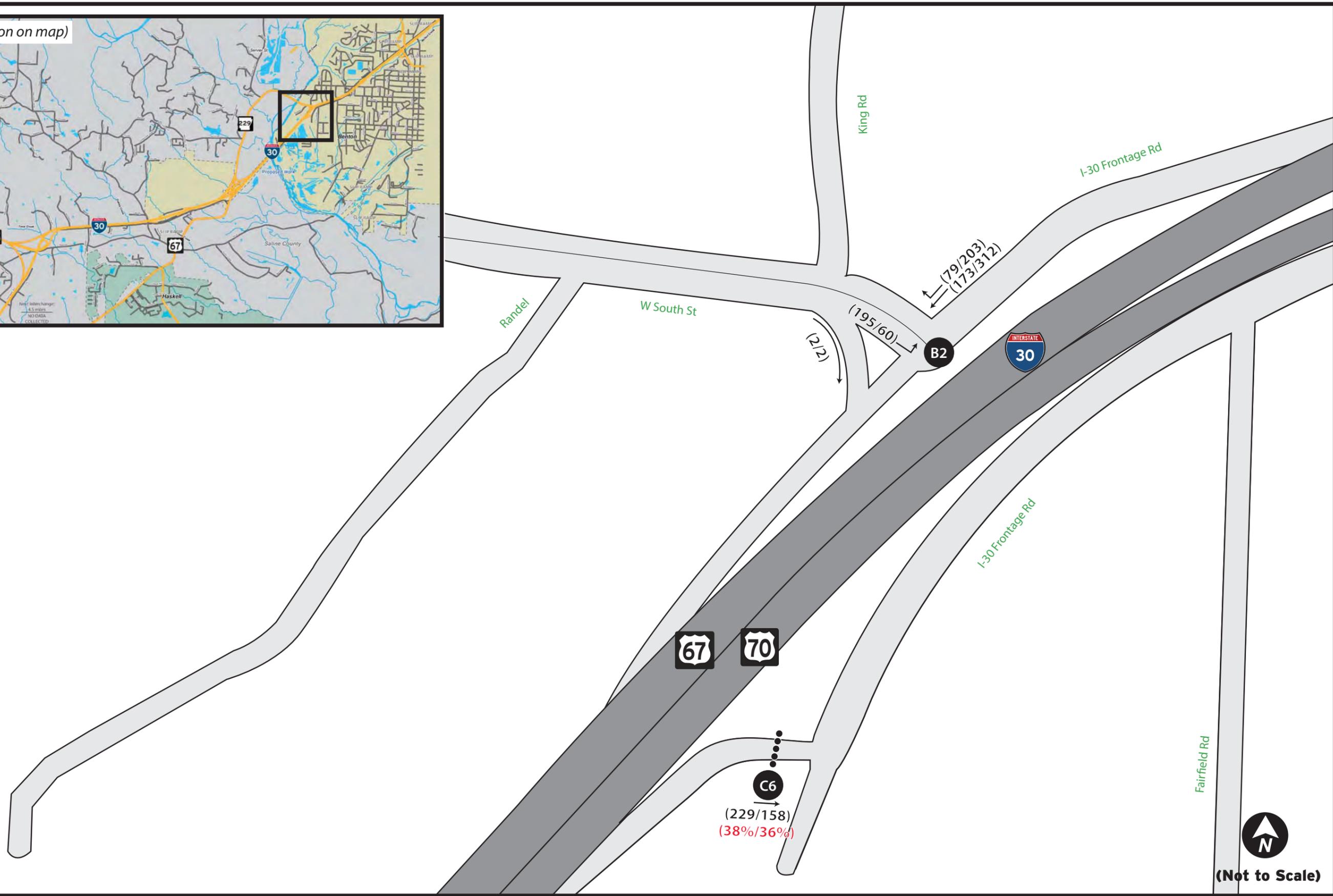
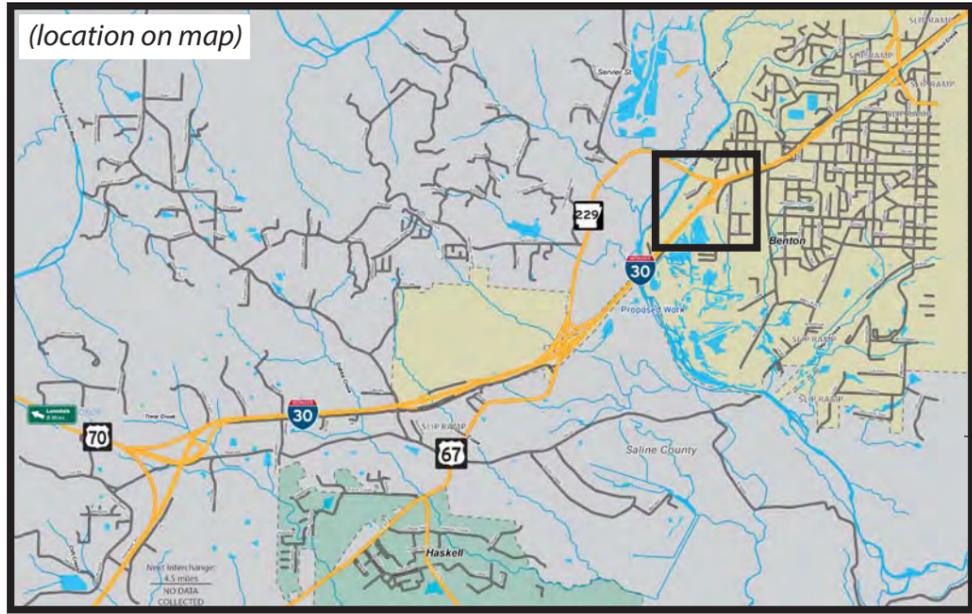
(AM/PM) Traffic Counts [Volumes shown are raw counts taken September 2013]
(AM/PM) Truck Percent
 Peak hour Times: 7:00AM-8:00 AM and 4:30 PM-5:30 PM



January 2014

**EXHIBIT
4.4**

**CA0601 - I-30 Widening
Highway 70 to Sevier Street
Existing 2013 Traffic Counts**



(Not to Scale)

Legend

— 48-hour counts ●●●● 24-hour counts

- A** Mainline Count
- B** Turning movement count
- C** Ramp count

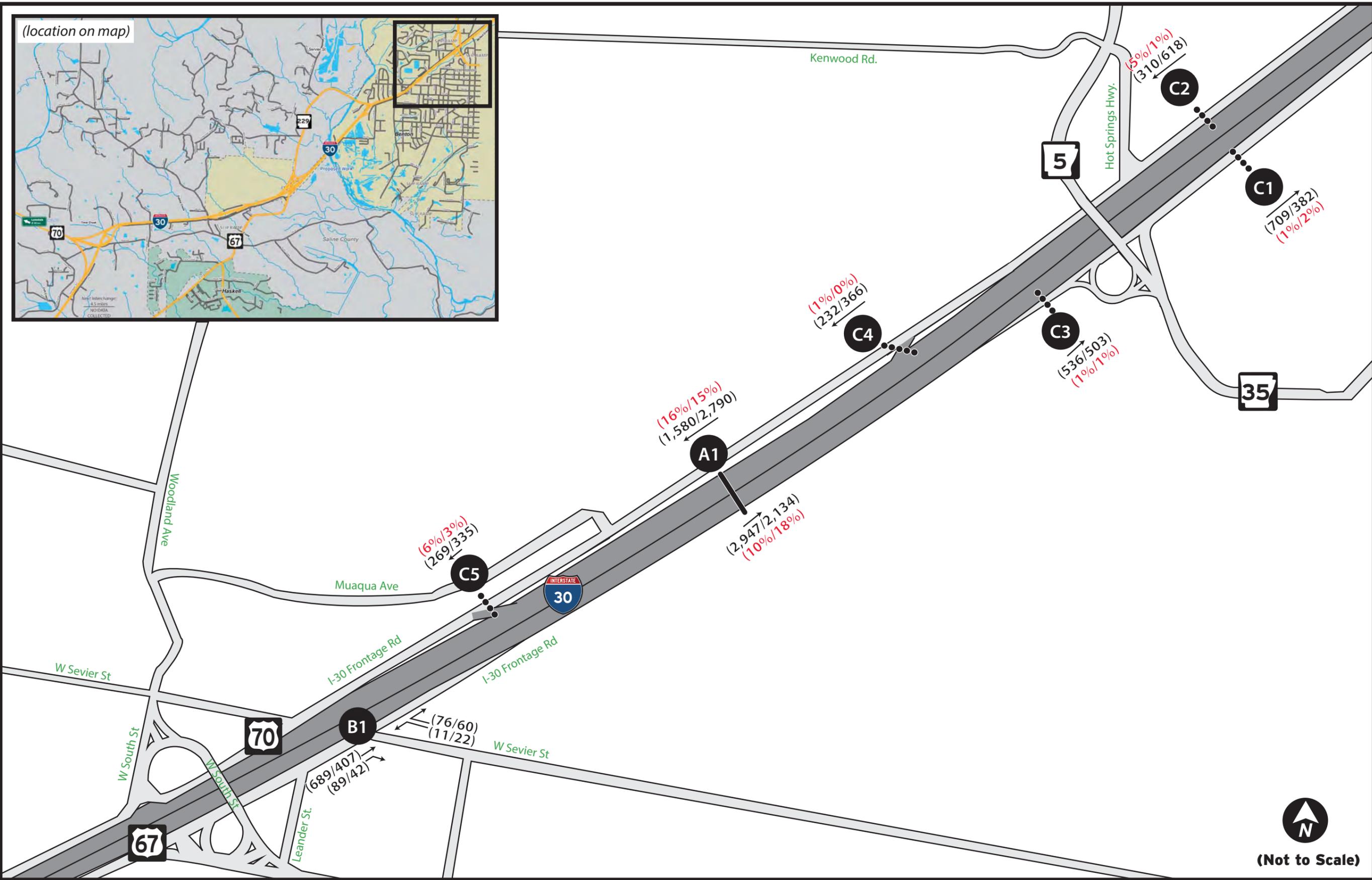
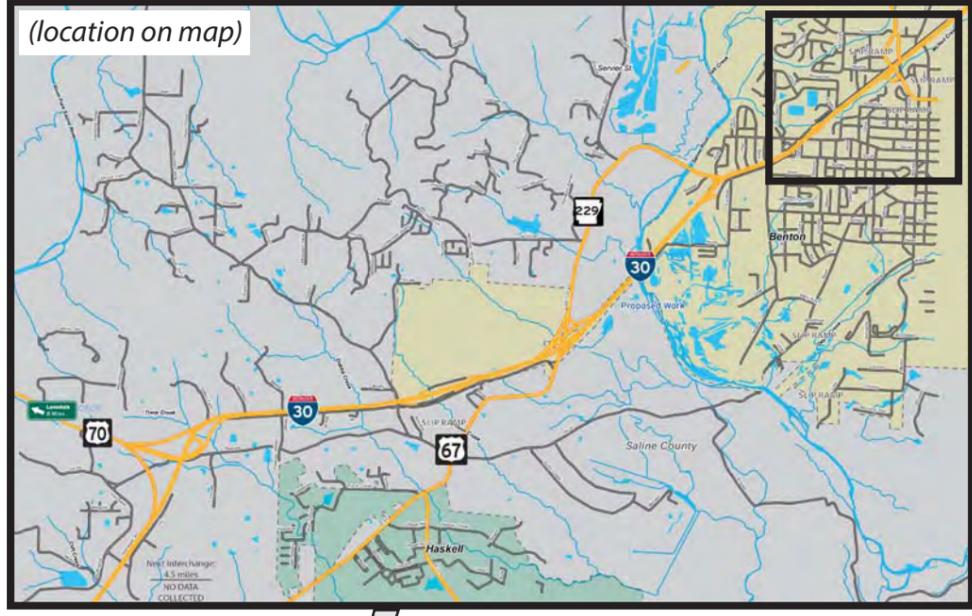
(AM/PM) Traffic Counts [Volumes shown are raw counts taken September 2013]
(AM/PM) Truck Percent
 Peak hour Times: 7:00AM-8:00 AM and 4:30 PM-5:30 PM



January 2014

EXHIBIT 4.5

CA0601 - I-30 Widening Highway 70 to Sevier Street Existing 2013 Traffic Counts



(Not to Scale)

Legend

— 48-hour counts ●●●● 24-hour counts

- A** Mainline Count
- B** Turning movement count
- C** Ramp count

(AM/PM) Traffic Counts [Volumes shown are raw counts taken September 2013]
(AM/PM) Truck Percent
 Peak hour Times: 7:00AM–8:00 AM and 4:30 PM–5:30 PM



January 2014

7:08:11 PM

8/24/2015

mtrippett

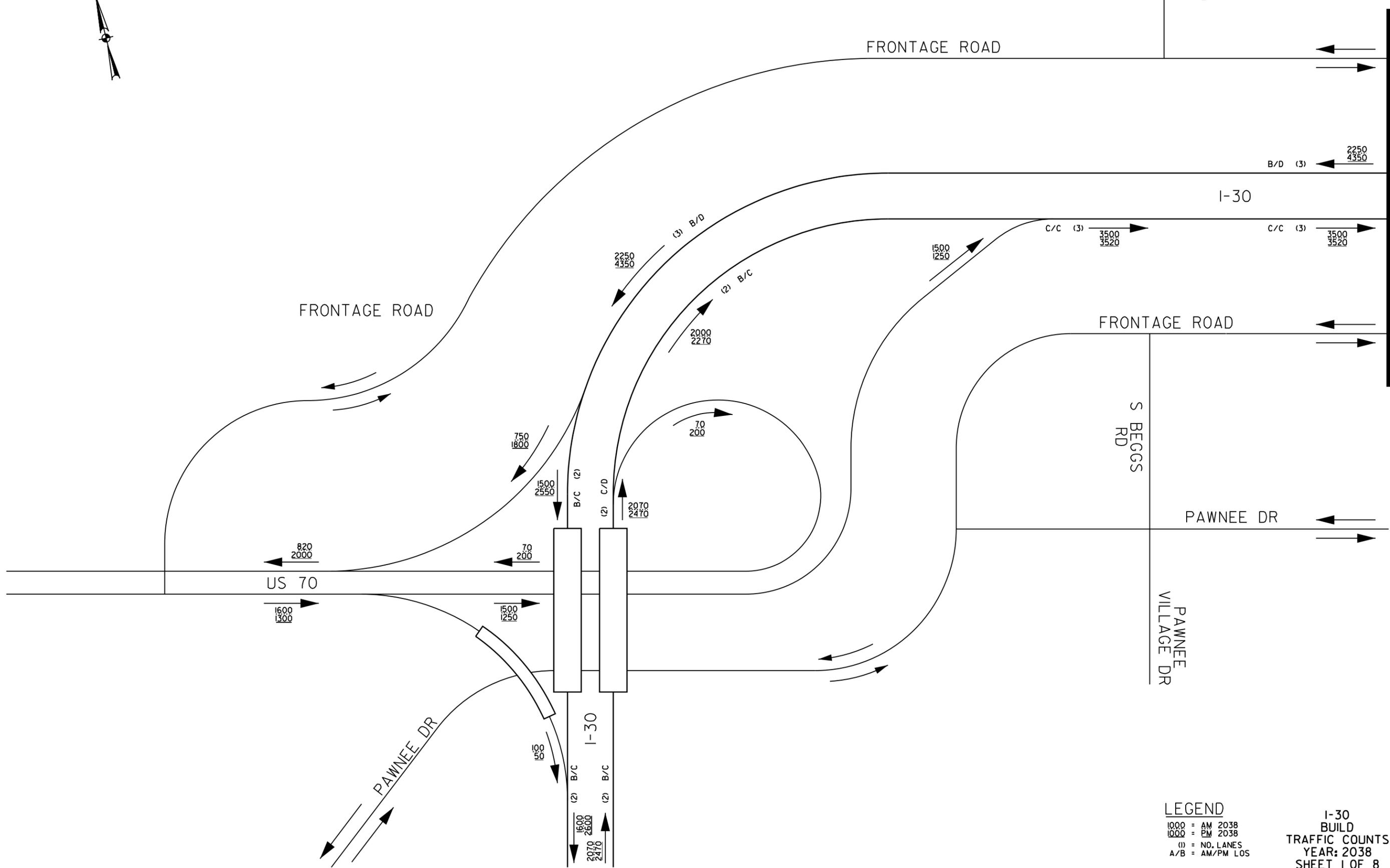
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				6	ARK.			
JOB NO.						CA0601		

I-30 - Traffic Counts

N BEGGS RD ②

MATCH SHEET 2 OF 8



LEGEND

1000 = AM 2038
 1000 = PM 2038
 () = NO. LANES
 A/B = AM/PM LOS

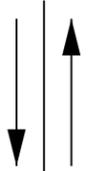
I-30
 BUILD
 TRAFFIC COUNTS
 YEAR: 2038
 SHEET 1 OF 8

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				6	ARK.			
				JOB NO.	CA0601			
				② I-30 - Traffic Counts				



MOUNTAIN VIEW RD



FRONTAGE ROAD

MATCH SHEET 1 OF 8

MATCH SHEET 3 OF 8

← 2250
4350 (3) B/D

← N/A
N/A

INSPECTION STATION

← 2250
4350 (3) B/D

← N/A
N/A

← 2250
4350 (4) B/C

I-30

→ 3500
3520 (3) C/C

→ N/A
N/A

→ 3500
3520 (3) C/C

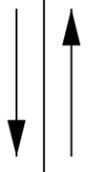
INSPECTION STATION

→ N/A
N/A

→ 3500
3520 (3) C/C

FRONTAGE ROAD

MOUNTAIN VIEW CUTOFF



LEGEND

1000 = AM 2038
1000 = PM 2038
(1) = NO. LANES
A/B = AM/PM LOS

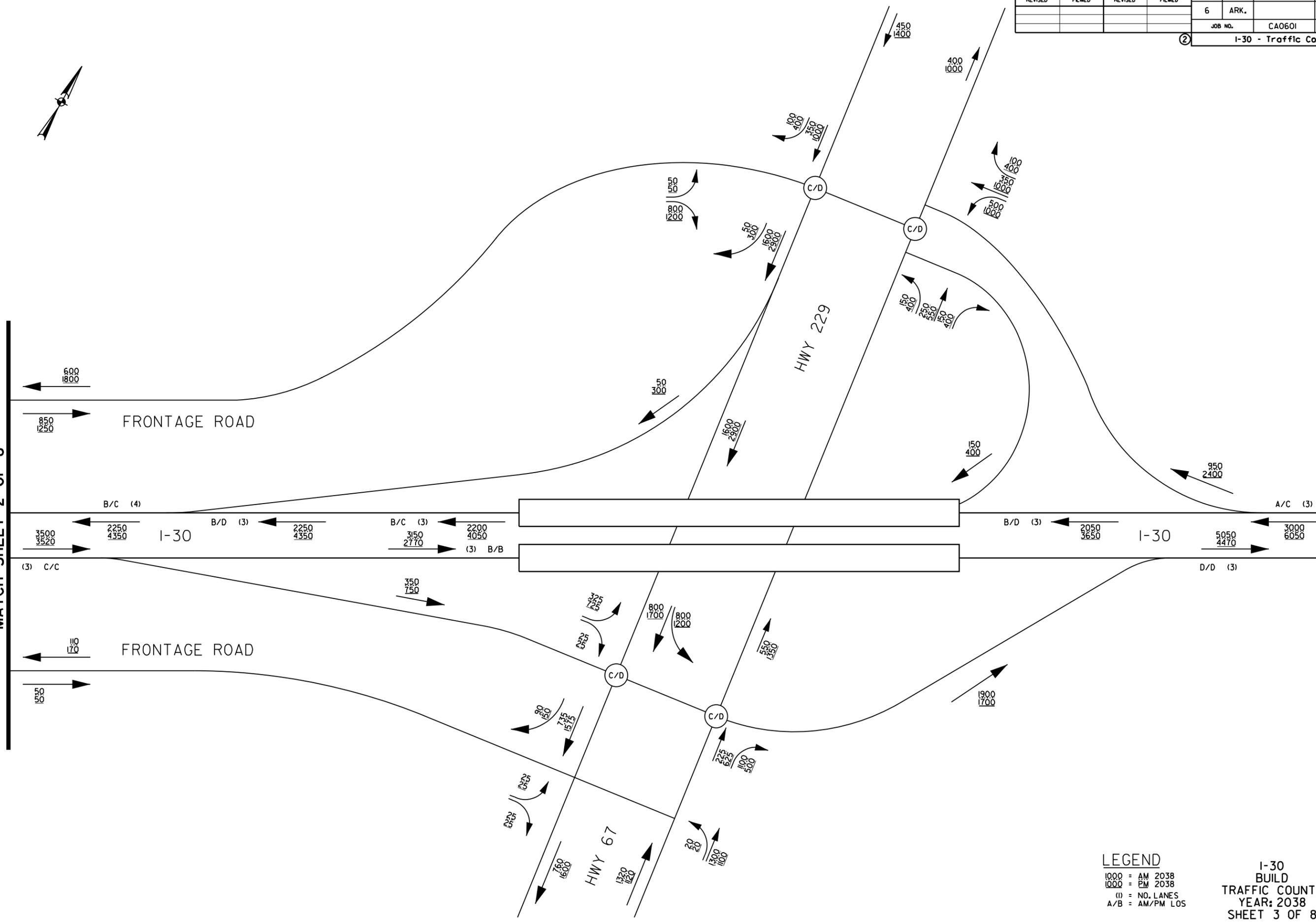
I-30
BUILD
TRAFFIC COUNTS
YEAR: 2038
SHEET 2 OF 8

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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.	CA0601	
② I-30 - Traffic Counts								

MATCH SHEET 2 OF 8

MATCH SHEET 4 OF 8

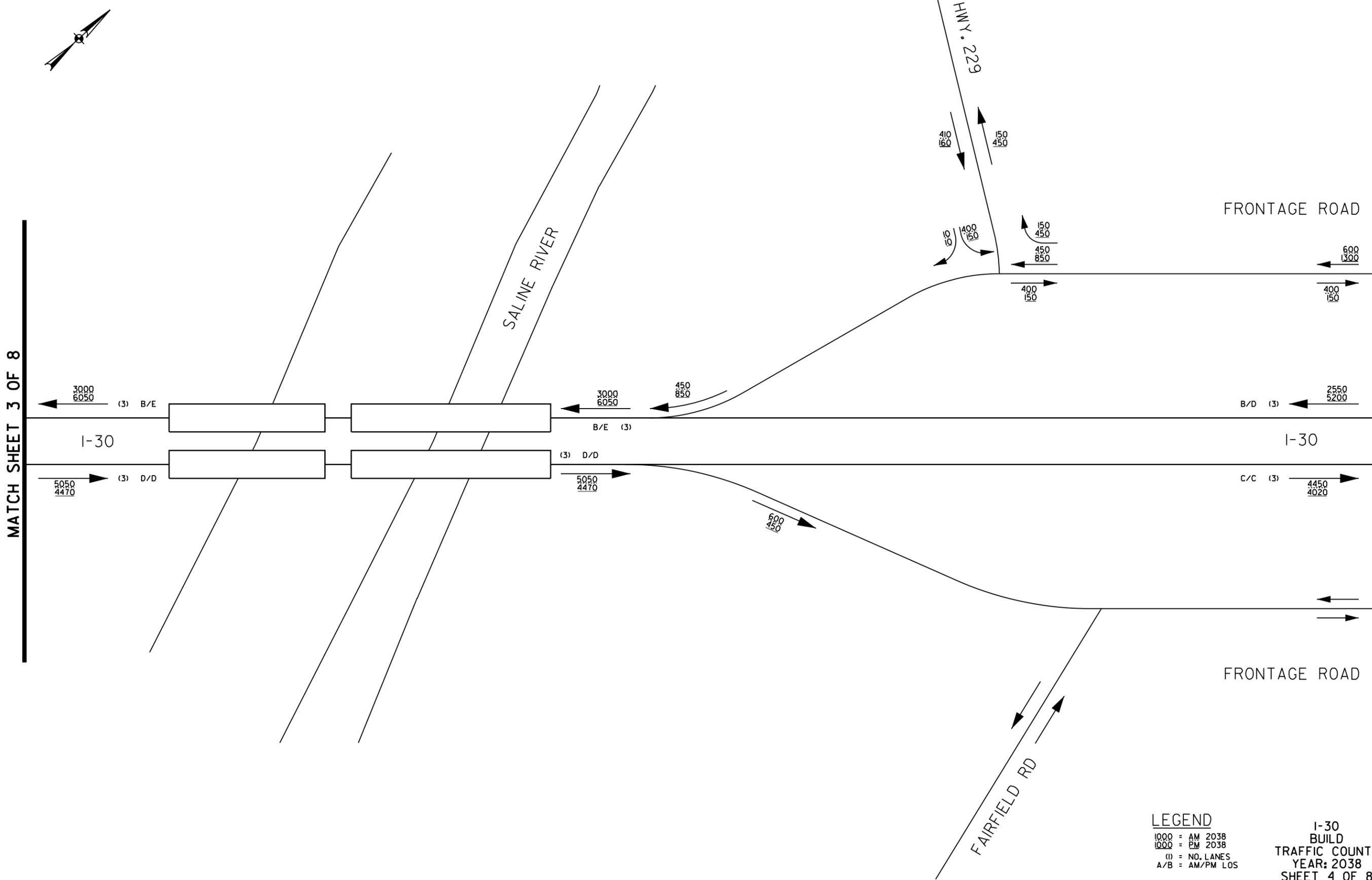


LEGEND
 1000 = AM 2038
 1000 = PM 2038
 () = NO. LANES
 A/B = AM/PM LOS

I-30 BUILD TRAFFIC COUNTS YEAR: 2038 SHEET 3 OF 8

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				6	ARK.			
JOB NO. CA0601								
② I-30 - Traffic Counts								



