




# INTEROFFICE MEMORANDUM

March 20, 2020

**TO:** Master Files

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

**SUBJECT:** Job Number 061630  
FAP Number NHPP-430-2(269)10  
Hwy. 10 – Hwy. 100 (System Preservation & ITS Impvts.) (S)  
Route I-430, Section 21  
Pulaski County  
Tier 1 Categorical Exclusion

After appropriate environmental review, it has been determined that the subject job is a Tier 1 Categorical Exclusion as described by the ARDOT/FHWA Programmatic Agreement on Categorical Exclusion Documentation and Processing. A public hearing will not be offered for this project.

The purpose of this project is to rehabilitate the Arkansas River Bridge deck (#05320) on Interstate 430. Shoulder reconstruction and restriping will also be completed to facilitate the use of the shoulders as travel lanes during peak periods of congestion. These dynamic shoulder lanes will utilize hybrid static-dynamic signage to indicate whether the shoulders are open or closed to traffic. Total length of the project is 1.8 miles. A project location map is attached.

The existing roadway consists of six 12' wide paved travel lanes with 5.5' wide inside shoulders and 10' wide outside shoulders.

Proposed improvements include six 11' wide paved travel lanes with 5.5' wide inside shoulders and 13' wide outside shoulders. No additional right of way will be required for this project. The Roadway Design Request form is attached.

Design data for this project is as follows:

Design Year	Average Daily Traffic	Percent Trucks	Design Speed
2020	96,000	3	70 mph
2040	112,000	3	70 mph

Noise predictions have been made for this project utilizing the Federal Highway Administration's Traffic Noise Model 2.5 procedures. These predictions indicate that there will be no substantial increase in noise levels extending beyond the project right of way limits and that no noise sensitive receptors are affected. In compliance with federal guidelines, local authorities will be notified for land use planning purposes. The Noise Assessment Report is attached.

The project will not involve relocations, prime farmlands, underground storage tanks, hazardous materials, any environmental justice issues, or cultural resources. This project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxic concerns. The cultural resources clearance is attached.

The official species list obtained through the US Fish and Wildlife Service's Information for Planning and Consultation website lists the Least Tern (*Sterna antillarum*), Piping Plover (*Charadrius melodus*), rattlesnake-master borer moth (*Papaipema eryngii*), and running buffalo clover (*Trifolium stoloniferum*) as protected proposed project. Based on the lack of habitat and scope of the project, it has been determined that the proposed project will have "No Effect" on all aforementioned listed species.

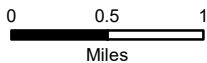
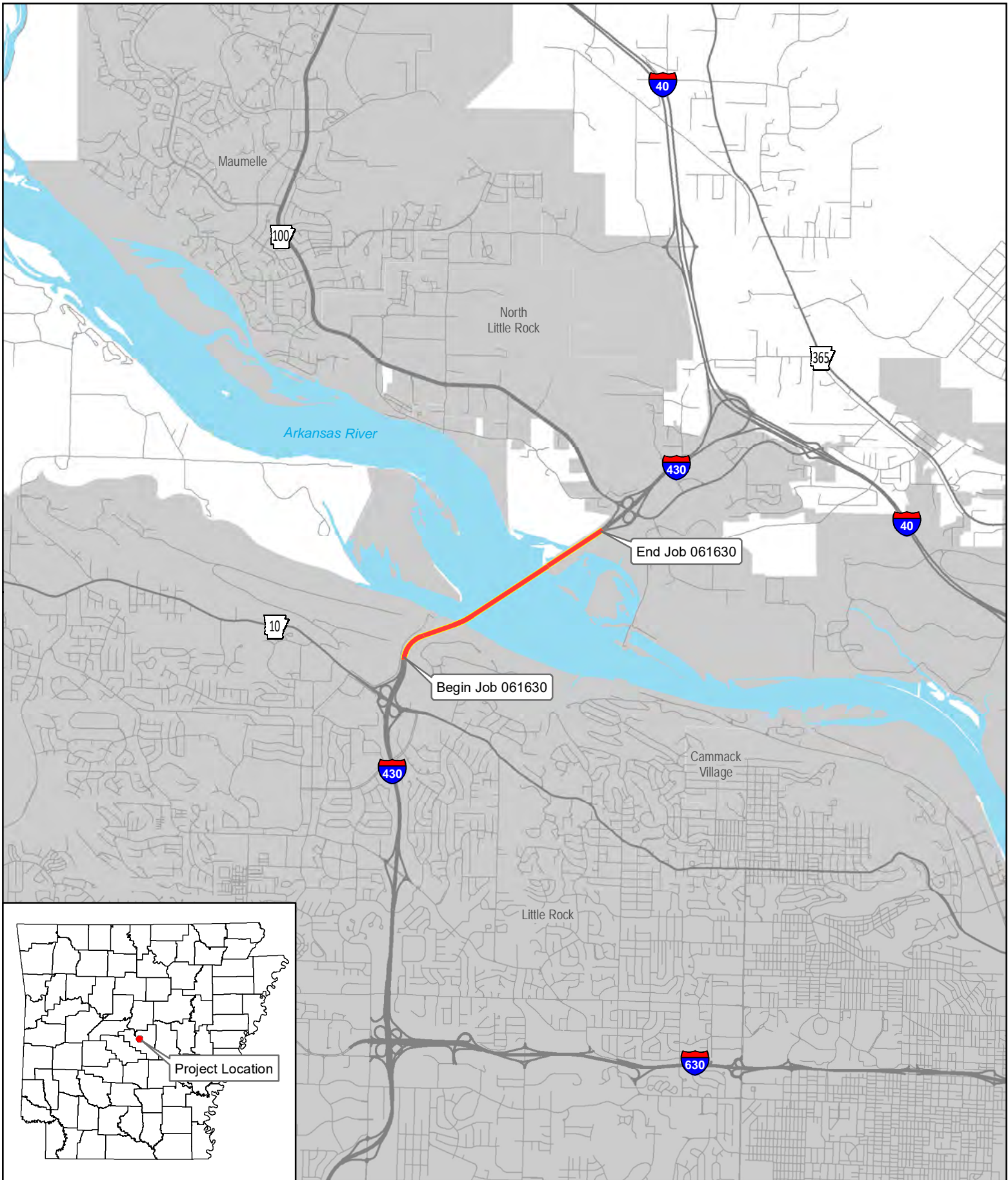
Construction of this project will impact less than 0.1 acre of scrub/shrub, forested wetlands. Construction should be allowed under the terms of a Nationwide Permit 14 for Linear Transportation Projects as defined in the Federal Register 82 (4):1860 – 2008.

JF:JG:am

Attachments:


- Project Location Map
- Noise Assessment Report
- Cultural Resources Clearance
- Environmental Study Checklist
- Roadway Design Request form

c: Program Management  
Right of Way  
Roadway Design  
District 6  
FHWA



ARDOT - Environmental GIS - Strawn  
March 19, 2020

**Job 061630**  
**Hwy. 10 – Hwy. 100 (I-430)**