MATCH SHEET 3 OF 8

MATCH SHEET 5 OF 8

LEGEND
 1000 = AM 2038
 1000 = PM 2038
 () = NO. LANES
 A/B = AM/PM LOS

I-30 BUILD TRAFFIC COUNTS YEAR: 2038 SHEET 4 OF 8

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.		CA0601		
② I-30 - Traffic Counts								



TROUTT

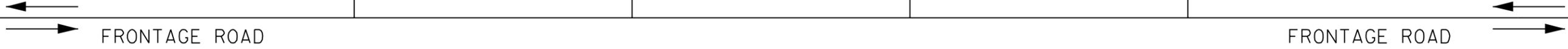
PIKE RD

BASS LN

CROUCH ST

MATCH SHEET 4 OF 8

MATCH SHEET 6 OF 8



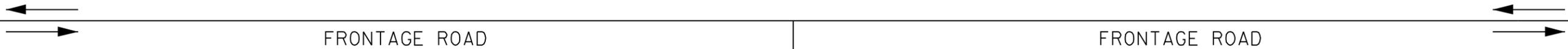
← 2550
5200 (3) B/D

B/D (3) ← 2550
5200

I-30

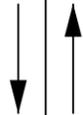
→ 4450
4020 (3) C/C

C/C (3) → 4450
4020



FRONTAGE ROAD

FRONTAGE ROAD



AIRPLANE DR

LEGEND

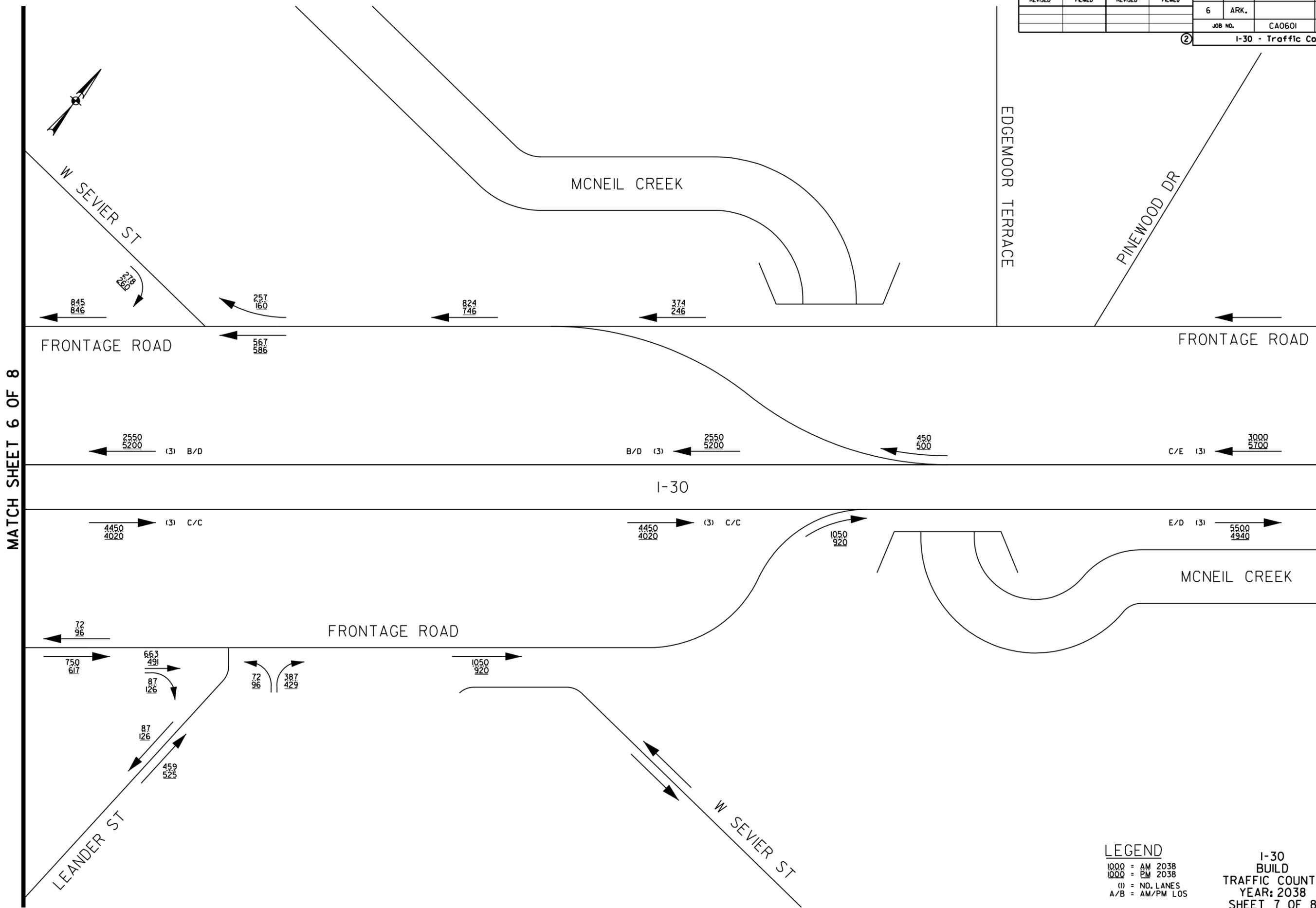
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 1000 = PM 2038
 () = NO. LANES
 A/B = AM/PM LOS

I-30
 BUILD
 TRAFFIC COUNTS
 YEAR: 2038
 SHEET 5 OF 8

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				6	ARK.			
JOB NO. CA0601								

② I-30 - Traffic Counts



MATCH SHEET 6 OF 8

MATCH SHEET 8 OF 8

LEGEND
 1000 = AM 2038
 1000 = PM 2038
 () = NO. LANES
 A/B = AM/PM LOS

I-30
 BUILD
 TRAFFIC COUNTS
 YEAR: 2038
 SHEET 7 OF 8

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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.	CA0601			
				② I-30 - Traffic Counts				



MCCRIGHT ST

PALMER AVE

FRONTAGE ROAD

FRONTAGE ROAD

MATCH SHEET 7 OF 8

← 3000
5700 C/E (3)

← 3000
5700 B/D (3)

← 450
750

← 2550
4950 B/D (3)

I-30

→ 5500
4940 E/E (3)

→ 5500
4940 E/E (3)

→ 1000
1100

→ 4500
3840 C/C (3)

FRONTAGE ROAD

LEGEND

1000 = AM 2038
1000 = PM 2038
(1) = NO. LANES
A/B = AM/PM LOS

I-30
BUILD
TRAFFIC COUNTS
YEAR: 2038
SHEET 8 OF 8

Future (2038) Traffic Volumes

US 70 EB to I-30 Interchange				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	1300	Autos	1222	55
Direction	EB	MT	26	55
d	2	HT	52	55
t	4		1300	

US 70 WB from I-30 Interchange				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	2000	Autos	1960	55
Direction	WB	MT	20	55
d	1	HT	20	55
t	1		2000	

US 70 EB Ramp to I-30 WB				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	50	Autos	44	40
Direction	EB	MT	2	40
d	3	HT	4	40
t	7		50	

US 70 EB Ramp to I-30 EB				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	1250	Autos	1187	55
Direction	EB	MT	25	55
d	2	HT	38	55
t	3		1250	

I-30 WB Ramp to US 70 WB				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	1800	Autos	1782	55
Direction	WB	MT	4	55
d	0.2	HT	14	55
t	0.8		1800	

I-30 EB Ramp to US 70 WB				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	200	Autos	156	25
Direction	EB	MT	12	25
d	6	HT	32	25
t	16		200	

I-30 WB South of US 70 Interchange				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	2600	Autos	1742	70
Direction	WB	MT	286	65
d	11	HT	572	65
t	22		2600	

I-30 EB South of US 70 Interchange				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	2470	Autos	1507	70
Direction	EB	MT	321	65
d	13	HT	642	65
t	26		2470	

I-30 WB Between US 70 Interchange Ramps				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	2550	Autos	1937	70
Direction	EB	MT	179	65
d	7	HT	434	65
t	17		2550	

I-30 EB Between US 70 Interchange Ramps				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	2270	Autos	1884	70
Direction	EB	MT	114	65
d	5	HT	272	65
t	12		2270	

I-30 WB from AR 229 On Ramp				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	4350	Autos	3305	70
Direction	WB	MT	305	65
d	7	HT	740	65
t	17		4350	

I-30 EB to AR 229 Off Ramp				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	3520	Autos	2746	70
Direction	EB	MT	246	65
d	7	HT	528	65
t	15		3520	

I-30 WB Between AR 229 Ramps				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	3650	Autos	2773	70
Direction	WB	MT	256	65
d	7	HT	621	65
t	17		3650	

I-30 EB Between AR 229 Ramps				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	2770	Autos	2160	70
Direction	EB	MT	194	65
d	7	HT	416	65
t	15		2770	

I-30 WB from Frontage Rd On Ramp				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	6050	Autos	4597	70
Direction	WB	MT	424	65
d	7	HT	1029	65
t	17		6050	

I-30 EB to Frontage Rd Off Ramp				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	4470	Autos	3486	70
Direction	EB	MT	313	65
d	7	HT	671	65
t	15		4470	

I-30 WB Between Frontage Rd Ramps				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	5200	Autos	4420	70
Direction	WB	MT	260	65
d	5	HT	520	65
t	10		5200	

I-30 EB Between Frontage Rd Ramps				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	4020	Autos	3296	70
Direction	EB	MT	201	65
d	5	HT	523	65
t	13		4020	

I-30 WB East of Frontage Rd Off Ramp				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	5700	Autos	4845	70
Direction	WB	MT	285	65
d	5	HT	570	65
t	10		5700	

I-30 EB East of Frontage Rd On Ramp				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	4940	Autos	4051	70
Direction	EB	MT	247	65
d	5	HT	642	65
t	13		4940	

Northern Frontage Rd West of AR 229				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	3050	Autos	3050	45
Direction		MT	0	
d		HT	0	
t			3050	

Southern Frontage Rd West of AR 229				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	220	Autos	220	45
Direction		MT	0	
d		HT	0	
t			220	

Future (2038) Traffic Volumes

I-30 EB Off Ramp to AR 229				
Traffic Information		EB Traffic Volumes and Speed		
Peak Hr Vol	750	Autos	750	55
Direction	EB	MT	0	55
d		HT	0	55
t			750	

I-30 EB On Ramp from AR 229				
Traffic Information		WB Traffic Volumes and Speed		
Peak Hr Vol	1700	Autos	1700	45
Direction	WB	MT	0	45
d		HT	0	45
t			1700	

I-30 WB On Ramp from AR 229 SB				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	300	Autos	300	45
Direction		MT	0	
d		HT	0	
t			300	

I-30 WB On Ramp from AR 229 NB				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	400	Autos	400	45
Direction		MT	0	
d		HT	0	
t			400	

AR 229 SB from I-30 EB Ramps				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	1600	Autos	1600	35
Direction		MT	0	
d		HT	0	
t			1600	

AR 229 NB to I-30 EB Ramps				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	1120	Autos	1120	35
Direction		MT	0	
d		HT	0	
t			1120	

AR 229 SB Between I-30 Ramps				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	2900	Autos	2900	35
Direction		MT	0	
d		HT	0	
t			2900	

AR 229 NB Between I-30 Ramps				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	1350	Autos	1350	35
Direction		MT	0	
d		HT	0	
t			1350	

AR 229 SB to I-30 WB Ramps				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	1400	Autos	1400	35
Direction		MT	0	
d		HT	0	
t			1400	

AR 229 NB from I-30 WB Ramps				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	1000	Autos	1000	35
Direction		MT	0	
d		HT	0	
t			1000	

I-30 WB Off Ramp to AR 229				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	2400	Autos	2400	35
Direction		MT	0	
d		HT	0	
t			2400	

AR 229 North of Frontage Rd, East of Saline River				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	610	Autos	610	35
Direction		MT	0	
d		HT	0	
t			610	

I-30 EB Off Ramp to Farifield Rd				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	450	Autos	450	45
Direction		MT	0	40
d		HT	0	40
t			450	

Northern Frontage Rd On Ramp to I-30 WB				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	850	Autos	850	45
Direction		MT	0	40
d		HT	0	40
t			850	

Northern Frontage Rd West of South St Interchange				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	1450	Autos	1450	45
Direction		MT	0	40
d		HT	0	40
t			1450	

Roundabout				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	279	Autos	279	15
Direction		MT	0	
d		HT	0	
t			279	

Northern Frontage Rd WB from Roundabout				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	652	Autos	652	45
Direction		MT	0	
d		HT	0	
t			652	

Northern Frontage Rd EB to Roundabout				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	279	Autos	279	30
Direction		MT	0	
d		HT	0	
t			279	

I-30 Frontage Rd WB to South St Interchange				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	646	Autos	646	35
Direction		MT	0	
d		HT	0	
t			646	

I-30 Frontage Rd WB to Roundabout				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	200	Autos	200	35
Direction		MT	0	
d		HT	0	
t			200	

South St to I-30 Overpass				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	646	Autos	646	45
Direction		MT	0	
d		HT	0	
t			646	

South St to I-30 Overpass from Roundabout				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	279	Autos	279	35
Direction		MT	0	
d		HT	0	
t			279	

Future (2038) Traffic Volumes

South St from I-30 Overpass				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	458	Autos	458	35
Direction		MT	0	
d		HT	0	
t			458	

South St from I-30 Overpass to Southern Frontage Rd				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	461	Autos	461	25
Direction		MT	0	
d		HT	0	
t			461	

Southern Frontage Rd from Fairfield Rd				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	698	Autos	698	45
Direction		MT	0	
d		HT	0	
t			698	

Southern Frontage Rd to South St				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	222	Autos	222	35
Direction		MT	0	
d		HT	0	
t			222	

Southern Frontage Rd bw South St Ramps				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	476	Autos	476	35
Direction		MT	0	
d		HT	0	
t			476	

Southern Frontage Rd under I-30 Overpass				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	713	Autos	713	35
Direction		MT	0	
d		HT	0	
t			713	

Southern Frontage Rd to I-30 Overpass				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	126	Autos	126	25
Direction		MT	0	
d		HT	0	
t			126	

Southern Frontage Rd to I-30 EB				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	920	Autos	920	45
Direction		MT	0	
d		HT	0	
t			920	

Leander St to Southern Frontage Rd WB				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	96	Autos	96	35
Direction		MT	0	
d		HT	0	
t			96	

Leander St to Southern Frontage Rd EB				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	429	Autos	429	35
Direction		MT	0	
d		HT	0	
t			429	

North Frontage Rd from I-30 WB Off Ramp to W Sevier St				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	746	Autos	746	45
Direction		MT	0	
d		HT	0	
t			746	

North Frontage Rd from W Sevier St				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	846	Autos	846	35
Direction		MT	0	
d		HT	0	
t			846	

W Sevier St, East of Woodland Dr				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	420	Autos	420	35
Direction		MT	0	
d		HT	0	
t			420	

W Sevier St, West of Woodland Dr				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	446	Autos	446	35
Direction		MT	0	
d		HT	0	
t			446	

Woodland Dr				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	119	Autos	119	25
Direction		MT	0	
d		HT	0	
t			119	

W South St, South of I-30				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	1638	Autos	1638	45
Direction		MT	0	
d		HT	0	
t			1638	

W South St to I-30 Overpass				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	433	Autos	433	35
Direction		MT	0	
d		HT	0	
t			433	

W South St, from I-30 Overpass to Bell St				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	559	Autos	559	45
Direction		MT	0	
d		HT	0	
t			559	

Bell St NB				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	126	Autos	126	25
Direction		MT	0	
d		HT	0	
t			126	

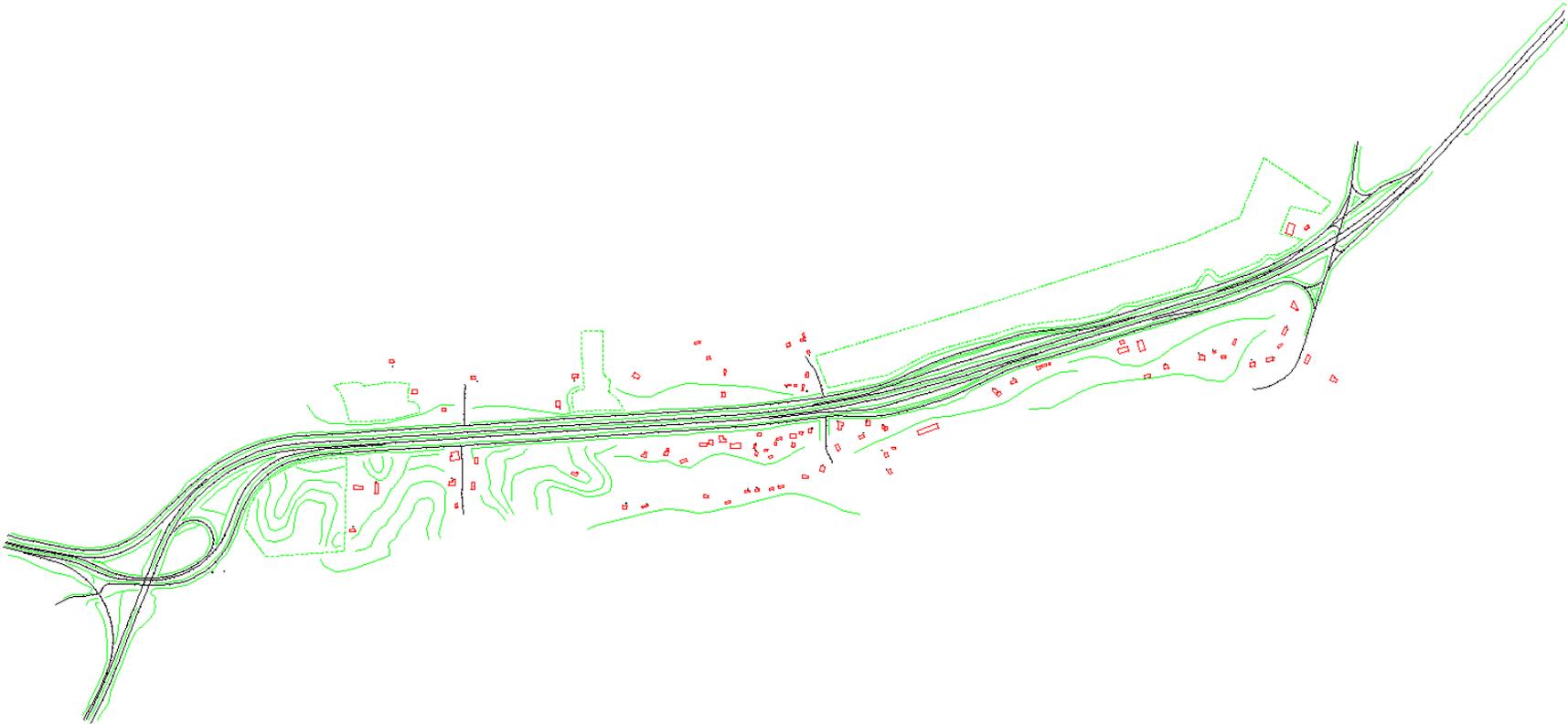
Bell St SB				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	13	Autos	13	25
Direction		MT	0	
d		HT	0	
t			13	

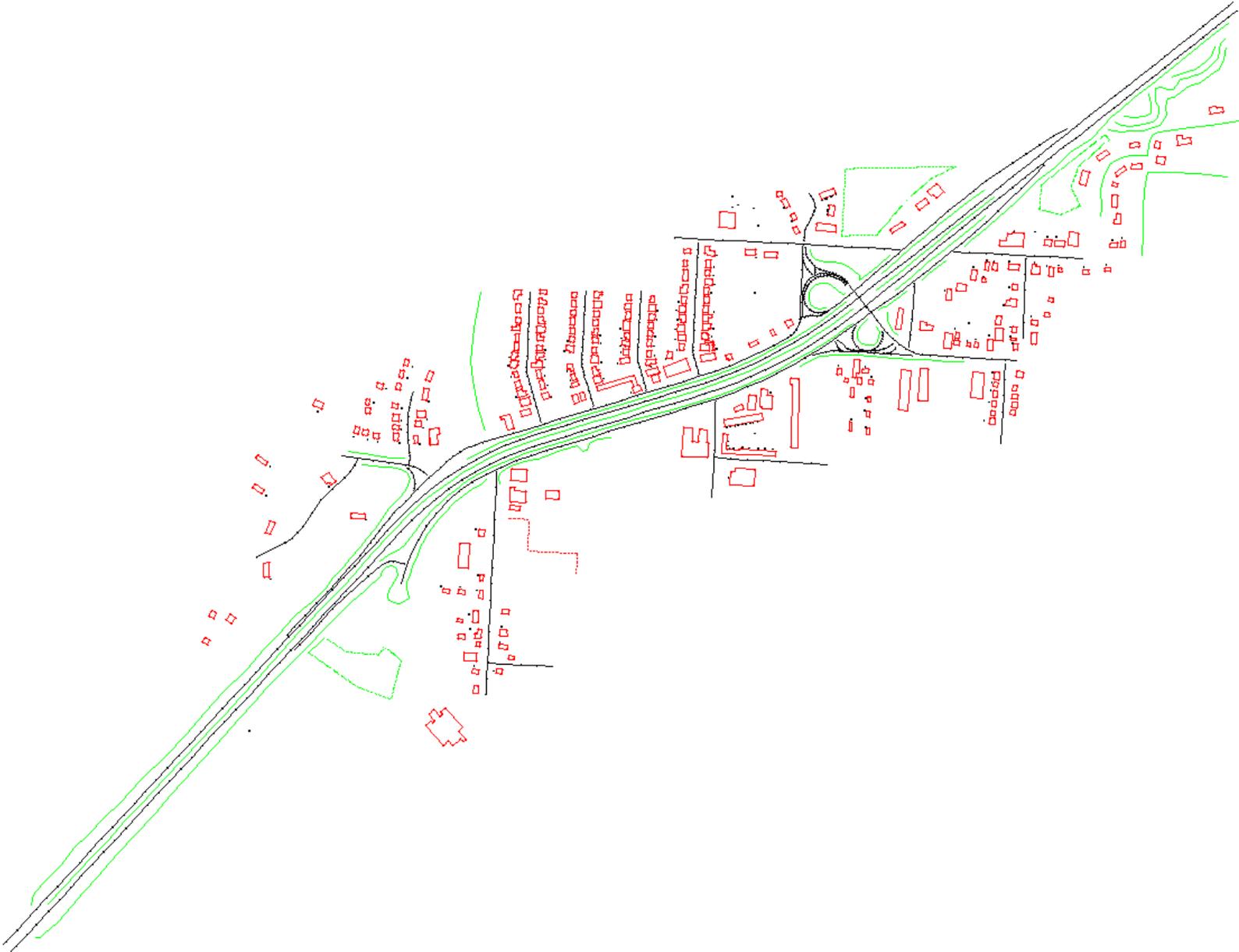
W South St, from Bell St to Roundabout				
Traffic Information		NB Traffic Volumes and Speed		
Peak Hr Vol	452	Autos	452	35
Direction		MT	0	
d		HT	0	
t			452	

Appendix C – TNM 2.5 Plan Views

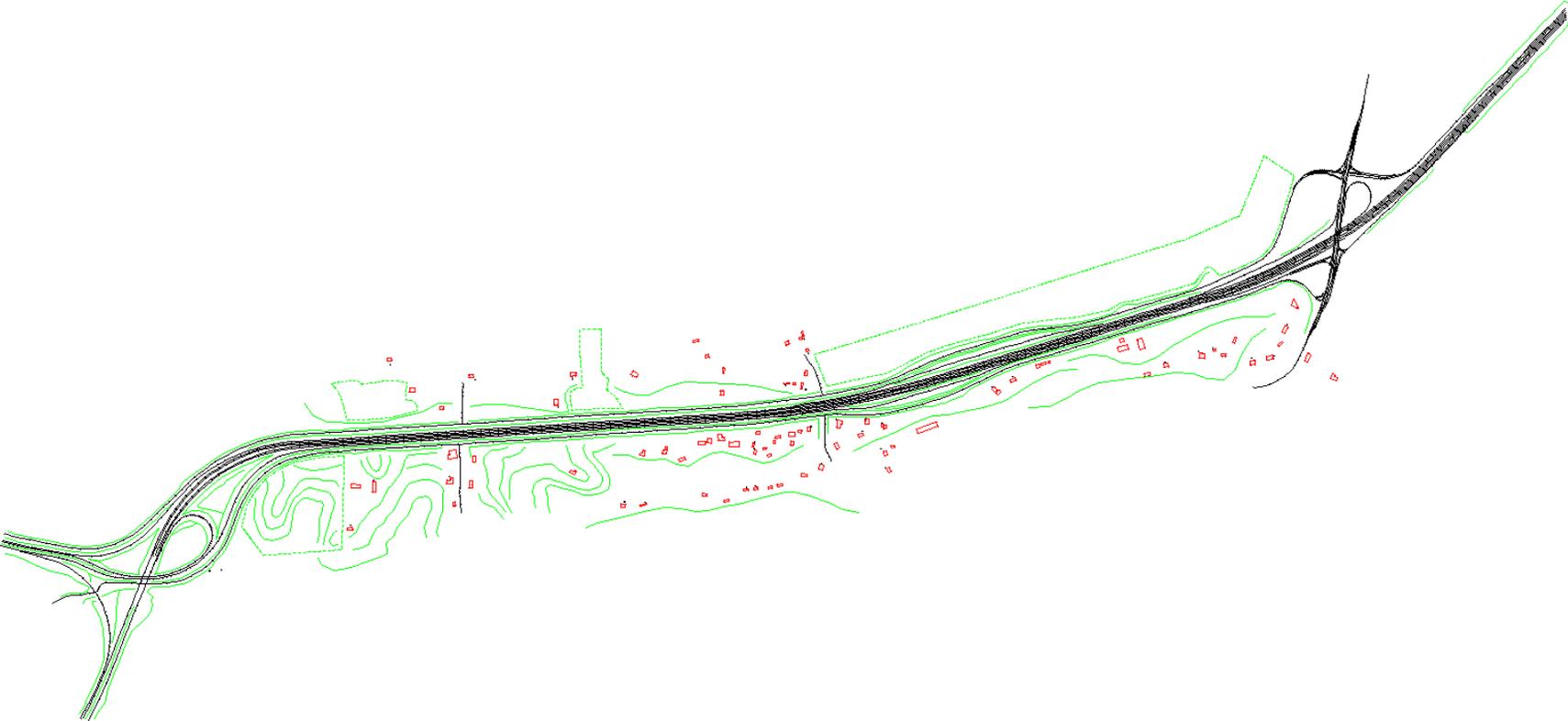
<i>TNM Run</i>	<i>Appendix Page</i>
Existing Models	
Existing Model - West	C-3
Existing Model - East	C-4
Build Models	
Build Model - West	C-6
Build Model - East	C-7

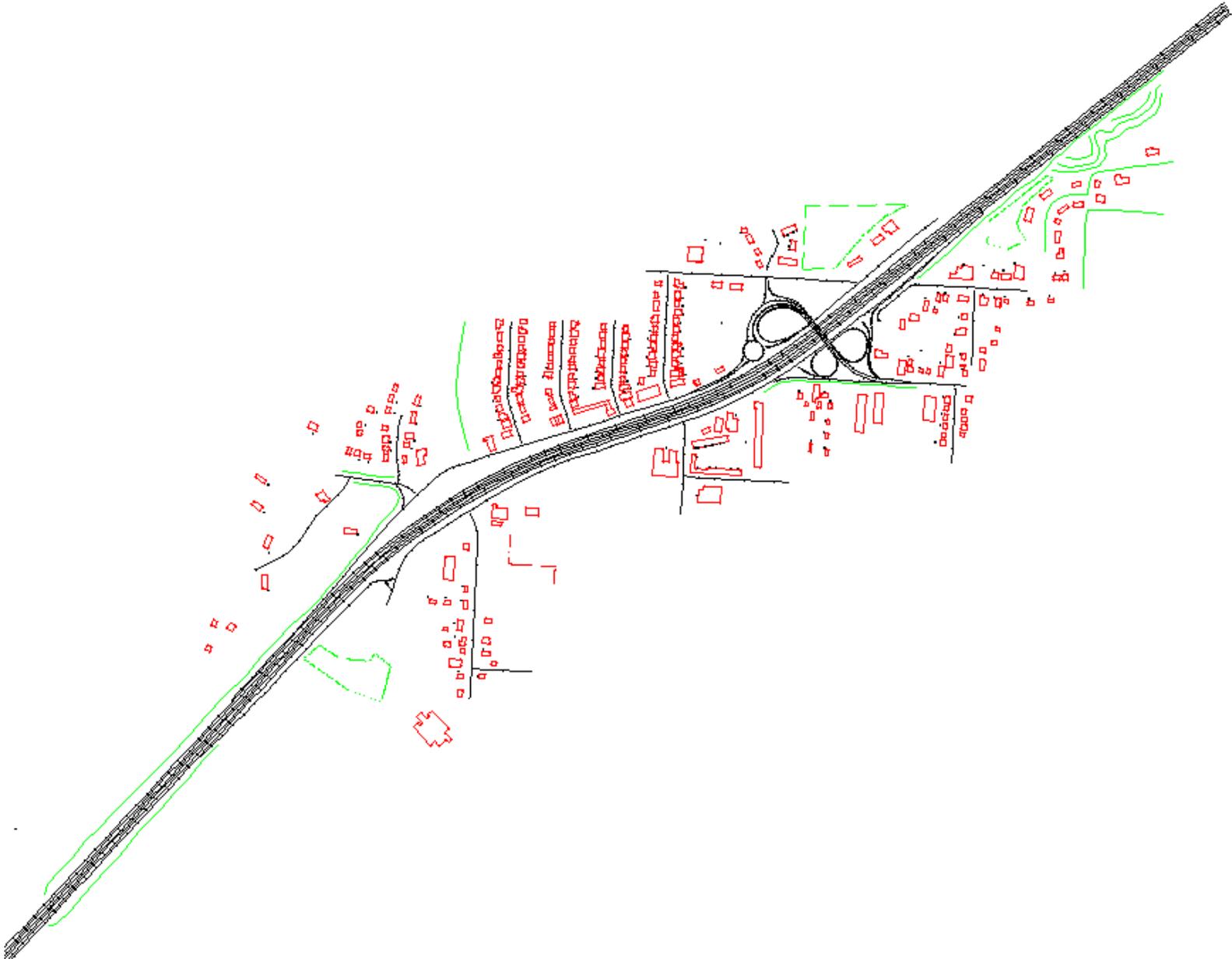
Existing Models





Build Models







CA0601 I-30 Widening, From Highway 70 to Sevier Street

Attachment G

Restraining Condition

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

INTEROFFICE MEMORANDUM

October 15, 2015

TO: Trinity D. Smith, Engineer of Roadway Design

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

SUBJECT: AHTD Job Number CA0601
Hwy. 70-Sevier St. (Widening) (S)
Saline County
Restraining Condition

Attached is the Restraining Condition Special Provision for the referenced project. Please ensure this document is incorporated into the project plans. Any questions should be directed to Kristina Boykin at 2079.

JF:DW:KB:jh

Attachment
Restraining Conditions Special Provision

C: Construction
Program Management
Right of Way
District 6 Engineer
Master File

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

SPECIAL PROVISION

JOB NO. CA0601

RESTRAINING CONDITIONS

Section 107.10 of the Standard Specifications for Highway Construction, Edition of 2014, is hereby amended as follows:

The following is added to **Section 107.10(c)**:

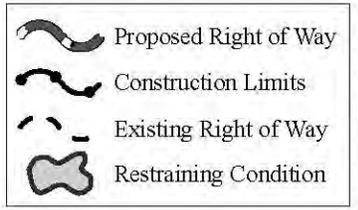
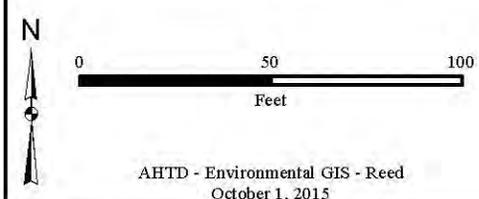
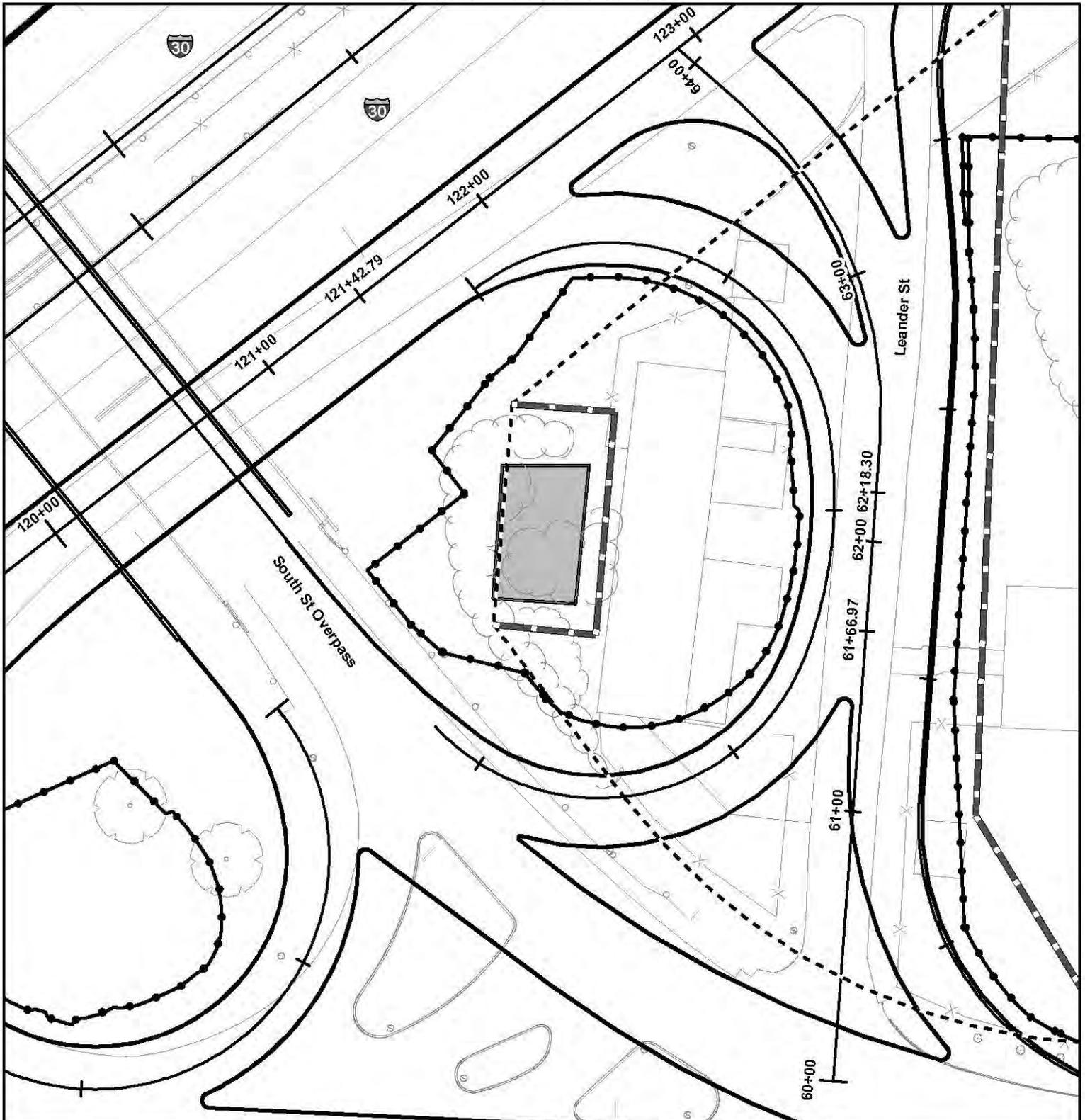
A restraining condition area (cemetery) is located adjacent to the ROW from Stations 61+66.97 Left and 62+18.30 Left (see the figure on page 2 of this special provision) and is considered a Restraining Condition in accordance with Section 107.10(b) of the Standard Specifications for Highway Construction, 2014. All construction activity within this specified location including the staging of equipment, storage or offsite use areas, and utility relocation must be avoided.

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

SPECIAL PROVISION

JOB NO. CA0601

RESTRAINING CONDITION





CA0601 I-30 Widening, From Highway 70 to Sevier Street

Attachment H

Public Involvement



Public Meeting Synopsis

Job CA0601

Hwy. 70–Sevier St. (Widening) (I-30)

Saline County

Thursday, November 5, 2015

An open-forum public involvement meeting for the proposed Hwy. 70–Sevier St. (Widening) (I-30) project was held at Holland Chapel Baptist Church (Family Life Center), 15523 Interstate 30 in Benton, Arkansas from 4:00 – 7:00 p.m. on November 5, 2015. A public officials meeting was held at 3:00 p.m. on the same day. Efforts to involve minorities and local property owners in the meeting included:

- Display ad placed in the Saline Courier on October 22, 2015 and October 29, 2015.
- Radio Public Service Announcement (PSA) was run twice a day from November 2 through November 5, 2015 on Cumulus Media-Power 92.3FM.
- Letters to public officials were mailed on October 16, 2015, and fliers were emailed on October 21, 2015.
- Letters to ministers were mailed and emailed October 21, 2015.
- Fliers to adjacent property owners were mailed October 19, 2015.
- Fliers to stakeholders and people interested in the project were mailed and emailed October 21, 2015.
- Meeting notice fliers were delivered door-to-door along the project route October 28, 2015.
- A news release was distributed to the media on October 30, 2015.
- A meeting announcement was listed on ConnectingArkansasProgram.com on October 16, 2015 and ArkansasHighways.com on October 16, 2015.



Public Meeting Synopsis

The following information was available for inspection and comment.

- Two aerial photograph roll plots at a scale of 1" = 100', illustrating the entire length of the proposed project
- Two aerial photograph interchange plots at a scale of 1"=75' detailing the interchange at Hwy. 67
- Two aerial photograph interchange plots at a scale of 1"=50' detailing the interchange at South St.
- Two 24" x 36" aerial photographs on mounted boards at a scale of 1" = 1000', illustrating the entire length of the proposed project
- Three CAP informational boards

Handouts for the public included a comment sheet and a small-scale map illustrating the project location, which was identical to the aerial photography display. Copies of these are attached to this synopsis.

Table 1 describes the results of public officials participation at the 3 p.m. meeting.

Table 1	
Public Official Participation	Total
Attendance at meeting (including AHTD and CAP staff)	10
Comments received	1

Jeff Arey, Saline County Judge, submitted a comment. He stated that the exhibit barn at the county fairgrounds will be eliminated due to this improvement and that the barn does have historical significance.

Table 2 describes the results of public participation at the 4-7 p.m. meeting.

Table 2	
Public Participation	Total
Attendance at meeting (including AHTD and CAP staff)	83
Comments received	29



Public Meeting Synopsis

Bridgefarmer reviewed all comments received and evaluated their contents. The summary of comments listed below reflects the personal perception or opinion of the person or organization making the statement. The sequencing of the comments is random and is not intended to reflect importance or numerical values. Some of the comments were combined and/or paraphrased to simplify the synopsis process.

An analysis of the responses received from the public survey is shown in Table 3.

Table 3	
Survey Results	Totals
Supports improvements to I-30	20
Does not support improvements to I-30	9
Believes the project would have beneficial impacts	10
Believes the project would have adverse impacts	10
Knowledge of historical, archeological or cemetery sites	4
Knowledge of area environmental constraints	2
Home or property offers limitations to the project that need to be considered during the design	1
Suggestion to better serve the needs of the community	12
Additional Comments	11
Total Comments Received	29

The following is a listing of comments concerning issues associated with this project.

- Two individuals wanted the Hwy 67 widening to extend around the curve toward Haskell.



Public Meeting Synopsis

- Two individuals wanted access to Pawnee Dr. from the I-30/Hwy. 70 interchange.
- One individual wanted a bridge at AR 229.
- One individual wanted more lighting along I-30 toward Little Rock.
- One individual was concerned about traffic during construction.
- Two individuals wanted the construction schedule expedited.
- Ten individuals were concerned about making Sevier St. a dead end and restricting access to the Benton First Church of the Nazarene and adjacent businesses.
- Two individuals requested a meeting to discuss the Sevier St. issue above.
- Two individuals mentioned the Crouch Cemetery near South St.
- One individual wanted lighting for the proposed traffic circle at South St.
- One individual wanted to make sure that the Crouch property on the north side of the highway was provided with adequate drainage.
- One individual wanted trees along the side of the project removed and the land made available to adjacent businesses.
- One individual wanted the Hot Springs MLK Bypass extended from Hwy 70 to AR 5 and AR 7.
- Three individuals were concerned about the project having a negative effect on their property.
- One individual wanted the slip ramp from I-30 Eastbound to the Frontage Road near Hwy 67 to remain as-is.
- One individual mentioned an old landfill 200ft up Brent Ford Rd.

Attachments:

- Blank comment form
- Public officials sign-in sheet
- 11x17 map handout
- Small-scale copy of the display board



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

July 9, 2018

Mr. Angel Correa
Division Administrator
Federal Highway Administration
700 West Capitol, Room 3130
Little Rock, Arkansas 72201-3298

Re: Job Number CA0601
FAP Number ACNHPP-030-2(267)111
Highway 70 - Sevier St. (Widening)
(I-30)
Saline County
Environmental Reassessment

Dear Mr. Correa:

The referenced project was evaluated in a Tier 3 Categorical Exclusion (CE) approved June 30, 2016. A reassessment of the project was required due to a change in the scope of work since the approval of the CE.

The plans for the subject job have been modified to add bridge replacements for the westbound and eastbound I-30 bridges (3251A&B) over Highway 70. The previous job limit was located just east of these bridges. The job limits now include these bridge replacements and extend 0.54 mile west. Also with the bridge modification, the horizontal curve east of the bridges will be flattened to increase safety. A project location map is enclosed.

The existing roadway consists of two 12-foot wide travel lanes in both directions with six-foot wide inside shoulders and ten-foot wide outside shoulders. A 40-foot wide median separates the travel lanes. Proposed improvements include replacing the existing pavement with concrete pavement, and providing two 12-foot wide travel lanes with six-foot wide inside shoulders and 10-foot wide outside shoulders. A concrete barrier wall will be provided in the median. The bridges will be replaced on an offset alignment. The bridges will consist of continuous composite plate girders on multi-column intermediate bents on drilled shafts. The eastbound bridge will be 416' x 52' and the westbound bridge will be 416' x 40'.

There are no relocations, prime farmland, wetlands, or cultural resources associated with this project. There are no environmental justice issues involved with this project. An additional 0.88 acre of right of way will be acquired. The cultural resources clearance is enclosed. Field inspections did not reveal any existing underground storage tanks or hazardous waste deposits.

There are minor impacts associated with the realignment of an ephemeral stream. The project will realign the channel resulting in a loss of approximately 120 linear feet of open channel to be replaced by a box culvert. The mitigation required for unavoidable impacts will require 1,482.6 credits from the Upper Saline River Mitigation Bank.

The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation website lists the northern long-eared bat (*Myotis septentrionalis*), Arkansas Fatmucket (*Lampsilis powellii*), Rabbitsfoot (*Theliderma cylindrica*), Pink Mucket (*Lampsilis abrupta*), and Winged Mapleleaf (*Quadrula fragosa*) as threatened and endangered species potentially occurring at or near the project location. Freshwater mussel surveys conducted at the Saline River by ARDOT personnel in 2014 and 2015 encountered several Arkansas Fatmucket individuals. This discovery prompted the Federal Highway Administration (FHWA) and ARDOT to enter into formal consultation with the USFWS in April 2016. The USFWS issued a Biologic Opinion (BO) on June 22, 2016 in accordance with Section 7(a)(2) of the Endangered Species Act. No additional impacts to threatened or endangered species will occur due to the proposed design changes. The BO is enclosed.

The USFWS BO concurred with the FHWA/ARDOT's "no effect" determinations for Winged Mapleleaf and the "may affect, not likely to adversely affect" determination for Rabbitsfoot and Pink Mucket on April 19, 2016. It was also determined that the project may affect the northern long-eared bat; however, no prohibited take will occur following the guidance of the final 4(d) rule (50 CFR §17.40(o)). Reasonable and prudent measures of the BO include implementing the proposed action as described in the BO; relocating all Arkansas Fatmucket found within the action area; providing funds to support two years of Arkansas Fatmucket propagation in the headwaters of the Saline River; ensuring erosion control best management practices are properly installed and maintained to minimize sediment effects; installation and maintenance of stable river crossings and approaches to minimize sediment effects; and stabilization of stream banks within and immediately adjacent to Interstate 30 right of way (within action area) to minimize sediment and channel geomorphology effects. During October 2016, all Arkansas Fatmucket were relocated to a USFWS and Arkansas Game and Fish Commission approved site upstream. Funding to a propagation facility focusing on the Arkansas Fatmucket mussel has been put on hold by the USFWS until further notice pending the results of ongoing genetic research. All other reasonable and prudent measures will be implemented during project construction.

This project will remain a Tier 3 Categorical Exclusion as defined by the ARDOT/FHWA Memorandum of Agreement on the Processing of Categorical Exclusions.

If you have any questions, please contact the Environmental Division at 569-2281.

APPROVED

Environmental Specialist
Federal Highway Administration
Date: 7/10/2018

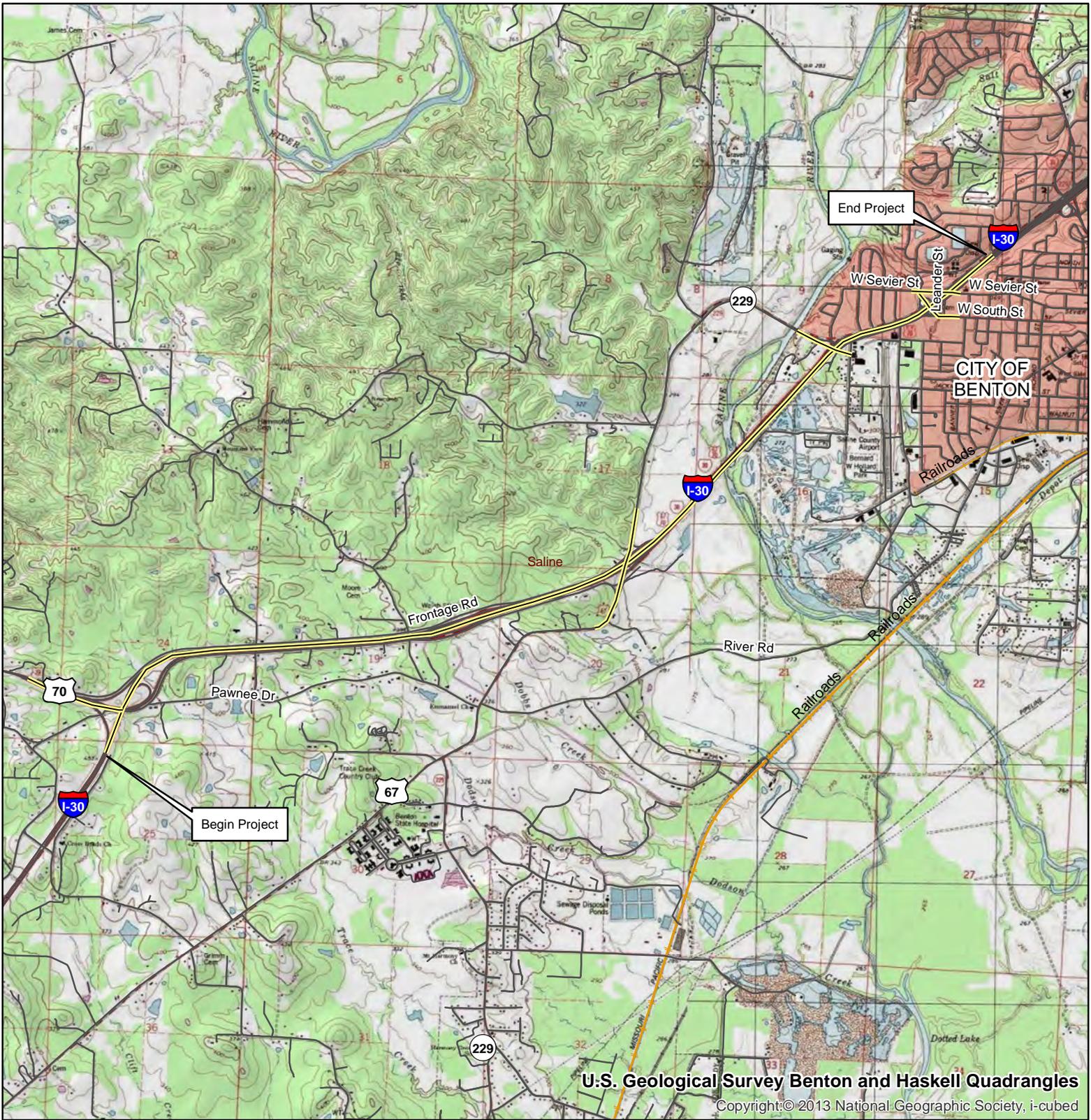
Sincerely,

John Fleming
Division Head
Environmental Division

Enclosures

JF:BM:fc

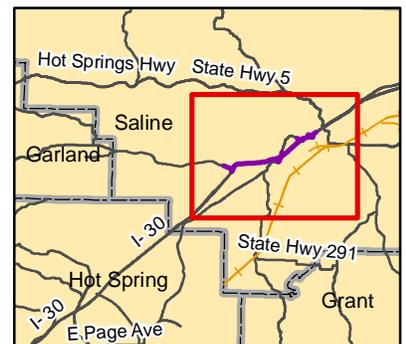
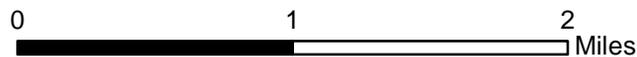
c: Program management
Right of Way
Roadway Design
District 6



**ARDOT Job CA0601
 Hwy. 70 - Sevier St.
 (Widening) (I-30)
 Project Location**

Legend

— Project Corridor





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

March 9, 2018

99864.43

FHW A

RECEIVED
ARDOT

MAR 13 2018

ENVIRONMENTAL
DIVISION

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

AHPP
MAR 09 2018

RE: Job No. CA0601
Hwy. 70 – Sevier St. (Widening) (F)
Route 30, Section 22
Saline County

Dear Ms. Hurst,

A 2nd Addendum to the Project Report for the referenced project is enclosed. Please review for concurrence with the findings of my staff. If you have any questions or require additional information, please contact Kristina Boykin of my staff at (501) 569-2079.

Sincerely,

John Fleming
Division Head
Environmental Division

Enclosure
2nd Addendum

JF:DW:KB:ym

Date 3/12/2018
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



IN REPLY REFER TO.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

110 South Amity Road, Suite 300

Conway, Arkansas 72032

Tel.: 501/513-4470 Fax: 501/513-4480



June 22, 2016

Mr. Randal Looney
Federal Highway Administration
Arkansas Division
700 West Capitol Avenue
Room 3130
Little Rock, Arkansas 72201-3298

Dear Mr. Looney:

This document is the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) based on our review of the proposed plans to widen and update associated intersections and structures on Interstate 30 (I-30) between Sevier Street and U.S. Highway 70 located in Saline County, Arkansas, and its effects on Arkansas Fatmucket (*Lampsilis powellii*). This BO has been prepared in accordance with Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. 1531 *et seq.*), and its implementing regulations (50 CFR §402). The Service acknowledged by letter on April 19, 2016, the receipt of your April 12, 2016, email requesting initiation of formal section 7 consultation under the Endangered Species Act along with the accompanying biological assessment (BA).

Section 7(a)(2) of the Act requires federal agencies to consult with the Service to ensure any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any federally listed species nor destroy or adversely modify critical habitat. This BO is based on the best available scientific and commercial data including meetings, electronic mail and telephone correspondence with the Federal Highway Administration (FHWA), Arkansas Highway and Transportation Department (AHTD), Service files, pertinent scientific literature, discussions with recognized species authorities, the Recovery Plan for the Arkansas Fatmucket (Service 1992), Arkansas Fatmucket 5-year Review (Service 2013) and other scientific sources. A complete administrative record is on file at the Arkansas Ecological Services Field Office.

Consultation History

Northern Long-eared Bat

The Service has reviewed the project information submitted in the BA and FHWA/AHTD's determination that the proposed action will not result in any prohibited incidental take. This project may affect the Northern Long-eared Bat; however, there are no effects beyond those previously disclosed in the Service's programmatic biological opinion for the final 4(d) rule dated January 5, 2016. Any taking that may occur incidental to this project is not prohibited under the final 4(d) rule (50 CFR §17.40(o)). This project is consistent with the description of the

proposed action in the programmatic biological opinion, and the 4(d) rule does not prohibit incidental take of the northern long-eared bat that may occur as a result of this project. Therefore, the programmatic biological opinion satisfies the FHWA/AHTD's responsibilities under ESA section 7(a)(2) relative to the northern long-eared bat for this project.

FHWA/AHTD must report any departures from the plans submitted; results of any surveys conducted; or any dead, injured, or sick northern long-eared bats that are found to this office. If this project is not completed within one year of this letter, you must update your determination and resubmit the required information.

Freshwater Mussels

AHTD staff conducted a freshwater mussel survey to determine presence/absence within the project area (FHWA 2016). Two live Arkansas Fatmucket specimens were located during the initial time constrained survey of the Saline River on October 30, 2014. This discovery prompted the Service to request further quantitative sampling, which took place on June 30, 2015 and July 24, 2015. Survey methodology consisted of marking all mussels with flags to determine bed size and areal dimensions. In total seven Arkansas Fatmucket individuals were encountered, including the two from the initial survey. A relict valve of the federally threatened Rabbitsfoot (*Quadrula cylindrica cylindrica*) was collected during this quantitative sample within the delineated mussel bed. Qualitative dive locations and delineated bed boundaries can be found in Appendix A.

Winged Mapleleaf (*Quadrula fragosa*) occurs in the Saline River downstream of the action area. Pink Mucket (*Lampsilis abrupta*) occurs in the Saline River upstream and downstream of the action area. The Service found a single "fresh dead" Pink Mucket approximately 0.25 km upstream of the project site during a survey in June 2015 (C. Davidson, pers. comm. 2016), but no live Pink Mucket are known to occur within the action area. The Service concurred with FHWA/AHTD's no effect determinations for Winged Mapleleaf and the "may affect, not likely to adversely affect" determination for Rabbitsfoot and Pink Mucket on April 19, 2016.

In an email dated March 7, 2016, the FHWA/AHTD provided their BA and requested to initiate consultation with the Service.

In an email date March 10, 2016 the Service sent a request for additional information and a revision of the original BA.

In an email dated March 29, 2016, the AHTD submitted a revised BA.

Following phone conversations AHTD submitted a revised BA in an email dated April 12, 2016.

In an email dated April 19, 2016, the Service responded with an email accepting the BA and agreeing to enter into formal consultation. The formal consultation began April 19, 2016, the date the Service concurred with FHWA's adverse effect determination.

In an email dated April 25, 2016 the Service provided a draft BO to the AHTD for review and

further discussion.

AHTD replied by email on April 26, 2016 receipt of the draft and questions regarding the draft.

On May 20, 2016, AHTD provided an email with comments to the Service on the Draft BO.

The Service issued its final BO on June 22, 2016, concluding formal consultation.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The AHTD plans to widen and update associated intersections and structures on I-30 between Sevier Street and U.S. Highway 70 in Saline County, Arkansas. Currently the interstate consists of two 3.7 m (12 ft.) travel lanes with 1.9 m (6 ft.) interior shoulders and 3.0 m (10 ft.) outer shoulders. Typical section improvements will consist of three 3.7 m (12 ft.) travel lanes with 3.0 m (10 ft.) interior shoulders and 3.7 m (12 ft.) outer shoulders. Interchanges at U.S. Highway 67, U.S. Highway 70, and Sevier Street will be reconstructed to allow easier and safer ingress/egress onto I-30. Illustrations can be found in Appendix A.

The bridges spanning the Saline River and Saline River Relief will be upgraded on location to accommodate three travel lanes each direction. New piers and bents will be constructed and existing ones removed in three stages. Box culverts and associated cross drains throughout the remainder of project length will be retained and extended to accommodate road widening.

ACTION AREA

The action area consists of the river reach proposed for construction extending 30.5 m (100 ft.) upstream and 91.4 m (300 ft.) downstream of the I-30 bridge at the Saline River. Additionally, a 0.5 km (0.3 mi) area surrounding the construction limit is also being assessed to account for noise and smoke associated with project construction. The project location is within the upper Saline River Watershed (HUC 08040203) which consists of 1,715 mi² (4,440 km²). The land use is approximately 77.9% forest, 8.5% herbaceous, 7.1% grassland, 5.6% urban. Much of the grassland occurs within the flood plain of the Saline River. The substrate consists of gravel, sands and fines within the extent of the action area. The specific project area consists of these same substrate types with gravel and sands at center channel, gravels and sands on the inside of the bend; and gravel, sand, and fines along the thalweg and outside bank.

The specific habitat type within the project area is a run. The run is preceded by a low gradient riffle and followed by another low gradient riffle. Immediately upstream of the upper riffle is a small pool of approximately 224 m in length. Additional alternating runs and riffles dominate downstream for approximately 1,352 m.

STATUS OF THE SPECIES/CRITICAL HABITAT

Arkansas Fatmucket (*Lampsilis powelli*)

Arkansas Fatmucket was listed as threatened under the ESA on April 5, 1990 (55 Federal Register 12797). No critical habitat has been designated for Arkansas Fatmucket. The recovery plan for the species was published February 10, 1992 (Service 1992). A five year status review was initiated September 8, 2006 (71 Federal Register 53127) and completed in 2013 (Service 2013). No critical habitat has been designated for Arkansas Fatmucket.

The Arkansas Fatmucket was described as *Unio powelli* by Lea in 1852 from the Saline River, Arkansas (Johnson 1980), and placed in the genus *Lampsilis* by Simpson (1914). Hoeh and Breton (2012) examined mitochondrial DNA (mtDNA) genomic divergences between Arkansas Fatmucket and the closely related Fatmucket (*Lampsilis siliquoidea*). Their findings were consistent with the hypothesis that Arkansas Fatmucket is a valid species currently experiencing mtDNA introgression due to limited interspecific hybridization with Fatmucket.

The Arkansas Fatmucket is a medium size freshwater mussel (occasionally exceeds 4 inches). The shell is elliptical to long obovate with sub-inflated valves. The shell surface is smooth with a shiny olive brown to tawny periostracum and lacks rays. There are tiny pits running down the shell that sometimes appear to be rays (Harris and Gordon 1990) and there is sexual dimorphism in shell shape (Johnson 1980).

Status and distribution

Arkansas Fatmucket is endemic to the Ouachita Mountains region of the Ouachita River basin in Arkansas. The current known range is restricted to the Caddo River from the confluence of Collier Creek (between Norman and Caddo Gap, Arkansas) to Arkansas Highway 84 (near Amity, Arkansas; 24.3 river miles (rm)); Ouachita River from near the confluence of Chances Creek to the confluence of Polk Creek (16.2 rm); Ouachita River from near the confluence of Snake Creek to Hole In The Ground Creek (7.8 rm), Arkansas Highway 379 to U. S. Highway 270 (12.5 rm), and Interstate 30 to Arkansas Highway 222 (15 rm); South Fork Ouachita River from Montgomery County Road 17 to the inundation pool of Lake Ouachita (14.3 rm); Middle Fork Saline River from Arkansas Highway 7 to its confluence with the Alum Fork Saline River (30.2 rm); Alum Fork Saline River from Love Creek to the inundation pool of Lake Winona (5.6 rm), Lake Winona Dam downstream to the Middle Fork Saline River confluence (28.0 rm), and extending upstream approximately 6.0 rm from the North Fork Saline River confluence; North Fork Saline River from Arkansas Highway 9 to Arkansas Highway 5 (21.7 rm); Saline River from its formation downstream to U.S. Highway 270 (43.6 rm). Extant Arkansas Fatmucket populations have been presumably extirpated from approximately 87 rm range-wide since listing, representing a 28 percent reduction in occupied stream reaches (Service 2013; Figures 1 – 3).

Harris *et al.* (2009) summarize the status and distribution of Arkansas Fatmucket. Scott (2004) and Christian *et al.* (2006) surveyed 30 Arkansas Fatmucket sites from Harris and Gordon (1988) and three additional sites not previously explored. A total of 137 Arkansas Fatmucket specimens were collected from 19 of 33 surveyed sites. Arkansas Fatmucket numbers were significantly

reduced across 29 sites compared to the numbers collected by Harris and Gordon (1988). These surveys provided the first statistical documentation of a range wide decline of Arkansas Fatmucket since federal listing in 1990.

Scott (2004) and Christian et al. (2006) focused their survey effort on previously documented Arkansas Fatmucket sites. In 2006 and 2007, the Service and the AGFC conducted a range wide status assessment focused on determining current distribution and abundance. Results from this survey yielded 15 new sites not documented in previous surveys. The Service and AGFC conducted range wide status assessment again in 2014 – 2015. Results indicate widespread declines in abundance and distribution throughout the Saline River headwaters (Alum, Middle, and North Forks; C. Davidson 2016, pers. comm.). Arkansas Fatmucket appears stable at sites where it occurs in the main stem Saline River from near Benton to Tull, Arkansas, (including the action area).

Figure 1 - Distribution of Arkansas Fatmucket

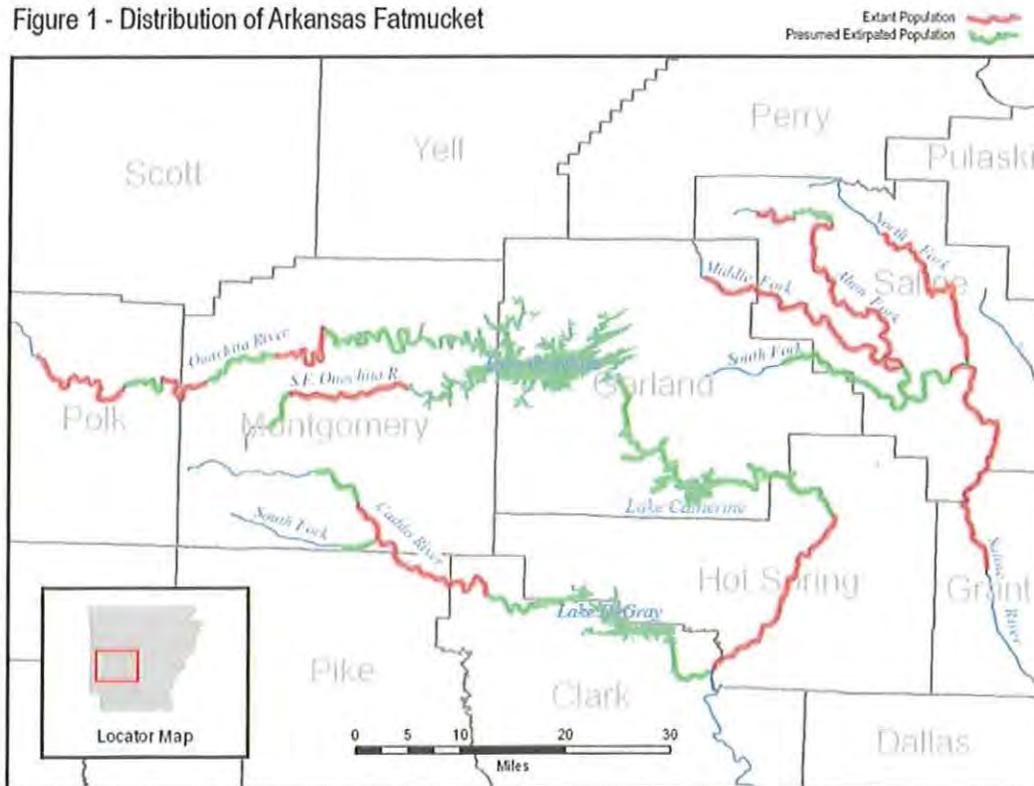


Figure 2 - Live and fresh dead occurrences of Arkansas Fatmucket, 1981-1996

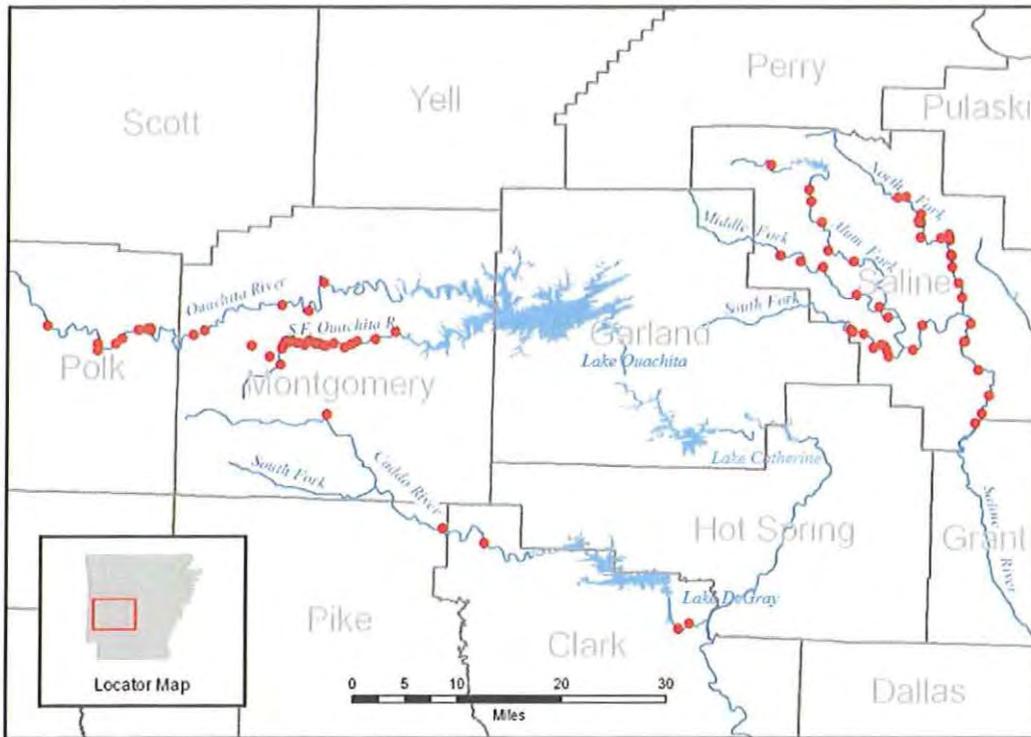
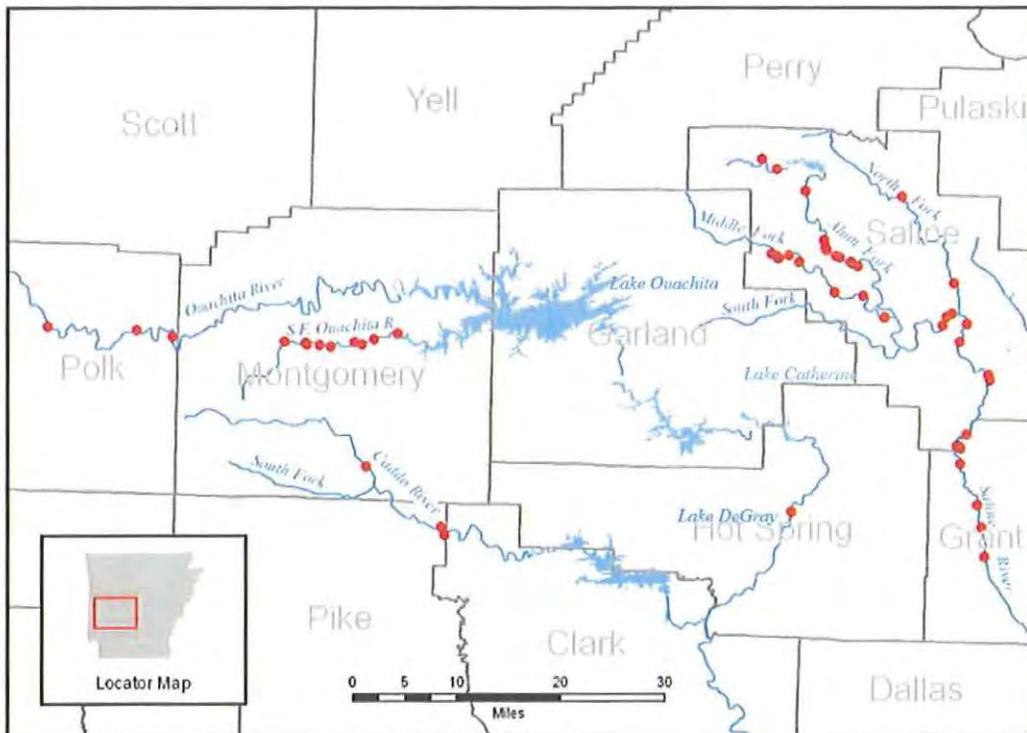


Figure 3 - Live occurrences of Arkansas Fatmucket since 1997



Life history

Biological information specific to this species is sparse, but general information known about other freshwater mussels applies to this taxon. Mussels in streams occur chiefly in “flow refuges” (relatively stable areas that displayed little movement of substrate particles during flood events) (Strayer 1999). Mussel location and density are greatest in areas where shear stress (stream’s ability to entrain and transport bed material created by the flow acting on the bed material) is low and sediments remain generally stable during flooding (Layzer and Madison 1995; Strayer 1999; Hastie et al. 2001). These “flow refuges” conceivably allow relatively immobile mussels to remain in the same general location throughout their life span. However, flow refuges are not created equally and other habitat variables are important, but poorly understood (Roberts 2008, pers. comm.).

Food habits – Freshwater mussels siphon water into their shells and across four gills specialized for respiration and food collection. Food items include algae, bacteria, detritus (disintegrated organic debris), and microscopic animals (Strayer et al. 2004). It also has been surmised dissolved organic matter may be a significant source of nutrition (Strayer et al. 2004). Adults are filter feeders and generally orient themselves on or near the substrate surface to take in food and oxygen from the water column. Juveniles typically burrow completely beneath the substrate surface and are pedal (foot) feeders (bringing food particles inside the shell for ingestion that adhere to the foot while it is extended outside the shell) until the structures for filter feeding are more fully developed (Yeager et al. 1994; Gatenby et al. 1996).

Growth and longevity – Growth rates for mussels are highly variable among individual species, but overall, mussels tend to grow relatively rapidly for the first few years (Scruggs 1960; Negus 1966) then slow appreciably (Bruenderman and Neves 1993; Hove and Neves 1994). This reduction in growth rate is correlated to sexual maturity, probably as a result of energy being diverted from growth to gamete production (Baird 2000). No quantitative information on the longevity of Arkansas Fatmucket is available.

Reproductive biology – Sex ratios in mussels generally do not differ significantly from 1:1. Data collected by Scott (2004), Christian et al. (2006) and the Service (2013) indicate similar sex ratios for Arkansas Fatmucket. Age at sexual maturity for the Arkansas Fatmucket is unknown.

Males release sperm into the water column, which are drawn in by females through their siphons during feeding and respiration. Fertilization takes place inside the shell, and success is apparently influenced by mussel density and water flow conditions (Downing et al. 1993). The eggs are retained in the female gills until they develop into mature larvae called glochidia. The glochidia of Arkansas Fatmucket have a parasitic stage during which they must attach to the gills of a fish to transform into a juvenile mussel. Arkansas Fatmucket females release glochidia separately. The duration of the parasitic stage varies by mussel species, water temperature, and perhaps host fish species.

From parasitic glochidia to free-living juveniles – Arkansas Fatmucket glochidia are an obligate parasite on sunfish (*Centrarchidae*), primarily largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*) and spotted bass (*Micropterus punctatus*) (Scott 2004;

Christian et al. 2006). The Arkansas Fatmucket is gravid March through October (Scott 2004; Christian et al. 2006). Glochidia generally spend from two to six weeks parasitizing the host fish, the duration of encystment being dependent on the mussel species and water temperature (Zimmerman and Neves 2002). Newly-metamorphosed juveniles drop off to begin a free-living existence on the stream bottom. Arkansas Fatmucket is generally associated with pools and backwater areas in sand, sand-gravel, sand-cobble, or sand-rock with sufficient flow to periodically remove organic detritus and other debris. It is frequently found adjacent to water willow (*Justicia americana*).

Recovery and Management

The recovery objective of the Arkansas Fatmucket (*Lampsilis powellii*) Recovery Plan is to delist the species (Service 1992). Recovery criteria for achieving the objective include:

1. Viable populations in the Ouachita, South Fork Ouachita, Saline, Alum Fork Saline, North Fork Saline, and Middle Fork Saline Rivers (the recovery plan defines a viable population as a population with the reproductive capability to sustain itself without immigration of individuals from another population),
2. Habitat for these population is fully protected, and
3. Viable population levels are maintained for a period of at least 20 years.

In an effort to protect and restore habitat of the Arkansas Fatmucket in the Ouachita, Caddo, and Saline River headwaters, The Nature Conservancy along with state and federal agencies decided to undertake the development and implementation of a programmatic Safe Harbor Agreement. This agreement facilitates (i.e., provides assurances and incentives) private landowner cooperation, not otherwise provided by the recovery plan, in implementing habitat conservation practices to protect and restore Arkansas Fatmucket populations and habitat. Additionally, the agreement ensures a collaborative approach to restore and conserve habitat in these watersheds, thus minimizing potential conflicting recommendations associated with recovery of the species. Implementation of the Safe Harbor Agreement is expected to begin in the summer of 2016.

Propagation efforts were initiated for the South Fork Ouachita River in 2014 and Saline River headwaters in 2016. Juveniles are being raised at Missouri State University and Kansas City Zoo facilities. No individuals have been released back to wild populations, but augmentation efforts are expected to begin in 2017 – 2018. A sustained propagation and augmentation effort will continue until resource managers determine augmentation/reintroduction is no longer necessary to ensure the long-term survival of Arkansas Fatmucket.

Previous Incidental Take Authorizations

Prior formal consultations involving Arkansas Fatmucket include one BO for section 10(a)(1)(A) permits in the Service's Southeast Region. The amount or extent of take anticipated for Arkansas Fatmucket in this BO includes no more than 5 adult or sub-adult individuals per one hundred handled during authorized recovery actions under section 10(a)(1)(A). It also exempts mortality

of glochidia and juveniles of up to 100 percent during temporary retention of gravid adults for propagation efforts.

In 2004, the Service issued a non-jeopardy BO for construction of the Saline County Road 5 bridge crossing the Saline River near Tull, Arkansas. The level of anticipated incidental take exempted included relocation of 20 Arkansas Fatmucket individuals with a maximum of two individuals killed incidental to actions required for relocation. The Service also anticipated delayed mortality associated with translocation and some individuals would not be found in the affected area. This level of take was approximated by the discovery of two Arkansas Fatmucket individuals or ten percent of the number of individuals collected and relocated, whichever was greater.

In 2013, the Service issued a non-jeopardy BO reviewing the effects of the USDA Forest Service – Ouachita National Forest (ONF) proposal regarding designation, operation, and maintenance of the Wolf Pen Gap Trail Complex (WPG). Because of the difficulty in determining a level of take based on the number of Arkansas Fatmucket that likely would be adversely affected, the Service decided that it was appropriate to quantify the level of authorized incidental take using tons of sediment per year. This value was derived from erosion of WPG trails and roads and stream bank erosion in Gap and Board Camp Creeks that would be affected by ONF's proposed action. Therefore, the level of take anticipated in this BO was 1,077 tons of sediment per year from WPG trails and roads and 968.5 tons of sediment per year from stream bank erosion in Gap and Board Camp Creeks over a five year period extending from January, 2014 – January, 2019. The Service will re-evaluate the level of incidental take anticipated beyond January 1, 2019 prior to January 1, 2019. The incidental take statement anticipated the taking of Arkansas Fatmucket only from the actions associated with the proposed action.

In 2015, the Service issued a non-jeopardy BO reviewing the effects of the proposed issuance of a Clean Water Act (CWA) Section 404 permit by the U.S. Army Corps of Engineers (Corps). The permit allowed fill to be placed in the Caddo River (Montgomery County, Arkansas) for the purpose of stream bank rehabilitation. The rehabilitation project was a cooperative effort between private landowners, the Arkansas Game and Fish Commission (AGFC), and the Service's Partners for Fish and Wildlife (Partners) program. The Service anticipated up to three Arkansas Fatmucket individuals may be affected as a result of the proposed action. This was based upon the amount of time spent surveying, the paucity of mussels within the site, the marginal habitat present, and the rarity in general of the Arkansas Fatmucket. The incidental take statement anticipated the taking of Arkansas Fatmucket only from the actions associated with the proposed activity. All Arkansas Fatmucket found within the footprint of the reach (N = 0) were translocated to suitable habitat. Because the activity was itself a conservation action (rehabilitation of an actively eroded streambank), the Service did not recommend additional conservation actions.

ENVIRONMENTAL BASELINE

This section describes the species status and trend information within the action area. It also includes State, tribal, local, and private actions already affecting the species or that will occur contemporaneously with the proposed action, including Federal actions that have completed

formal or informal consultation (50 CFR 402.02). The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species, its habitat, and ecosystem, within the action area. The environmental baseline provides the basis from which to judge the effects of the action.

For recovery permits issued under section 10(a)(1)(A) in the Service's Southeast Region, see Previous Incidental Take Authorizations section. Additionally, the Service completes numerous informal consultations on this species each year.

Status of the species within the action area

Freshwater mussel surveys were conducted by AHTD (FHWA 2016) on October 30, 2014, June 30, 2015, and July 24, 2015 to assess presence absence of species and to delineate bed density. In the 2014 survey, 46 mussels representing 16 species, including two Arkansas Fatmucket, were observed in two time-constrained searches for a total of 120 minutes. (Appendix A, Table 1). Surveys in 2015 focusing on bed delineation resulted in 247 mussels representing 26 species (25 living, 1 relict) were collected within limits of the bed (Appendix A, Table 1). In total, seven live Arkansas Fatmucket were located within the limits of the bed. In addition, the Service found two living and one dead Arkansas Fatmucket approximately 0.20 km upstream of the project site during a survey in June 2015 (C. Davidson, pers. comm. 2016).

This bed begins at the upstream side of the bridge and extends approximately 45 m (148 ft.) along the western bank ranging from 8-10 m (26-33 ft.) in width. The upper end of the bed is located in a pool averaging 1 m (3.3 ft.) deep which transitions into a riffle at the lower end. Water willow (*Justicia americana*) is found along the water's edge and the substrate is characterized by embedded gravel and sand. This 397 m² (4,273 ft²) mussel bed has an average mussel density of 0.62 mussel/m² (0.06/ft²).

The only stable extant Arkansas Fatmucket population occurs in the Saline River. With increased distance between occupied habitat, reduced abundance, and continuing or increasing threats to Arkansas Fatmucket in the Saline River headwaters, populations the Saline River population may start to decline in the next 10 – 20 years (Service 2013).

The majority of the remaining Arkansas Fatmucket populations are generally small and becoming more geographically isolated. The patchy distributional pattern of stream populations in short stream reaches makes them much more susceptible to extirpation due to the low potential for recolonization from other populations. Single catastrophic events, such as toxic chemical spills or other stochastic events, could cause the extirpation of any of these small, isolated Arkansas Fatmucket occurrences. Increasing levels of isolation make natural repopulation of any extirpated population improbable without human intervention. Population isolation also prohibits the natural interchange of genetic material between populations.

Factors affecting species environment within the action area

The Upper Saline watershed is largely composed of forest area (78.6%) with intermixed grassland (9.8%) used for cattle grazing and hay production. Pine-dominated forest increased by

24 percent with a corresponding decrease in the natural mixed woods forest matrix by 22 percent. This change is indicative of increasing timber production activities.

The U.S. Census Department estimated a 1.6% population increase of 23,346 to 23,713 from 2010 to 2014 in the vicinity immediately upstream of the project location. Population increases result in increases in development both directly and cumulatively. Increased development leads to increases in sedimentation runoff, impervious surfaces, and loss of vegetated habitat.

The project location on the Saline River is a popular recreation location for the residents of Saline and surrounding counties. Popular activities in and around the bridge include fishing, swimming, and the use of off-road-vehicles (ORV), which can often be seen driving directly through the river. The area directly downstream of the bridge is shallower and wider leading to easier ORV access than upstream. The frequent disturbance resulting from these recreational activities has left the river downstream from the bridge in a highly degraded condition.

Several new threats have been identified since listing in the upper Saline River watershed (DeClerk et al. 2006). A landscape level analysis of major land use changes within the watershed was assessed for the years between 1986 and 2004 and quantified the changes in the watershed and determined anthropogenic impacts. Results indicated that the largest change (47 percent increase) in landscape classification was the increasing urbanization of the watershed characterized by the expansion of Benton and Hot Springs Village into rural areas. Hot Spring Village, a large gated community, is located in the headwater portion of this watershed. Numerous large impoundments and increased impervious surfaces in Hot Springs Village have altered the natural flow regimes of the Middle Fork and South Fork Saline River. There was an increase in golf course coverage by 231 percent within Hot Springs Village. DeClerk et al. (2006) ranked housing and urban development as the number one threat to the upper Saline River watershed.

There are 19 impoundments located within the upper Saline River watershed. Nine new dams have been constructed in the Middle Fork Saline River watershed in conjunction with development of Hot Springs Village (the largest gated community in the world). The expansion of water withdrawals, diversions, and impoundments is suspected to be one contributing factor to increases in elevated turbidity level during storm events, soil erosion/sediment instability and hydrologic alteration. Hydrologic alterations are a large contributing factor in geomorphic instability in the four forks of the Saline River. U.S. Geological Survey gaging stations on the Middle Fork Saline River exhibited an increasing trend in the annual number of zero-flow days (1986 – 2004), a trend consistent with increased consumptive water withdrawals within the tributary watersheds (Service 2013).

Changing land uses may lead to altered hydrology and stream geomorphology characteristics and increased pollutant inputs (e.g., sedimentation, nutrients, and other contaminant from storm water runoff). Unrestricted cattle access into streams, water withdrawal for agricultural and recreational purposes (i.e., golf courses), lack of adequate riparian buffers, construction and maintenance of county roads, and non-point source pollution arising from a broad array of activities, particularly rapid urbanization around Benton and Hot Springs Village, continue to

increase and degrade suitable habitat for Arkansas Fatmucket in the upper Saline River watershed, including the action area.

Habitat Alteration – Small gravel operations are common within the range of the Arkansas Fatmucket and many streams are impacted by the removal of preferred substrate and by the resulting downstream sedimentation. The Saline River downstream of Benton has been severely impacted by gravel dredging (Harris and Gordon 1988). Additionally, channel modification is common at road crossings, and habitat for this species undoubtedly has been affected by the many road crossings along the forks of the Saline River and within its range.

Sedimentation – Excessive sediments may adversely affect riverine mussel populations requiring clean, stable streams (Ellis 1936; Brim Box and Mossa 1999). Adverse effects resulting from sediments have been noted for many components of aquatic communities. Potential sediment sources within a watershed include natural events and anthropogenic activities that disturb the land surface. Most localities occupied by Arkansas Fatmucket are currently being affected to varying degrees by sedimentation.

Sedimentation has been implicated in the decline of mussel populations nationwide, and remains a threat to mussels in the Saline River (Ellis 1936; Vannote and Minshall 1982; Dennis 1984; Brim Box and Mossa 1999; Fraley and Ahlstedt 2000; Poole and Downing 2004). Specific biological effects include reduced feeding and respiratory efficiency from clogged gills, disrupted metabolic processes, reduced growth rates, limited burrowing activity, physical smothering, and disrupted host fish attraction mechanisms (Ellis 1936; Marking and Bills 1979; Vannote and Minshall 1982; Waters 1995; Hartfield and Hartfield 1996). In addition, mussels may be indirectly affected if high turbidity levels significantly reduce the amount of light available for photosynthesis, and thus, the production of certain food items (Kanehl and Lyons 1992).

Primary effects of excess sediment levels on mussels may be sublethal, with detrimental effects not immediately apparent (Brim Box and Mossa 1999). The physical effects of sediment on mussel habitat appear to be multifold, and include changes in suspended and bed material load; bed sediment composition associated with increased sediment production and runoff in the watershed; channel changes in form, position, and degree of stability; changes in depth or width and depth ratio that affects light penetration and flow regime; actively aggrading (filling) or degrading (scouring) channels; and changes in channel position. These effects to habitat may dislodge, transport downstream, or leave mussels stranded (Vannote and Minshall 1982; Kanehl and Lyons 1992; Brim Box and Mossa 1999). For example, many Arkansas streams (e.g., Saline River) supporting mussels have become increasingly silted in over the past century (EPA 2013), reducing habitat for mussels.

Increased sedimentation and siltation may explain in part why mussel populations are experiencing recruitment failure in some streams. Interstitial spaces in the substrate provide crucial habitat (shelter and nutrient uptake) for juvenile mussel survival. When interstitial spaces are clogged, interstitial flow rates and spaces are reduced (Brim Box and Mossa 1999), and this decreases habitat for juvenile mussels. Furthermore, sediment may act as a vector for delivering contaminants, such as nutrients and pesticides, to streams, and juvenile mussels may ingest

contaminants adsorbed to silt particles during normal feeding activities. Arkansas Fatmucket reproductive strategies depend on clear water (enables fish hosts to see mussel lures) during critical reproductive periods.

Agricultural activities also are responsible, in part, for sediment affecting rivers in the United States (Waters 1995). Grazing may reduce infiltration rates, decrease filtering capacity of pollutants (thereby increasing sedimentation run-off), and trampling and eventual elimination of woody vegetation reduces bank resistance to erosion and contributes to increased water temperatures (Armour et al., 1991; Trimble and Mendel, 1995; Brim Box and Mossa, 1999; Henley et al., 2000).

Erosion from silvicultural activities accounts for six percent of national sediment pollution (Henley et al., 2000). Sedimentation effects are more the result of logging roads than from the actual harvesting of timber (Waters, 1995; Brim Box and Mossa, 1999). Annual run-off and/or peak flow volumes increase with timber harvests, particularly during the wet season (Allan 1995). This is partially due to the construction of logging roads, and vegetation removal tends to compact soils, reduce infiltration rates, and increase soil erosion. Increased flows and improper harvesting within streamside management zones may result in stream channel changes (Brim Box and Mossa, 1999) that may ultimately affect mussel beds.

Chemical Contaminants – Chemical contaminants are ubiquitous in the environment and are considered a major threat in the decline of mussel species (Richter et al. 1997; Strayer et al. 2004; Wang et al. 2007; Cope et al. 2008). Chemicals enter the environment through point and nonpoint discharges including spills, industrial and municipal effluents, and residential and agricultural runoff. These sources contribute organic compounds, heavy metals, nutrients, pesticides, and a wide variety of newly emerging contaminants such as pharmaceuticals to the aquatic environment. Arkansas Fatmucket are susceptible to chemical contaminants that degrade water and sediment quality and subsequently may result in adverse effects.

Cope et al. (2008) evaluated the pathways of exposure to environmental pollutants for all four freshwater mollusk life stages (free glochidia, encysted glochidia, juveniles, adults) and found that each life stage has both common and unique characteristics that contribute to observed differences in exposure and sensitivity. Almost nothing is known of the potential mechanisms and consequences of waterborne toxicants on sperm viability. In the female mollusk, the marsupial region of the gill is thought to be physiologically isolated from respiratory functions, and this isolation may provide some level of protection from contaminant interference with a female's ability to achieve fertilization or brood glochidia (Cope et al. 2008). A major exception to this assertion is with chemicals that act directly on the neuroendocrine pathways controlling reproduction (see discussion below). Nutritional and ionic exchange is possible between a brooding female and her glochidia, providing a route for chemicals (accumulated or waterborne) to disrupt biochemical and physiological pathways (such as maternal calcium transport for construction of the glochidial shell). Glochidia can be exposed to waterborne contaminants for up to 36 hours until encystment occurs; between 2 and 36 hours, and then from fish host tissue burdens (for example, atrazine), that last from weeks to months and could affect transformation success of glochidia into juveniles (Ingersoll et al. 2007).

Juvenile mussels typically remain burrowed beneath the sediment surface for 2 to 4 years. Residence beneath the sediment surface necessitates deposit (pedal) feeding and a reliance on interstitial water for dissolved oxygen (Watters 2007, p. 56). The relative importance of exposure of juvenile mussels to contaminants in overlying surface water, interstitial water, whole sediment, or food has not been adequately assessed. Exposure to contaminants from each of these routes varies with certain periods and environmental conditions (Cope et al. 2008).

The primary routes of exposure to contaminants for adult mussels are surface water, sediment, interstitial (pore) water, and diet; adults can be exposed when either partially or completely burrowed in the substrate (Cope et al. 2008). Adult mussels have the ability to detect toxicants in the water and close their valves to avoid exposure (Van Hassel and Farris 2007). Adult mussel toxicity and relative sensitivity (exposure and uptake of toxicants) may be reduced at high rather than at low toxicant concentrations because uptake is affected by the prolonged or periodic toxicant avoidance responses (when the avoidance behavior of keeping their valves closed can no longer be sustained for physiological reasons (respiration and ability to feed) (Cope et al. 2008). Toxicity results based on low-level exposure of adults are similar to estimates for glochidia and juveniles for some toxicants (for example, copper). The duration of any toxicant avoidance response by an adult mussel is likely to vary due to several variables, such as species, age, shell thickness and gape, properties of the toxicant, and water temperature. There is a lack of information on toxicant response(s) for Arkansas Fatmucket, but results of tests using glochidia and juveniles may be valuable for protecting adults (Cope et al. 2008).

Agriculture, timber harvest, and lawn management practices utilize nutrients and pesticides. These are two broad categories of chemical contaminants that have the potential to adversely affect mussel species. Nutrients, such as nitrogen and phosphorus, primarily occur in runoff from livestock farms, feedlots, heavily fertilized row crops and pastures (Peterjohn and Correll 1984), post timber management activities, and urban and suburban runoff, including leaking septic tanks, and residential lawns.

Studies have shown that excessive nitrogen concentrations can be lethal to the adult freshwater pearl mussel (*Margaritifera margaritifera*) and reduce the life span and size of other mussel species (Bauer 1988; Bauer 1992). Nutrient enrichment can result in an increase in primary productivity, and the associated algae respiration depletes dissolved oxygen levels. This may be particularly detrimental to juvenile mussels that inhabit the interstitial spaces in the substrate where lower dissolved oxygen concentrations are more likely than on the sediment surface where adults tend to live (Sparks and Strayer 1998).

Population Fragmentation and Isolation – Population fragmentation and isolation prohibit the natural interchange of genetic material between populations. Populations of Arkansas Fatmucket in the Saline River are small and geographically isolated, and, thus, are susceptible to genetic drift, inbreeding depression, and stochastic changes to the environment. Inbreeding depression can result in early mortality, decreased fertility, smaller body size, loss of vigor, reduced fitness, and various chromosome abnormalities (Smith 1990). Although changes in the environment may cause populations to fluctuate naturally, small and low-density populations are more likely to fluctuate below a minimum viable population size (the minimum or threshold number of individuals needed in a population to persist in a viable state for a given interval) (Shaffer 1981;

Shaffer and Samson 1985; Gilpin and Soulé 1986). Furthermore, this level of isolation makes natural repopulation of any extirpated population unlikely without human intervention. Population isolation prohibits the natural interchange of genetic material between populations, and small population size reduces the reservoir of genetic diversity within populations, which can lead to inbreeding depression (Awise and Hambrick 1996).

The likelihood is high Arkansas Fatmucket populations in the Saline River are approaching or may already be below the effective population size (EPS– the number of individuals in a population who contribute offspring to the next generation), based on restricted distribution and populations only represented by a few individuals, and achieving the EPS is necessary for a population to adapt to environmental change and maintain long-term viability. Isolated populations eventually are extirpated when population size drops below the EPS or threshold level of sustainability (Soulé 1980). Evidence of recruitment in these populations is scant, making recruitment reduction or outright failure suspect. These populations may be experiencing the bottleneck effect of not attaining the EPS. Without genetic interchange, small, isolated populations could be slowly expiring, a phenomenon termed the extinction debt (Tilman *et al.* 1994, pp. 65–66). Even given the absence of existing or new anthropogenic threats, disjunct populations may be lost as a result of current below-threshold effective population size. Additionally, evidence indicates that general habitat degradation continues to decrease habitat patch size, further contributing to the decline of these mussel populations.

EFFECTS OF THE ACTION

This section includes an analysis of the direct and indirect effects of the proposed action on the species and/or critical habitat and its interrelated and interdependent activities. While analyzing direct and indirect effects of the proposed action, the Service considered the following factors:

1. Proximity of the action – Known species locations in relation to the action area and proposed action.
2. Distribution –Where the proposed action will occur and the likely effects of the activities.
3. Timing –The likely effects in relation to sensitive periods of the species' life cycle.
4. Nature of the effects –How the effects of the action may be manifested in elements of the species' life cycle, population size or variability, or distribution, and how individual animals may be affected.
5. Duration –Whether the effects are short-term, long-term, or permanent.
6. Disturbance frequency –How the proposed action will be implemented in terms of the number of events per unit of time.
7. Disturbance intensity – The effect of the disturbance on a population or species.

8. Disturbance severity – How long we expect the adverse effects to persist and how long it would take a population to recover.

Proximity of the action: FWHA (2016) states the project is located in Saline County, Arkansas (S10 T2S R15W, S9 T2S R15W, S16 T2S R15W, S17 T2S R15W, S20 T2S R15W, S19 T2S R15W, and S24 T2S R16W – Haskell Quad) from the city limits of Benton west to the interchange at U.S. Highway 70. This 8.6 km (5.36 mi) section of I-30 is located on the border of the Ouachita Mountain and South Central Plain ecoregions characterized by moderate urbanization and mixed pine and hardwood forest (Woods et al. 2004). The project is entirely within the Upper Saline watershed (HUC 08040203), vicinity maps can be found in Appendix A.

Arkansas Fatmucket individuals were found at the upstream side of the bridge extending approximately 45 m (148 ft.) upstream along the western bank ranging from 8 – 10 m (26 – 33 ft.) in width. The upper end of the bed is located in a pool averaging 1 m (3.3 ft.) deep which transitions into a riffle at the lower end before terminating under the I-30 bridge.

Distribution: The aquatic action area consists of the river reach proposed for construction extending 30.5 m (100 ft.) upstream and 91.4 m (300 ft.) downstream of the I-30 bridge at the Saline River. Additionally, a 0.5 km (0.3 mi) area surrounding the construction limit is also being assessed to account for noise and smoke associated with project construction.

The clearing and grubbing of trees will take place on new right-of-way directly adjacent to the current I-30 corridor. Additionally, interchanges at U.S. Highway 67 and 70 and Sevier Street will be reconstructed requiring tree clearing. A total of 6.2 hectares (15.3 acres) of currently forested area is estimates to be cleared. All measures will be taken to ensure proper sediment and erosion control to prevent runoff into waterways.

Timing: The Arkansas Fatmucket is gravid from March through October (Scott 2004). The project is scheduled to be let to contractors in March 2017. Work orders are typically issued the month following the letting date. Construction is estimated to take 2.5 years, but bridge construction, according to AHTD, typically takes less time. Any juveniles or adults present within the action area will be directly affected. These effects can be minimized through relocation and avoiding relocation during the brooding period. Any portion of the life cycle could be affected by temporary increases in sedimentation or turbidity.

There are several possible mechanisms for sediment effects on mussels. We expect detrimental effects could occur during all life stages (glochidia to adult), including sensitive periods such as brooding and the temporary parasitic larval stage. Detrimental effects are expected to result in harm and/or harassment due to degradation of water quality and/or habitat that may cause mortality of glochidia, juveniles, and adults, primarily as a result of increased suspended sediment loading, sedimentation (deposited sediment), and other habitat related effects.

Exposure of host fish to suspended sediment reduces attachment and metamorphosis success of glochidia (Beussink 2007). The increased radius of the gill tips, where a large proportion of glochidia normally attach, caused by fusion, clubbing, and loss of lamellae may provide a less suitable geometry for glochidia to grasp, thus reducing attachment success. Fish coughing

induced by sediment may dislodge loosely attached glochidia before encapsulation. In addition to reduced attachment success, the proportion of glochidia successfully transformed is reduced following host exposure to suspended sediment. A likely mechanism involves the relationship between the keratocyte migration and encapsulation. Excessive sediments also can expose juvenile mussels to entrainment or predation and be detrimental to survival of juvenile mussels (Hartfield and Hartfield 1996). Detrimental effects of suspended sediment on mussel reproduction are most likely if high sediment loads coincide with mussel reproductive events.

Nature of the effects: It is likely the proposed action could have a variety of effects on Arkansas Fatmucket individuals and populations. Specific biological effects associated with sediment include, but may not be limited to:

1. Reduced feeding and respiratory efficiency from clogged gills.
2. Disrupted metabolic processes.
3. Reduced growth rates.
4. Limited burrowing activity.
5. Physical smothering.
6. Vector for delivering contaminants such as nutrients and pesticides.
7. Decrease food production due to reduced light availability for photosynthesis.
8. Affects sight-feeding fish that serve as host for mussels to complete their life cycle.
9. Gill trauma and the variety of associated physiological effects (e.g., hyperplasia and hypertrophy of gill cells and tissue, inflammatory responses including mucus secretion, increased hematocrit, erosion, branchial lesions and fusion of gill surfaces, and susceptibility to infection).
10. Reduced attachment and metamorphosis success of glochidia.
11. Detrimental effects not immediately apparent.

Specific physical effects associated with sediment include, but may not be limited to:

1. Altered suspended and bed material loads.
2. Clogged interstitial habitats.
3. Reduced interstitial flow rates and dissolved oxygen levels.
4. Changed channels in form, position, and degree of stability.

5. Altered depth or width/depth ratio that affects light penetration and flow regime.
6. Reduced channel capacity exacerbating downstream bank erosion.
7. Aggraded (filling) or degraded (scouring) channels.
8. Changed channel position that dewater habitats formerly inhabited by mussels/fish.

It is important to note that most of these negative effects will be temporary in nature and that the proposed stabilization of the actively eroding streambank will beneficially reduce many of these same issues that are currently occurring year round.

Duration: It has been estimated that this project will take 2.5 years to complete. All disturbed areas will be permanently seeded following construction activities. All areas must meet coverage requirements outlined in the National Pollutant Discharge Elimination System permit.

Disturbance frequency: The proposed activity will result in multiple short-term disturbance events associated with each phase of construction. Once the project area has been stabilized during each phase there should be no further disturbance episodes related to this project (outside of natural disturbances associated with flooding).

Three stages of work roads will be required for the widening of the Saline River Bridge. Each stage will require work roads within the channel of the Saline River. The project is designed to replace the bridge with a modern structure and should decrease routine maintenance activities to the infrastructure. Maintenance activities such as mowing, herbicide application, etc. are not expected to change.

Disturbance intensity: Sedimentation from runoff and bank de-stabilization will occur, but should be minimal with application of proposed erosion controls and BMPs in accordance with the AHTD Construction Stormwater Program. This program has developed various BMPs, guidelines, and specifications for minimizing storm water effects. These documents include the Arkansas 2003 Standard Specification for Highway Construction (Specifications), the Stormwater Pollution and Prevention Plan (SWPPP), and the 2014 Statewide Storm Water Management Program (SWMP). The proposed work involves widening within the existing right-of-way with minimal new right-of-way acquisition for the majority of the project. Improved interchanges will require new right-of-way for construction. Within new right-of-way, trees will be mechanically cleared, piled, and burned on site. After vegetation is removed, heavy machinery will excavate and dispose of material at an approved waste area. Clearing, grubbing, or any other disturbance of vegetation on stream banks shall be limited to the minimum necessary for the completion of the project.

Some direct effects within the footprint of the project will be permanent such as the placement of rip-rap for stabilization and pier construction and replacement. The intensity will be lessened outside the footprint. There will be direct effects from temporary stages of work associated with work roads, geomorphic alteration, and bank destabilization. Over the long-term the site will be

stabilized, temporary fills will be removed and banks will be re-vegetated and stabilized so that there should be no lasting sedimentation in the immediate area.

Stage 1 will consist of two work roads in the center of the existing bridge. One work road will come from the east and one from the west for a total of 7,597.4 m³ (9,937 yd³) below the plane of ordinary high water. All materials from the first stage shall be removed prior to second stage activities.

Stage two work roads will be constructed mainly at the downstream end of the east bound bridge. There will be two straight main roads extending from the east and west with 13 crossing roads (five on the west road and eight on the east). Each road will be located approximately 7 m (23.0 ft) downstream from the eastern bridge. A distance of 30 m (98.4 ft) will be maintained between the two work roads to accommodate low flow conditions similar to stage one. A total of 17,507.5 m³ (22,899 yd³) will be placed below ordinary high water mark. All material from the second stage work roads will be removed prior to the construction of this stage.

The final stage of work roads will be constructed at the upstream end of the bridge project associated with the west bound structure. Two main work roads will be constructed during this phase. The eastern main work road will be parallel to the west bound travel lane, approximately 7 m upstream. Eight work roads will be constructed to allow for access under the bridge. A portion of the work roads slope will be placed in the channel beyond the water's edge. The main western work road also will parallel the western bound bridge and have four associated roads to allow for access under the bridge. In total, 14,269.7 m³ (18,664 yd³) will be placed during this final stage which will be removed before project completion.

Temporary culverts to sufficiently maintain low stream flows and assist the passage of aquatic life will also be provided. Following bridge construction a layer of rip-rap will be placed between the bridge ends and the bridge piers located within the channel to prevent scour.

Disturbance severity: Temporary effects to water quality are common during highway construction activities. These effects can be lessened with the proper implementation and maintenance of BMPs for erosion control. Efforts (BMPs) will be implemented to reduce and limit adverse effects to water quality.

The habitat present at the site currently is marginal and supports few listed mussels. The negative effects of the proposed action will be limited in scope and mostly temporary and are not expected to affect Arkansas Fatmucket at the population level. It is possible that a few individuals may be affected. However, the area should be stabilized within a short period following implementation of erosion controls and application of the BMPs.

Analyses for effects of the action

Beneficial Effects

Beneficial effects are those effects of an action that are wholly positive, without any adverse effect, on a listed species or designated critical habitat. The Service has determined that there are no wholly beneficial effects associated with the proposed action.

Direct effects

Direct effects are the direct or immediate effects of the agency action on the species or its habitat. Direct effects include the effects of any interrelated or interdependent actions. Interrelated actions are part of the proposed action and depend on the proposed action for justification. Interdependent actions are those actions that have no independent utility apart from the action under consultation. Future federal actions that are not a direct effect of the action under consideration are not considered in this BO. The proposed action occurs alongside and in the Saline River. The stream reach is occupied by the Arkansas Fatmucket and AHTD surveys detected 7 individuals within the action area.

The proposed action will directly affect Arkansas Fatmucket, their host fish, and their habitats in the Saline River. Direct effects of the proposed action to Arkansas Fatmucket include harassment, harm, and potential mortality from bridge construction (e.g., bridge pilings, placement of temporary work roads and culverts, the demolition/removal of the existing structures and placement of rip rap within previously occupied habitats for work pads and scour prevention). These activities could result in mortality or injury of any mussels that are not transferred out of the action area during the translocation effort.

Direct effects of mussel translocation include harm, harassment and possible mortality due to the stress of being handled, processed, and relocated. These effects can result in premature release of sperm or aborted glochidia negatively affecting reproductive success. A trained malacologist that holds an active Section 10(a)(1)(A) permit from the Service will accomplish the relocation work, which will minimize some of these effects.

During placement of work roads, rip rap could accidentally fall within the confines of the bed directly smashing mussels. Additionally, heavy machinery could be driven through the water during the placement of work roads causing direct mortality of mussels. While direct mortality due to smashing could result from either the construction or removal of work roads, placement of rip rap in the channel will likely alter the flow regime causing either sediment accumulation or scouring change. During all phases of this estimated 2.5 year project, impairments to water quality, and altered flow will affect the mussel community located within the delineated bed.

The project is designed to replace the bridge with a modern structure and should decrease routine maintenance activities to the infrastructure. Maintenance activities such as mowing, herbicide application, etc. are not expected to change.

Indirect effects

Indirect effects are caused by or result from the proposed action, are later in time and reasonably certain to occur. Any long-term indirect effects should be minor and beneficial as a result of reductions in sedimentation associated with the actively eroding streambank. Increases in sedimentation and turbidity should be restricted to areas near the construction site and will be temporary in nature. However, these temporary changes could result the following effects.

Habitat Degradation – Adverse effects may degrade the quality of habitat in the action area. Suspended and bed sediment loading and sedimentation may lead to a loss in the availability and quality of habitat in the Saline River. Arkansas Fatmucket may be indirectly affected by temporary habitat degradation and/or loss through alteration to stream geomorphology characteristics, and may be indirectly affected by this until conditions stabilize and become suitable for recolonization.

Three piers will be placed within the wetted width of the channel while six will be removed. The change in placement of these piers will alter hydrologic and geomorphologic characteristics within the channel. Additionally, work roads that are constructed and removed will likely leave a different flow regime after construction. Placement of rip rap to reduce scour and stabilize banks may reduce habitat availability. These structures and stabilizing features will likely alter existing flow patterns that could interfere with species of freshwater organisms including mussels.

Water and Sediment Quality Degradation – Petroleum products from improperly maintained construction equipment and storage areas can make their way into receiving streams if preventative measures are not properly followed. Staging areas will be sited to minimize the potential for such contamination. Special provisions will be included in the contract to limit quantities and locations of storage tanks.

Temporary effects to water quality from increased siltation and turbidity increases due to erosion, bed destabilization, and hydrologic alteration are common during highway construction activities. These effects can be lessened with the proper implementation of BMPs for erosion control. All efforts to reduce and limit adverse effects to water quality will be implemented.

The clearing and grubbing of trees will take place on new right-of-way directly adjacent to the current I-30 corridor. Additionally, interchanges at U.S. Highways 67 and 70 and Sevier Street will be reconstructed requiring tree clearing. A total of 6.2 hectares (15.3 acres) of currently forested area is estimates to be cleared. All measures will be taken to ensure proper sediment and erosion control to prevent run off into waterways.

Food Availability, Reproduction, and Metabolic Processes – Arkansas Fatmucket may be indirectly affected by limitation or reduction in available food, harassment during brooding or to infected host fish, or disruption of metabolic processes.

Construction related activities have the potential to disrupt the reproductive cycle of the mussel in a variety of ways. Vibrations, which are common during construction, have stimulated mussels to artificially release glochidia in lab settings. Also temporary effects to water quality

may affect host fish (largemouth and spotted bass) by causing avoidance of the area, limiting visibility of the mussel's lure, or decreasing available food forage. Both vibrations and sedimentation are common during construction activities. Any disturbances that may reduce the number of fish within the action area have the potential to reduce mussel/host interactions.

Land Use Effects – This area has been utilized for recreation and will likely continue to be used in the future. Changes to channel depth may increase off road vehicle use of currently unused areas. Highway infrastructure improvements have been associated with increases in residential, commercial, and industrial development. Those types of development would likely lead to increased amounts of non-point source pollution which impair water quality.

Global Climate Change – Our analyses under the ESA include consideration of ongoing and projected changes in climate. The term “climate change” thus refers to a change in the mean or variability of one or more measures of climate (e.g., temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007). Various types of changes in climate can have direct or indirect effects on species. These effects may be positive, neutral, or negative and they may change over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (e.g., habitat fragmentation) (IPCC 2007). In our analyses, we use our expert judgment to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change.

Mussels can be placed into thermal guilds, thermally sensitive and thermally tolerant species, according to their response to warm summer water temperatures greater than 35 °C (95 °F) (Spooner and Vaughn 2008). Although we do not have physiological data on Arkansas Fatmucket, a closely related species, *Lampsilis cardium*, is thermally sensitive (Spooner and Vaughn 2008). Data for the Kiamichi River in Oklahoma suggests that, over a 17 year period as water and air temperatures have increased, mussel beds once dominated by thermally sensitive species are now dominated by thermally tolerant species (Galbraith et al. 2010; Spooner and Vaughn 2008). As temperature increases due to climate change, these mussels may experience population declines as warmer rivers are more suitable for thermally tolerant species.

The proposed action is likely to result (directly and/or indirectly) in the emission of greenhouse gases. While it is likely the observed increase in global average temperatures is due to the observed increase in human-induced greenhouse gas concentrations, the best scientific data available today does not allow us to draw a causal connection between specific greenhouse gas emissions and effects posed to the Arkansas Fatmucket, nor is there sufficient data to establish that such effects are reasonably certain to occur.

Summary of Indirect Effects – The life history traits and habitat requirements of the Arkansas Fatmucket, and other freshwater mussels in general, make them extremely susceptible to environmental change. Unlike other aquatic organisms (e.g., aquatic insects and fish), mussels have limited refugia from stream disturbances (e.g., sedimentation). The synergistic (interaction of two or more components) effects of threats are often complex in aquatic environments, making it difficult to predict changes in mussel and fish host(s) distribution, abundance, and habitat availability that may result from these effects. While these stressors may act in isolation,

it is more probable that many stressors are acting simultaneously (or in combination) (Galbraith *et al.* 2010).

CUMULATIVE EFFECTS

Cumulative effects include the combined effects of any non-Federal action (e.g., future State, local, or private actions) reasonably certain to occur within the action area covered in this BO. Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation under section 7 of the Act. In particular, many of the large-scale activities that could occur in the action area, such as highway development, storm water permits, U.S. Army Corps of Engineers' 404 permits, would have a federal nexus that require an independent consultation under section 7 of the Act.

Numerous land use activities that affect the Arkansas Fatmucket and that likely occur within the action area include: timber harvest, recreational use, and development associated with road, residential, industrial and agricultural development and related activities. These private actions are likely to occur within the action area, but the Service is unaware of any quantifiable information relating to the extent of private timber harvests and recreational use within the action area. Similarly, the Service does not have any information on the amount of residential, industrial, or agricultural development that has or will occur within the action area. The Service is unable to make any determinations or conduct any meaningful analysis of how these effects with no quantifiable information may or may not adversely and/or beneficially affect this species. We can say it is possible these activities, when they occur, may have cumulative effects on this species and its habitats in certain situations. In stating this, however, we can only speculate as to the extent or severity of those effects, if any.

Cumulative pressure on existing populations of Arkansas Fatmucket can be caused by silviculture activities and other forest conversion activities (e.g., urbanization of the watershed) related to agriculture. Legal and illegal gravel mining activities will likely continue within the watershed and may even increase with further urban development and need for resources. Deleterious influences from improperly maintained poultry, swine, and cattle operations may also affect water quality, riparian, and aquatic habitats in the Saline River.

CONCLUSION

After reviewing the current status of Arkansas Fatmucket, the environmental baseline for the action area, effects of the proposed action, and cumulative effects of the proposed action, it is the Service's BO that the proposed action is not likely to jeopardize the continued existence of Arkansas Fatmucket. No critical habitat has been designated for Arkansas Fatmucket.

Because of our analysis, we do not believe the proposed action "would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of Arkansas Fatmucket by reducing the reproduction, numbers, or distribution of Arkansas Fatmucket (50 CFR 402)." In fact, we believe that neither survival nor recovery will be reduced appreciably for reasons summarized later in this section.

For the proposed action to “reduce appreciably” numbers of Arkansas Fatmucket, the proposed action would have to impede or stop the process by which this species’s ecosystem is restored, and/or threats to this species is removed, so that self-sustaining and self-regulating populations can be supported as persistent members of native biotic communities (Service and NMFS 1998, pages 4-35). We do not believe the proposed action impedes or stops the recovery process for the Arkansas Fatmucket because:

1. We are reasonably certain the proposed action will result in incidental take of some individuals but the proposed action is not a significant threat to the species as a whole and, therefore, does not rise to the level of jeopardy.
2. No component of the proposed action is expected to result in harm, harassment, or mortality at a level that would appreciably reduce the reproduction, numbers, or distribution of Arkansas Fatmucket.
3. The adverse effects to Arkansas Fatmucket associated with the proposed action will have minor effects on this species. Additionally, as a result of the proposed action, these adverse effects will be minimized through Reasonable and Prudent Measures (RPMs) and Terms and Conditions that implement those RPMs.
4. The primary threats to the Arkansas Fatmucket recovery are destruction and alteration of habitat at inhabited sites and at the watershed level (holistic effects on aquatic ecosystems). The proposed action directly affects only a very small number of individuals at the inhabited mussel bed immediately adjacent to the site. Furthermore, we are reasonably certain the watershed will not be degraded to the point at which it cannot sustain the species by this action directly, indirectly, or as a result of associated cumulative actions.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which included, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out of an otherwise lawful activity. Under terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the FHWA/AHTD so they become binding conditions of any grant, contract, or permit issued to an

applicant, contractor, or permittee, as proper, for the exemption in section 7(o)(2) to apply. The Service has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the FHWA/AHTD (1) fails to assume and implement the terms and conditions or (2) fails to require contractors or other parties conducting work on behalf of the FHWA/AHTD to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms added to the permit, contract, or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the effect of incidental take, the FHWA/AHTD must monitor and report the progress of the action and its effects to the Service as specified in the Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE ANTICIPATED

Take will likely occur to mussels in the action area when the bridge replacement work begins, as mussels in the action area that cannot be located during translocation efforts may not survive. It is possible that these mussels could be harmed, harassed or killed as a result of increased sedimentation and turbidity, dislodgement, or crushing from bridge construction activities. We do not anticipate complete survival of translocated Arkansas Fatmucket, as translocation is highly stressful to mussels. The Service anticipates no more than 12 Arkansas Fatmucket will be taken incidental to actions required during construction and/or relocation of these mussels. This level of take is approximated by densities of Arkansas Fatmucket in beds located immediately upstream of the project site. In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the Arkansas Fatmucket. Therefore, the level of take anticipated in the BO is 12 individuals. The incidental take statement anticipates the taking of Arkansas Fatmucket only from the actions associated with the proposed activity.

In order to be exempt from the prohibitions of section 9 of the Act, the FHWA/AHTD must ensure that permittees implement the action as proposed. If the FHWA/AHTD wishes to modify the action including conservation measures, we suggest the FHWA/AHTD contact the Service for further recommendations and/or for reinitiation of this consultation.

EFFECT OF THE TAKE

In this BO, the Service determined this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize effects of incidental take of Arkansas Fatmucket:

1. FHWA/AHTD will implement the proposed action as described above in this BO.
2. FHWA/AHTD will relocate all Arkansas Fatmucket found within the action area.
3. FHWA/AHTD will provide funds to support two years of Arkansas Fatmucket propagation in the headwaters of the Saline River.

4. FHWA/AHTD will ensure erosion control BMPs are properly installed and maintained to minimize sediment effects.
5. FHWA/AHTD will install and maintain stable river crossings and approaches to minimize sediment effects.
6. FHWA/AHTD will stabilize stream banks within and immediately adjacent to I-30 right-of-way (within action area) to minimize sediment and channel geomorphology effects.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the FHWA/AHTD must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting/monitoring requirements. These terms and conditions are non-discretionary.

This Term and Condition is associated with Reasonable and Prudent Measure 1.

1. FHWA/AHTD will fully implement the proposed action and in accordance with the terms and conditions that implement RPMs 2 – 6.

These Terms and Conditions are associated with Reasonable and Prudent Measure 2.

1. A qualified malacologist acceptable to the Service will oversee mussel relocation activities.
2. All Arkansas Fatmucket individuals encountered within the action area will be tagged and relocated to a Service and AGFC designated site between the Lyle Park and I-30 boat accesses.
3. Arkansas Fatmucket will not be relocated during brooding periods.
4. Mussels will be kept moist and cool during transport. Mussels will be transported in containers of aerated, river water provided water temperature and quality can be adequately monitored and controlled. Container water temperatures must be within 5° F of the point of capture.
5. Once Arkansas Fatmucket individuals are removed from the river, transportation to and relocation at a suitable site shall occur within 24 hours.
6. All dead or moribund Arkansas Fatmucket that contain soft tissue will be preserved according to standard museum practices and in a manner that preserves genetic material (not frozen or 70% alcohol). Any losses will be reported within 72 hours to Lindsey Lewis at the U.S. Fish and Wildlife Service Office, 110 South Amity Road, Conway,

Arkansas, 72032, (501) 513-4481.

These Terms and Conditions are associated with Reasonable and Prudent Measure 3.

1. FHWA/AHTD will provide two years of funding to a Service approved propagation facility to support Arkansas Fatmucket propagation efforts in the Saline River headwaters.
2. FHWA/AHTD will provide funds to a Service approved propagation facility prior to termination of the AGFC's existing contract for Arkansas Fatmucket propagation in the Saline River headwaters.

These Terms and Conditions are associated with Reasonable and Prudent Measure 4.

1. FHWA/AHTD will ensure strict adherence and enforcement of erosion control BMPs during construction and until bare erodible soils are 95 percent revegetated. BMPs will be implemented and maintained in accordance with AHTD's Specifications, SWPPP and/or SWMP unless otherwise noted below.
2. FHWA/AHTD will not implement new construction activities if the soil disturbance cannot be stabilized (i.e., installation of temporary and/or permanent BMPs) before rainfall is likely to occur.
3. FHWA/AHTD will install temporary BMPs during project delays or stops to minimize sediment delivery to the Saline River in accordance with the . AHTD's Specifications, SWPPP and/or SWMP.

This Term and Condition is associated with Reasonable and Prudent Measure 5.

1. FHWA/AHTD will strive for zero sediment discharge during installation of stream crossing structures in accordance with the AHTD's Specifications, SWPPP and/or SWMP unless otherwise noted below.

This Term and Condition is associated with Reasonable and Prudent Measure 6.

1. FHWA/AHTD will strive to stabilize stream banks within and immediately adjacent to the I-30 right-of-way (within action area) to minimize sediment and channel geomorphology in accordance with the AHTD's Specifications, SWPPP and SWMP unless otherwise noted below.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the effect of incidental take that might otherwise result from the proposed action. The Service believes that no more than 12 Arkansas Fatmucket will be incidentally taken. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring re-initiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of

the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to use their authorities to further the purpose of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse impacts of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service encourages FHWA/AHTD to develop a programmatic section 7(a)(1) mussel conservation plan for future highway construction and maintenance activities.

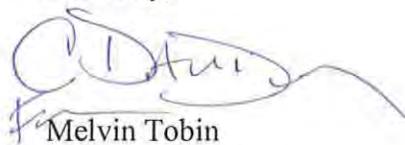
REINITIATION NOTICE

This concludes formal consultation regarding the FHWA/AHTD proposed action and its effects on the Arkansas Fatmucket. As provided in 50 CFR Sec 402.16, reinitiation of formal consultation is required where discretionary FWHA/AHTD involvement or control over the action has been retained (or is authorized by law) and if:

1. The amount or extent of taking specified in the incidental take statement is exceeded;
2. New information reveals effects of FHWA's action that may affect listed species or critical habitat in a manner or to an extent not previously considered ;
3. FHWA's action is subsequently modified in a manner that was not considered in the BO ;
or
4. A new species is listed or critical habitat is designated that may be affected by the action.
5. Should the incidental take level be reached, project work will cease immediately pending reinitiation.

The Service appreciates this opportunity to work with the FHWA and the AHTD in fulfilling our mutual responsibilities under the ESA. Please contact Lindsey Lewis of this office at 501-513-4489 or Lindsey_Lewis@fws.gov, if you have any questions or require additional information.

Sincerely,



Melvin Tobin
Field Supervisor

cc: Randal Looney, Federal Highway Administration
Johnny Mclean, United States Army Corps of Engineers
Mark Hathcote, Arkansas Department of Environmental Quality
Kendall Moles, Arkansas Game and Fish Commission
Jennifer Sheehan, Arkansas Game and Fish Commission
Cindy Osborne, Arkansas Natural Heritage Commission
John Turner, Arkansas Natural Resources Conservation Commission
Wanda Boyd, United States Environmental Protection Agency

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ARDOT ENVIRONMENTAL IMPACTS ASSESSMENT FORM

ARDOT Job Number CA0601 FAP Number ACNHPP-030-2(267)111
 Job Title Hwy. 70 – Sevier St. (Widening) (I-30)

Environmental Impacts	None	Minor	Significant	Comments
Air Quality	X			
Construction Impacts		X		
Cultural Resources	X			Cemetery identified as constraint area
Economic	X			
Endangered Species		X		Formal consultation for potential impacts to Arkansas fatmuckets, rabbitsfoot, and Northern Long Eared Bats completed
Energy Resources	X			
Environmental Justice/Title VI	X			
Fish and Wildlife	X			
Floodplains	X			
Forest Service Property	X			
Hazardous Materials/Landfills	X			
Land Use Impacts	X			
Migratory Birds		X		Special Provisions for Migratory Birds
Navigation/Coast Guard	X			
Noise Levels	X			
Prime Farmland	X			
Protected Waters		X		Temporary impacts during construction to Saline River (Ecologically Sensitive Waterbody and Extraordinary Resource Water)
Public Recreation Lands		X		Loss of outbuildings at the State Fairground
Public Water Supply/WHPA	X			
Relocates		X		
Section 4(f)/6(f)	X			
Social	X			
Underground Storage Tanks	X			
Visual Impacts	X			
Stream Impacts		X		1,001' of impacts (original) plus an additional loss of 120' due to stream relocation (reassessment)
Water Quality	X			
Wetlands		X		0.26 acres of permanent impacts
Wildlife Refuges	X			

Section 401 Water Quality Certification Required? YES
 Short-term Activity Authorization Required? YES
 Section 404 Permit Required? YES Type Nationwide 23

Remarks: _____
 Signature of Evaluator *Da da* Date 7-6-18

Date Submitted to Environmental Division: _____

BRIDGE INFORMATION – FINAL

Job Number: CA0601 FAP Number: 9991 County: Saline
Job Name: I-30 Widening Hwy. 70 – Sevier St. (Widening)(S)
Design Engineer: Bridgefarmer & Assoc. Environmental Staff: Kimley Horn & Assoc.

A. Description of Existing Bridge:

1. Bridge Number: B3251 over: Hwy. 70 Ramps
2. Location: Rte.: 30 Section: 22 Log Mile: 110.78
3. Length: 422 ft Br. Rdwy. Width: 40 ft Deck Width (Out-to-Out): 42.8 ft
4. Type Construction: Composite W-Beam Spans, Concrete Columns on spread footings
5. Deficiencies: _____
6. Qualification Code (SD or FO): ND Sufficiency Rating: 81.3

B. Proposed Improvements:

1. Length: 416.3 ft Br. Rdwy. Width: 52 ft Deck Width (Out-to-Out): 55.2 ft
2. Travel Lanes: 3 Lanes @ 12' ea.
3. Shoulder Width: Inside: 6', Outside: 10'
4. Sidewalks? No Location: N/A Width: N/A ft

C. Construction Information:

1. Location relative to existing bridge: Southeast of existing bridge
2. Superstructure Type: Continuous Composite Plate Girder Unit
3. Span Lengths: 120'-120'-77'-97'
4. Substructure Type: Concrete Columns on Drilled Shafts
5. Ordinary High Water Elev. (OHW): N/A No. of Bents inside OHW Contours: N/A
6. Concrete Vol. below OHW: N/A yd³ Vol. Bent Excavation: N/A yd³ Vol. Backfill: N/A yd³
7. Is Channel Excavation Required? No Surface Area: N/A ft² Volume: N/A yd³
8. Is Fill below OHW Req'd.? No Surface Area: N/A ft² Volume: N/A yd³
9. Is Riprap required? Yes Volume: 211 yd³

D. Work Road Information:

1. Is Work Road(s) required? No Location: N/A Top Width: N/A ft
2. Is Fill below OHW required? N/A Surface Area: N/A ft² Volume N/A yd³
3. Are Pipes required to meet Backwater Criteria? N/A Waterway Opening: N/A ft²

E. Detour Information:

1. Is a detour bridge required? No Location in relation to Existing Br.: N/A
2. Length: N/A ft Br. Rdwy. Width: N/A ft Deck Elevation: N/A
3. Volume of Fill below OHW: N/A yd³ Surface Area: N/A ft²

F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG, Railroad):
Has Consultant coordinated with any outside agencies? _____

Agency	Person Contacted	Date

Date Submitted to Environmental Division: _____

BRIDGE INFORMATION – FINAL

Job Number: CA0601 FAP Number: 9991 County: Saline

Job Name: Hwy. 70 – Sevier St. (Widening)(S)

Design Engineer: Bridgefarmer & Assoc. Environmental Staff: Kimley Horn & Assoc.

A. Description of Existing Bridge:

1. Bridge Number: A3251 over: Hwy. 70 Ramps
2. Location: Rte.: 30 Section: 22 Log Mile: 110.78
3. Length: 422 ft Br. Rdwy. Width: 40 ft Deck Width (Out-to-Out): 42.8 ft
4. Type Construction: Composite W-Beam Spans, Concrete Columns on spread footings
5. Deficiencies: _____
6. Qualification Code (SD or FO): ND Sufficiency Rating: 81.3

B. Proposed Improvements:

1. Length: 416 ft Br. Rdwy. Width: 40 ft Deck Width (Out-to-Out): 55.2 ft
2. Travel Lanes: 2 Lanes @ 12' ea.
3. Shoulder Width: Inside: 6', Outside: 10'
4. Sidewalks? No Location: N/A Width: N/A ft

C. Construction Information:

1. Location relative to existing bridge: Southeast of existing bridge
2. Superstructure Type: Continuous Composite Plate Girder Unit
3. Span Lengths: 120'-120'-77'-97'
4. Substructure Type: Concrete Columns on Drilled Shafts
5. Ordinary High Water Elev. (OHW): N/A No. of Bents inside OHW Contours: N/A
6. Concrete Vol. below OHW: N/A yd³ Vol. Bent Excavation: N/A yd³ Vol. Backfill: N/A yd³
7. Is Channel Excavation Required? No Surface Area: N/A ft² Volume: N/A yd³
8. Is Fill below OHW Req'd.? No Surface Area: N/A ft² Volume: N/A yd³
9. Is Riprap required? Yes Volume: 187 yd³

D. Work Road Information:

1. Is Work Road(s) required? No Location: N/A Top Width: N/A ft
2. Is Fill below OHW required? N/A Surface Area: N/A ft² Volume N/A yd³
3. Are Pipes required to meet Backwater Criteria? N/A Waterway Opening: N/A ft²

E. Detour Information:

1. Is a detour bridge required? No Location in relation to Existing Br.: N/A
2. Length: N/A ft Br. Rdwy. Width: N/A ft Deck Elevation: N/A
3. Volume of Fill below OHW: N/A yd³ Surface Area: N/A ft²

F. Coordination with Outside Agencies (e.g., FHWA, City, County, C of E, USCG, Railroad):
Has Consultant coordinated with any outside agencies? _____

Agency	Person Contacted	Date



DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867
www.swl.usace.army.mil

August 30, 2018

Regulatory Division

NATIONWIDE PERMIT NO. MVK 2017-00180

Mr. John Fleming
Division Head, Environmental Division
Arkansas Department of Transportation
PO Box 2261
Little Rock, Arkansas 72203-2261

Dear Mr. Fleming:

Please refer to your recent request concerning Department of the Army permit requirements pursuant to Section 404 of the Clean Water Act. You requested authorization for the placement of dredged and fill material in waters of the United States associated with widening 5.3 miles of Interstate 30 from U.S. Highway 70 to Sevier Street in Benton. The existing roadway consists of four 12-foot-wide travel lanes. The new roadway will consist of six 12-foot-wide travel lanes with wider shoulders. The interchanges at Highway 70, Highway 67/229 and Sevier Street will be modified. The project will replace seven bridges, construct one new bridge, extend two culverts and construct two new culverts. The project will cross ten streams. Named streams include the Saline River, Trace Creek, Dobbs Creek and McNeil Creek. The Saline River is designated as an Extraordinary Resource Water and an Ecologically Sensitive Water. The Saline River and its floodplain will be bridged and the construction impacts will only be temporary. An individual Section 401 water quality certification (WQC) has been obtained from the Arkansas Department of Environmental Quality. Several specimens of the Federally endangered Arkansas fatmucket (*Lampsilis powellii*) that were located near the Saline River Bridge have been relocated. The project will relocate approximately 353 linear feet of Trace Creek at the Highway 70 Interchange and approximately 350 linear feet of an unnamed tributary at the Highway 67/229 Interchange. Impacts to the remaining streams will be less than 300 linear feet and 0.1 acres. Approximately 0.26 acres of wetlands will be adversely impacted. Approximately 19.5 acres of additional right-of-way will be required for the project. Two businesses will be relocated. Crouch Cemetery was identified as historically significant and will be avoided. The project was approved as a Tier 3 Categorical Exclusion by the Federal Highway Administration on June 15, 2016. The project begins at the U.S. Highway 70 Interchange and ends at Sevier Street in Benton, in section 24, T. 2 S., R. 16 W., and in sections 9, 10, 16, 17, 19 and 20, T. 2 S., R. 15 W., Saline County, Arkansas. A vicinity map, project location maps, stream and wetland impacts table, and proposed structures table are enclosed.

The proposed activities are authorized by Department of the Army Nationwide Permit (NWP) No. 23 (copy enclosed), provided that the following **Special Conditions** and General Conditions therein are met. For your convenience, we have highlighted the General Conditions of the NWP that are the most pertinent to your project. You should become familiar with the conditions and maintain a copy of the permit at the worksite for ready reference. If changes are proposed in the design or location of the project, you should submit revised plans to this office for approval before construction of the change begins.

Special Conditions:

- 1. ArDOT agrees to mitigate for the adverse impacts to 0.26 acres of wetlands with 2.9 wetland credits at their AHTD Upper Saline River Mitigation Bank. ArDOT will provide documentation of the mitigation bank transaction to the U.S. Army Corps of Engineers Little Rock District Transportation Program Manager.**
- 2. ArDOT agrees to mitigate for the adverse impacts to 703 linear feet of stream with 2,672.9 stream credits at their AHTD Upper Saline River Mitigation Bank. ArDOT will provide documentation of the mitigation bank transaction to the U.S. Army Corps of Engineers Little Rock District Transportation Program Manager.**

Please pay particular attention to General Condition No. 12 which stipulates that appropriate erosion and siltation controls be used during construction and all exposed soil be permanently stabilized. Erosion control measures must be implemented before, during and after construction.

You must also comply with the conditions of the Section 401 WQC. We have enclosed a copy of the Section 401 WQC conditions, which are conditions of your permit. If you have any questions concerning compliance with the conditions of the 401 certification, you should contact Ms. Melanie Treat or Ms. Millie Remmer at the Arkansas Department of Environmental Quality, Water Division, 5301 Northshore Drive, North Little Rock, Arkansas 72118, telephone (501) 682-0645.

Also, in order to fully comply with the conditions of the NWP, you must submit the enclosed compliance certification within 30 days of completion of the project. This is required pursuant to General Condition No. 30 of the permit.

The NWP determination will be valid until March 18, 2022. If NWP No. 23 is modified, suspended, or revoked during this period, your project may not be authorized unless you have begun or are under contract to begin the project. If work has started or the work is under contract, you would then have twelve (12) months to complete the work.

Your cooperation in the Regulatory Program is appreciated. If you have any additional questions about this permit or any of its provisions, please contact Mr. Johnny McLean at (501)

324-5295 and refer to Permit No. **MVK 2017-00180, Interstate 30 widening from the U.S. Highway 70 Interchange to Sevier Street in Benton (AHTD Project No. CA0601).**

Sincerely,



Sarah Chitwood
Chief, Regulatory Evaluation Branch

Enclosures

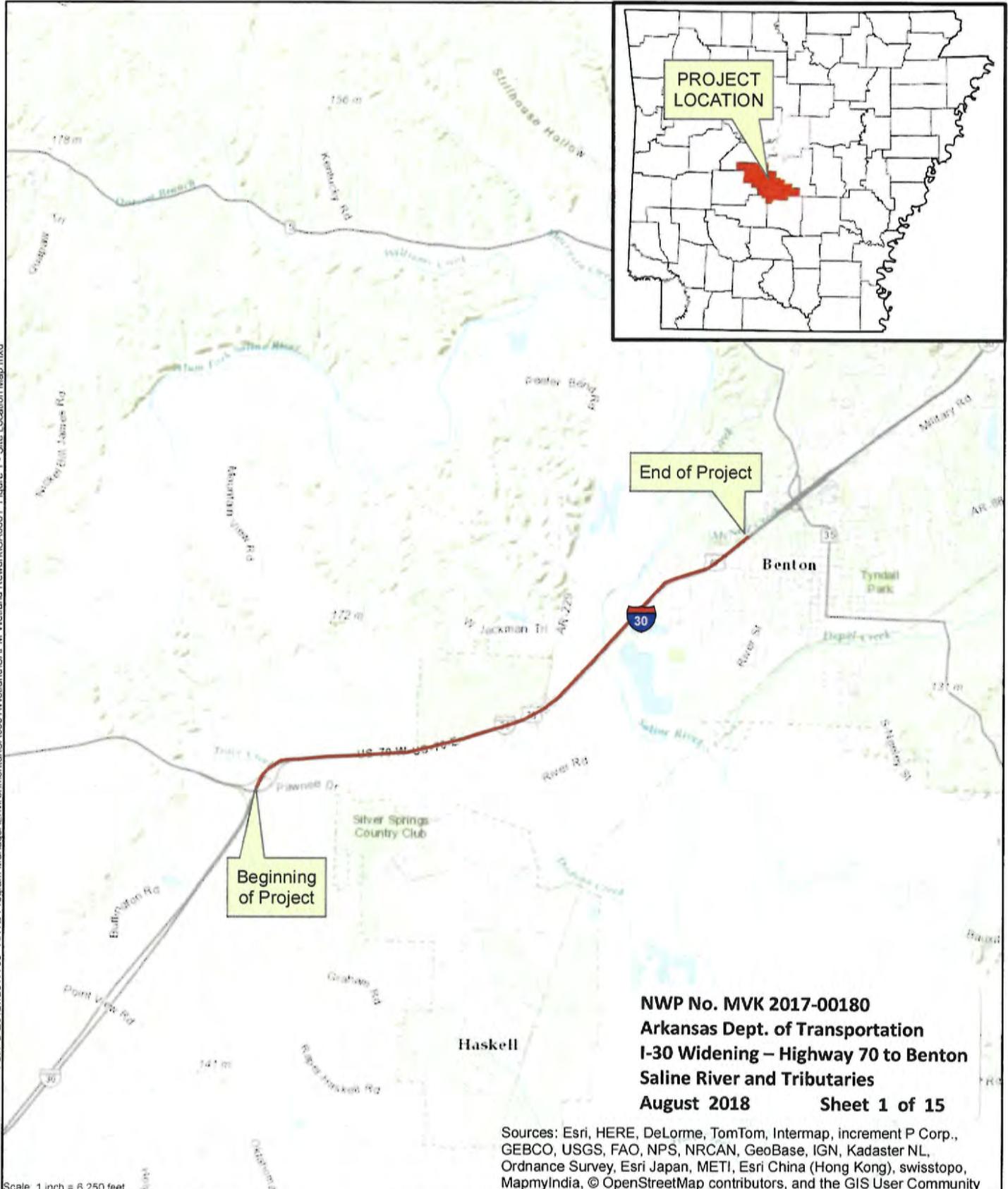
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Vicksburg District Regulatory, w/cy encls.

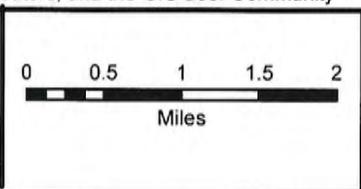
Ms. Millie Remmer, Arkansas Department of Environmental Quality, w/cy encls.

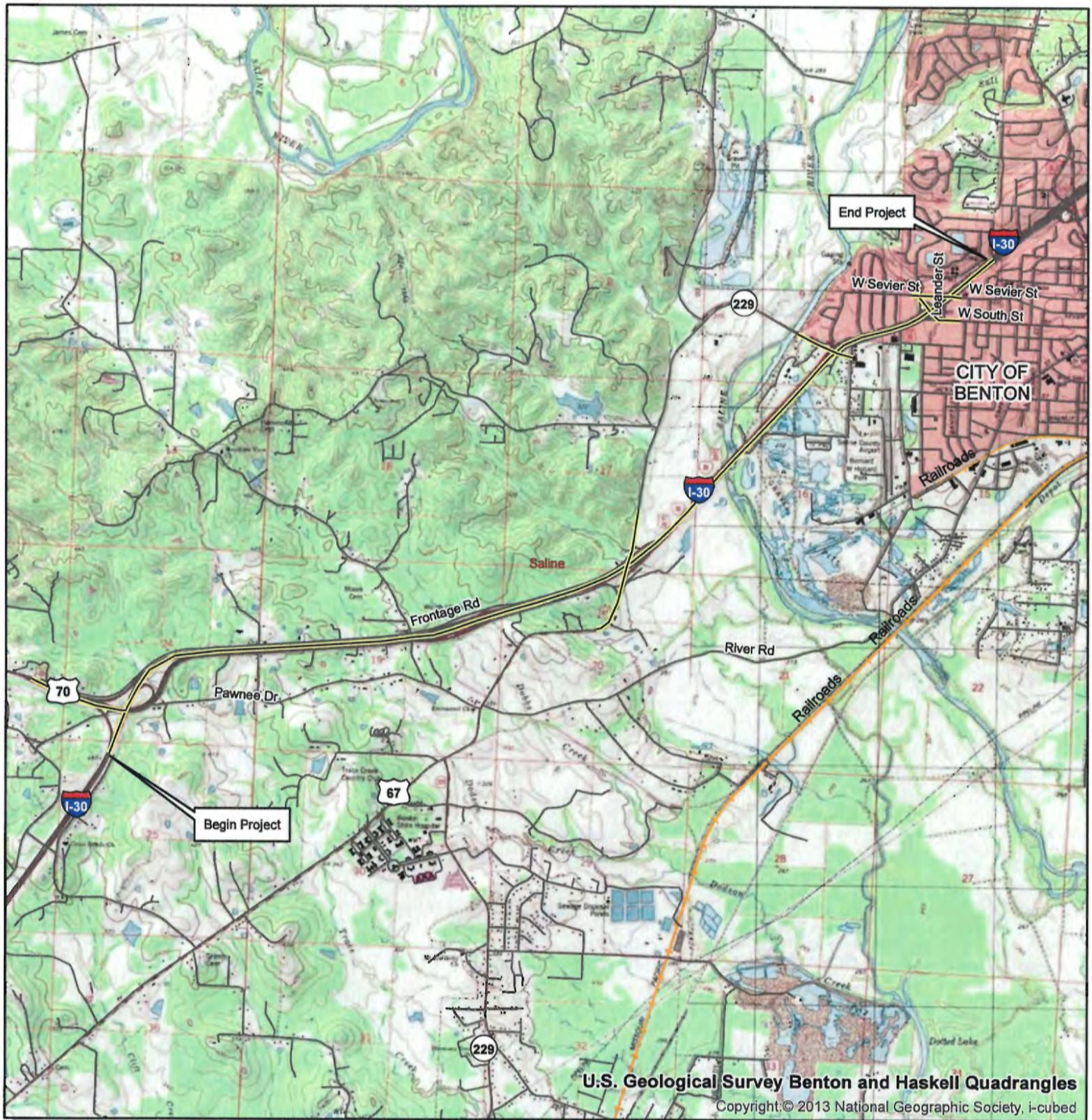
Mr. Lindsey Lewis, U.S. Fish & Wildlife Service, w/cy encls.

Path: L:\2012\12017730 - AHTD Program Manager\Environmental\CA0601\Welland\CAPM Welland Rework\CA0601 - Figure 1 - Site Location Map.mxd



CA0601
 Figure 1 - Site Location Map
 ESRI GIS INFORMATION

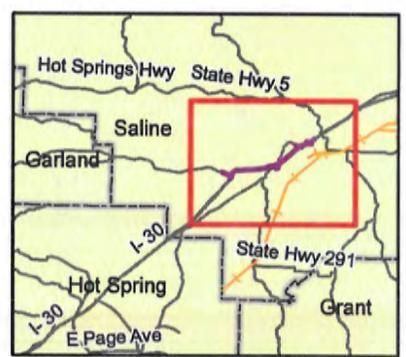


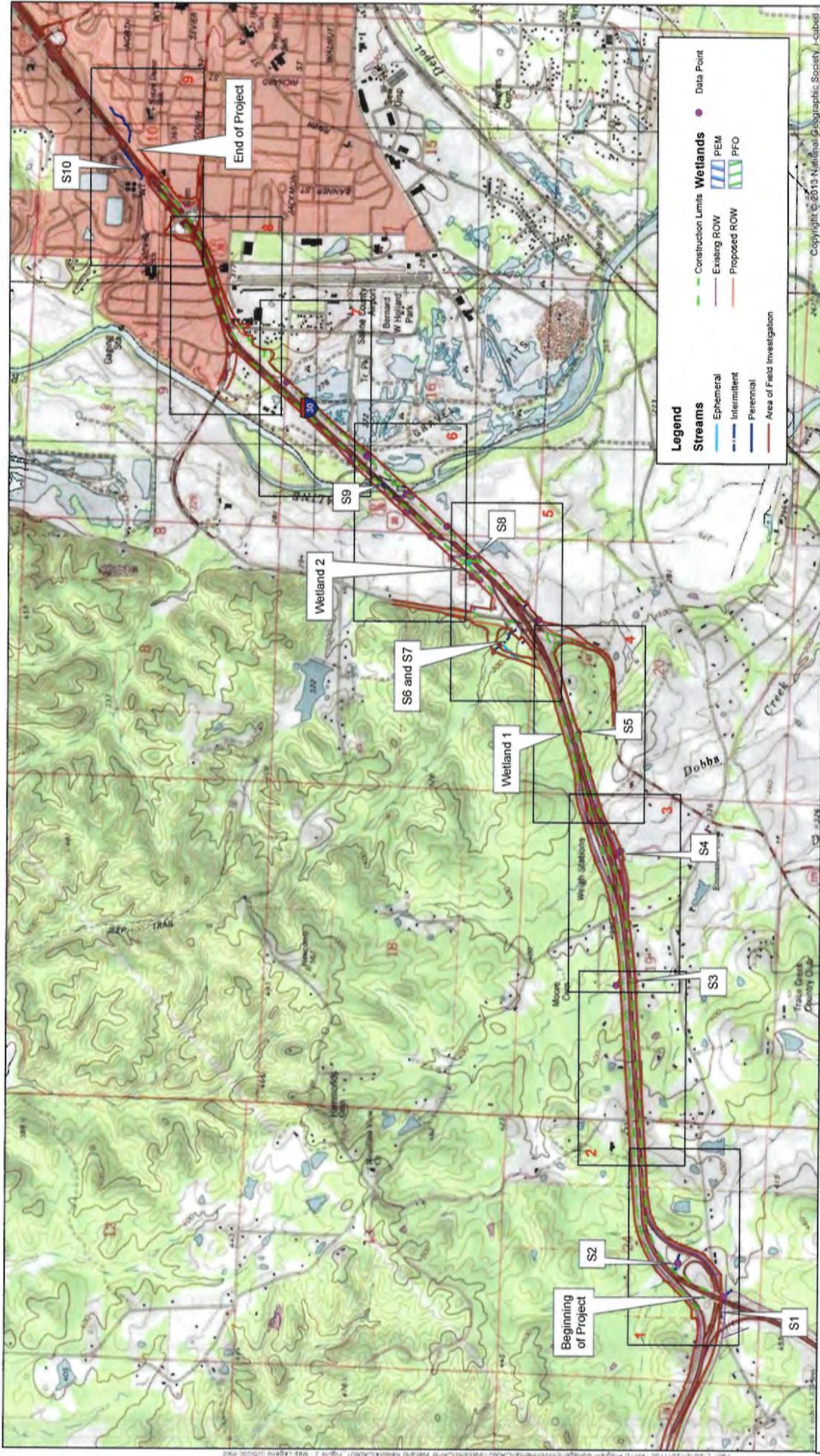


**AHTD Job CA0601
 I-30 Widening
 From Highway 70 to Sevier Street
 Project Location**

Legend

— Project Corridor

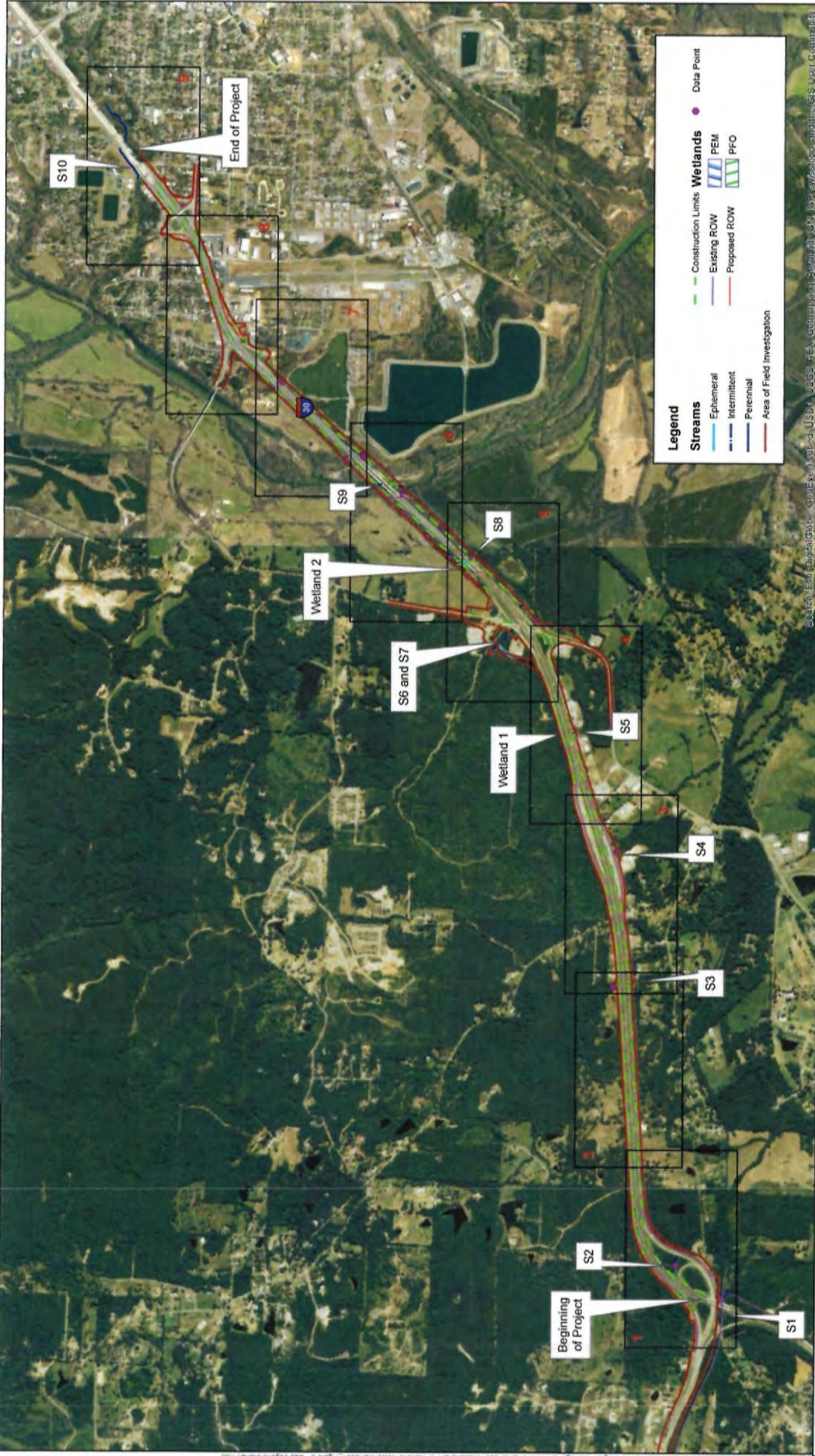




Map Legend (USGS Overview)

Figure 2

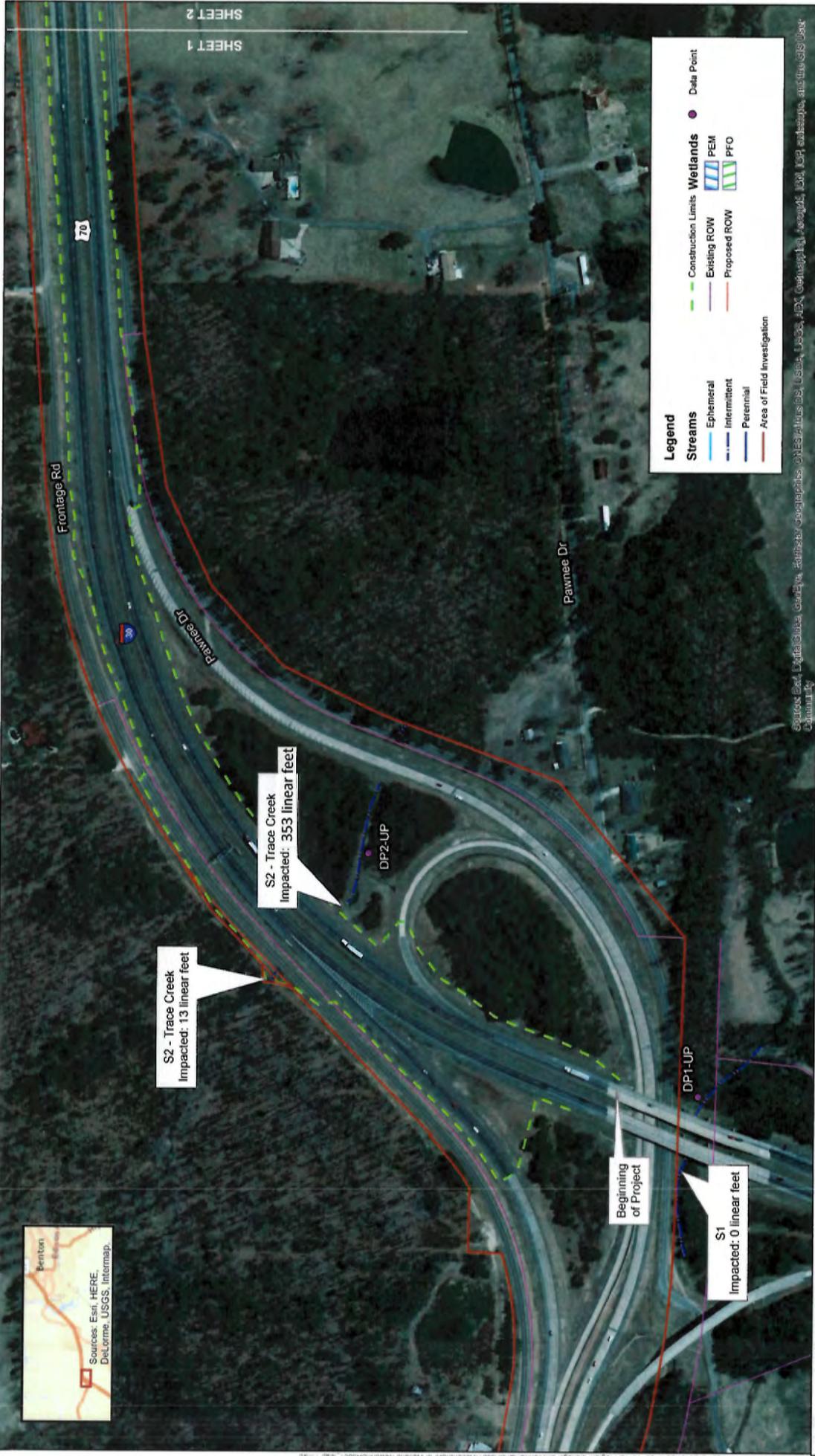
Connecting Arkansas Program
 Job CA0601 - Hwy. 70 - Sevier St. Widening (S)
 Saline County, Arkansas



Map Legend (Aerial Overview)

Figure 3

Connecting Arkansas Program
 Job CA0601 - Hwy. 70 - Sevier St. Widening (S)
 Saline County, Arkansas



Benton

Sources: Esri, HERE, DeLorme, USGS, Intermap.



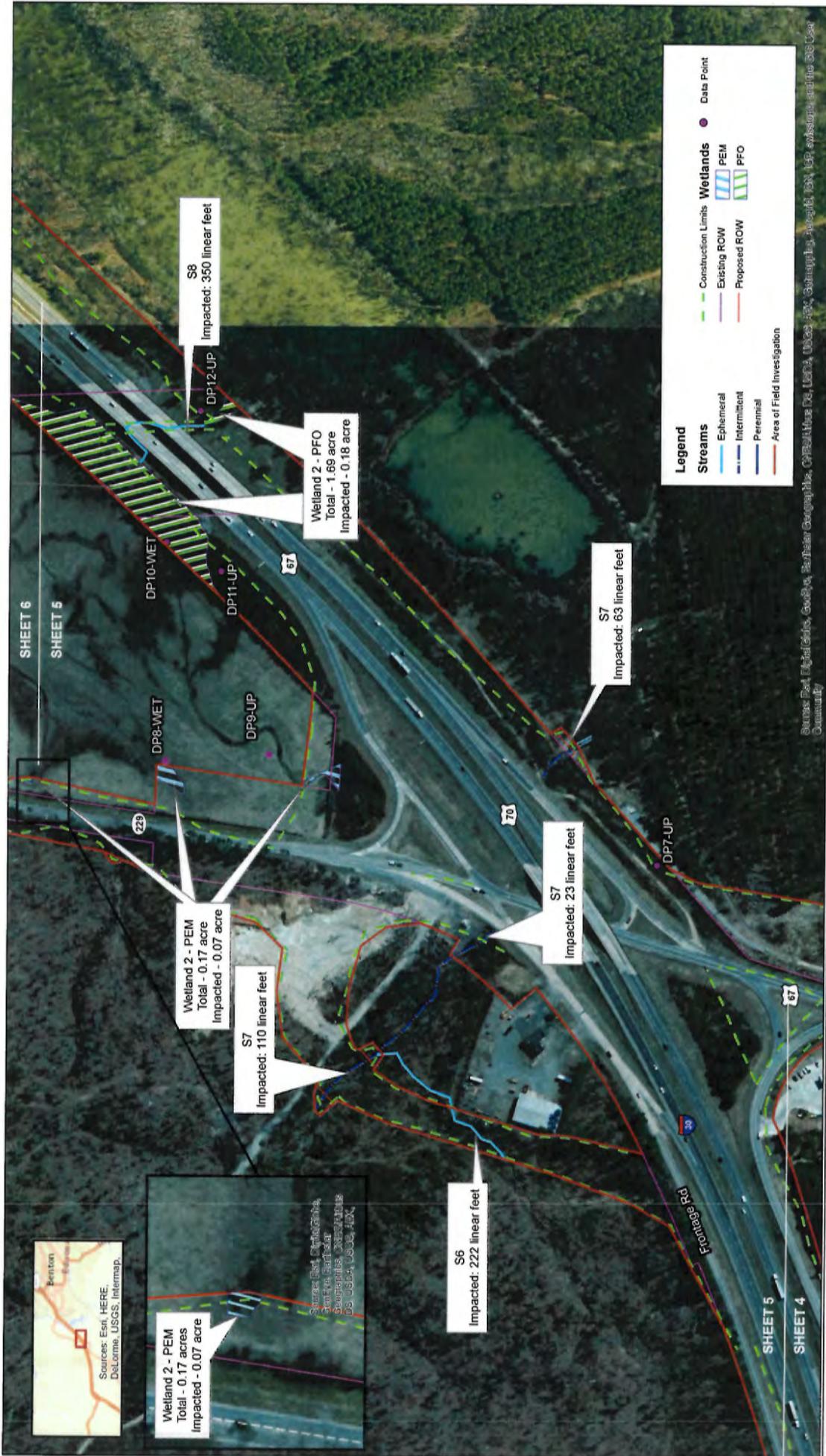
S3 - Dodson Creek
Impacted: 8 linear feet

S3 - Dodson Creek
Impacted: 6 linear feet

S4 - Dobbs Creek
Impacted: 0 linear feet

Jurisdictional Waters Map
Map 3 of 9
Figure 4

Connecting Arkansas Program
Job CA0601 - Hwy 70 - Sevier St. Widening (S)
Saline County, Arkansas



SHEET 6

SHEET 5

Benton
 Sources: Esri, HERE
 DeLorme, USGS, Intermap

Wetland 2 - PEM
 Total - 0.17 acres
 Impacted - 0.07 acre

Wetland 2 - PEM
 Total - 0.17 acre
 Impacted - 0.07 acre

S7
 Impacted: 110 linear feet

S6
 Impacted: 222 linear feet

Wetland 2 - PFO
 Total - 1.69 acre
 Impacted - 0.18 acre

S7
 Impacted: 23 linear feet

S7
 Impacted: 63 linear feet

S8
 Impacted: 350 linear feet

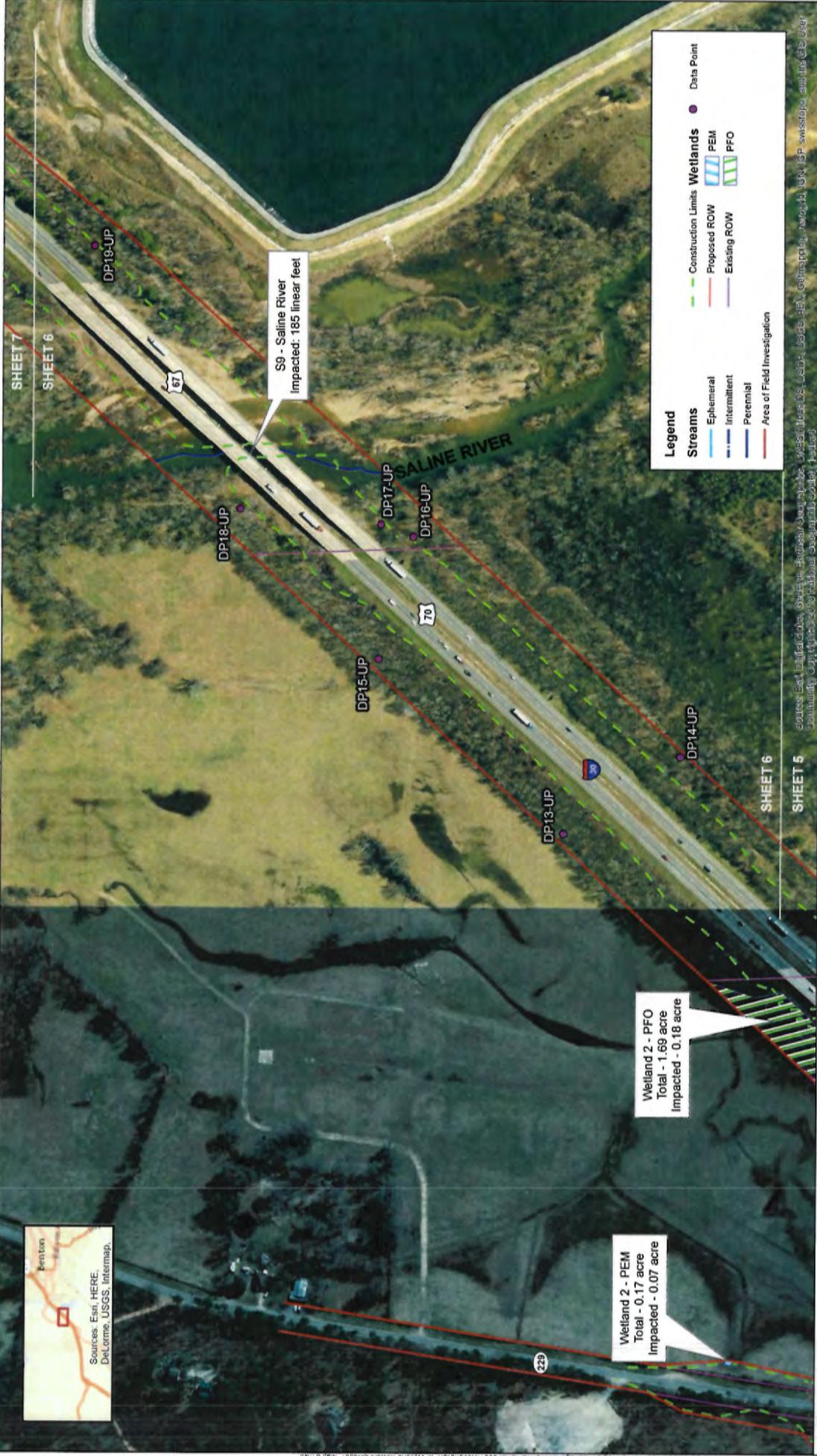
- Legend**
- Construction Limits
 - Existing ROW
 - Proposed ROW
 - Area of Field Investigation
 - Streams
 - Ephemeral
 - Intermittent
 - Perennial
 - Wetlands
 - PEM
 - PFO
 - Data Point

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNR/Air Force, DigitalGlobe, GeoEye, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the SW User Community



Jurisdictional Waters Map
 Map 5 of 9
 Figure 4

Connecting Arkansas Program
 Job CA06001 - Hwy. 70 - Sevier St. Widening (S)
 Saline County, Arkansas



Jurisdictional Waters Map
Map 6 of 9
Figure 4

Connecting Arkansas Program
Job CA0601 - Hwy. 70 - Serier St Widening (S)
Saline County, Arkansas



Legend

Construction Limits	Wetlands	Data Point
Proposed ROW	PEM	
Existing ROW	PFO	
Ephemeral		
Intermittent		
Perennial		
Area of Field Investigation		

Source: Esri, DigitalGlobe, GeoEye, IGN, Aerotech, USDA, GNS, etc., Mapbox, OpenStreetMap contributors, Swisstopo, and the GIS User Community

Jurisdictional Waters Map
 Map 7 of 9
 Figure 4



Connecting Arkansas Program
 Job CA0601 - Hwy. 70 - Sevier St. Widening (S)
 Saline County, Arkansas

TABLE 1. Stream Impacts							
ID number	Stream Name	Station Number Crossing	Approx. GIS Coordinates (Lat/Long)		OHW M Elevation (feet msl) ^	Stream Status	Permanent Impacts (linear ft)
Stream 1	Unnamed	246 + 50	34.53359 N	-92.67704 W	403.5	Intermittent	None
Stream 2	Trace Creek	258 + 50	34.53622 N	-92.67467 W	398.0	Intermittent	353
Stream 3	Dodson Creek	320 + 50	34.53958 N	-92.65516 W	349.5	Intermittent	14
Stream 4	Dobbs Creek	346 + 50	34.54096 N	-92.64683 W	352.5	Intermittent	None
Stream 5	Unnamed	372 + 70	34.542128 N	-92.638105 W	357.9	Intermittent	19
Stream 6	Unnamed	70 + 00 (Frontage Road)	34.546162 N	-92.632592 W	NA	Ephemeral	222
Stream 7	Unnamed	74 + 41 (Frontage Road)	34.546293 N	-92.631928 W	291	Intermittent	196
Stream 8	Unnamed Tributary	414 + 90	34.548280 N	-92.626480 W	NA	Ephemeral	350
Stream 9	Saline River	438 + 00	34.55367 N	-92.62141 W	272.5	Perennial	185*
Stream 10	McNeil Creek	427 + 50	34.56822 N	-92.59878 W	320.5	Perennial	None
TOTAL							1,339'

^Ordinary High Water Mark (OHWM) elevations from existing survey contours and not field measured.
 *Impacts from potential pier placement to be evaluated further as plans progress.

TABLE 2. Wetland Impacts						
ID number	Habitat Type	Station Number Crossing	Approx. GIS Coordinates (Lat/Long)		Acreage within Project	Permanent Impacts (ac)
Wetland 1	Forested	372 + 00	34.542814 N	-92.638972 W	1.8	0.006
2	Forested	416 + 00	34.548460 N	-92.627096 W	1.69	0.18
2	Emergent	416 + 00	34.546951 N	-92.629727 W	0.17	0.07
TOTALS						0.26

Table 2: Proposed Structures

Roadway/ Watercourse	Proposed Structure	Type
Highway 67	148'-0" Composite Plate Girder on Pile End Bents. Total length 150'-2 9/16"	Replacement Structure (I-30 EB)
Highway 67	148'-0" Composite Plate Girder on Pile End Bents. Total length 151'-5 11/16"	Replacement Structure (I-30 WB)
Saline River Relief	8-span Continuous Composite W-Beam Unit on Trestle Pile Bents. Total length 533'-0 7/16"	Replacement Structure (I-30 EB)
Saline River Relief	8-span Continuous Composite W-Beam Unit on Trestle Pile Bents. Total length 533'-0 7/16"	Replacement Structure (I-30 WB)
Saline River Relief	8-span Continuous Composite W-Beam Unit on Trestle Pile Bents. Total length 533'-0 7/16"	New Structure (I-30 WB Ramp)
Saline River	14-span Continuous Composite W-Beam Unit on Trestle Pile Bents and Columns on Drilled Shafts. Total length 1063'-0 3/4"	Replacement Structure (I-30 EB)
Saline River	14-span Continuous Composite W-Beam Unit on Trestle Pile Bents and Columns on Drilled Shafts. Total length 1063'-0 3/4"	Replacement Structure (I-30 WB)
I-30	4-span Continuous Composite W-Beam Unit on Trestle Pile Bents. Total length 150'-2 9/16"	Replacement Structure (South Street)
Trace Creek Sta 258+57	Construct New 288-foot-long RCBC	New Structure
Dobbs Creek Sta 320+78	Extend existing Double 8' x 8' x 256' RCBC to 272'-0"	Culvert Extension
Tributary to Saline River Sta 399+85	Extend existing Double 10' x 6' x 462' RCBC to 542'-4 1/4"	Culvert Extension
Tributary to Saline River Sta 76+28	Triple 10' x 6' x 102'-4 1/2" RCBC	New Structure

ADEQ

ARKANSAS
Department of Environmental Quality

April 20, 2017

Mr. John Fleming
Arkansas State Highway and Transportation Dept.
P.O. Box 2261
Little Rock, Arkansas 72203-2261

RE: 401 Water Quality Certification MVK 2017-00180: AHTD Job No. CA0601, Highway 70 Widening Project, Saline County, Arkansas

Dear Mr. Fleming:

The Arkansas Department of Environmental Quality ("ADEQ") has received and reviewed your request for an Individual Water Quality Certification for the above referenced project. The project is will include the modification of I-30 from Highway 70 to Sevier Street, in Saline County, Arkansas. The proposed project includes the replacement of the bridge crossing the Saline River, which is classified as both an Ecologically Sensitive Water and an Extraordinary Resource Water in Reg. No. 2 Water Quality Standards.

ADEQ has determined that there is a reasonable assurance that this activity will be conducted in a manner which, according to the Arkansas Pollution Control and Ecology Commission's Regulation No.2, will not physically alter a significant segment of the waterbody and will not violate the water quality criteria.

Pursuant to §401(a)(1) of the Clean Water Act, the ADEQ hereby issues water quality certification for this project: **MVK 2017-00180**, contingent upon the following conditions:

- 1) The applicant shall implement all practicable best management practices to avoid excessive impacts of sedimentation and turbidity to the surface waters.
- 2) The applicant will take all reasonable measures to prevent the spillage or leakage of any chemicals, oil, grease, gasoline, diesel or other fuels. In the unlikely event such spillage or leakage occurs, the applicant must contact ADEQ immediately.
- 3) The applicant must obtain a Short Term Activity Authorization (STAA) from ADEQ before performing work in the wetted area of any stream. More information can be obtained by contacting the Water Division Planning Section of ADEQ at 501-682-0946.
- 4) If a construction site will disturb equal to or greater than one (1) acre and less than five (5) acres, the applicant shall comply with the requirements in Reg. 6.203 for Stormwater discharge associated with a small construction site, as defined in APC&EC Regulation No. 6. If the construction site will disturb five (5) acres or more, the applicant shall comply with the terms of the Stormwater Construction General Permit Number ARR150000 prior to the start of construction. BMPs must be implemented regardless of the size. More information can be obtained by contacting the NPDES Stormwater Section of ADEQ at (501) 682-0621.

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

5301 NORTHSHORE DRIVE / NORTH LITTLE ROCK / ARKANSAS 72118-5317 / TELEPHONE 501-682-0744 / FAX 501-682-0880

www.adeq.state.ar.us

In issuing this certification, ADEQ does not assume any liability for the following:

- a. Damages to the proposed project, or uses thereof, as a result of other permitted or unpermitted activities or from natural causes.
- b. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity specified in this certification.
- c. Design or construction deficiencies associated with this proposed project.

Please contact Ms. Lazendra Hairston at (501) 682-0946 if you have any questions regarding this certification.

Sincerely,



Caleb J. Osborne
Associate Director, Office of Water Quality

cc: Johnny L. McLean, USACE, Johnny.L.Melean@usace.army.mil
Wanda Boyd, EPA
Melvin Tobin, USFWS
Jennifer Sheehan, AGFC
Erica McAdoo, ADEQ
Keith Waters, ADEQ
John Fleming, AHTD, John.Fleming@ahtd.ar.gov
Gary Williamson, AHTD, Gary.Williamson@ahtd.ar.gov

Nationwide Permit No. 23

Approved Categorical Exclusions. Activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in part, by another Federal agency or department where:

(a) That agency or department has determined, pursuant to the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act (40 CFR part 1500 et seq.), that the activity is categorically excluded from the requirement to prepare an environmental impact statement or environmental assessment analysis, because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment; and

(b) The Office of the Chief of Engineers (Attn: CECW-CO) has concurred with that agency's or department's determination that the activity is categorically excluded and approved the activity for authorization under NWP 23.

The Office of the Chief of Engineers may require additional conditions, including pre-construction notification, for authorization of an agency's categorical exclusions under this NWP.

Notification: Certain categorical exclusions approved for authorization under this NWP require the permittee to submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 32). The activities that require pre-construction notification are listed in the appropriate Regulatory Guidance Letters. (Sections 10 and 404)

Note: The agency or department may submit an application for an activity believed to be categorically excluded to the Office of the Chief of Engineers (Attn: CECW-CO). Prior to approval for authorization under this NWP of any agency's activity, the Office of the Chief of Engineers will solicit public comment. As of the date of issuance of this NWP, agencies with approved categorical exclusions are: the Bureau of Reclamation, Federal Highway Administration, and U.S. Coast Guard. Activities approved for authorization under this NWP as of the date of this notice are found in Corps Regulatory Guidance Letter 05-07, which is available at:

<http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl05-07.pdf>. Any future approved categorical exclusions will be announced in Regulatory Guidance Letters and posted on this same Web site.

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization.

Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre- construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish

and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(d) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where

it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(e) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing

pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment,

additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWP 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or

compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

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

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

- (a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;
- (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and
- (c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a “USACE project”), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- (2) 45 calendar days have passed from the district engineer’s receipt of the complete PCN and the prospective permittee has not received

written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWP 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee’s right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed activity;
- (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
- (4) A description of the proposed activity; the activity’s purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);
- (5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
- (6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee

must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the “study river” (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity’s compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity’s adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that

they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWP, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

District Engineer's Decision

In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2-acre.

1. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions

provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would

reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31)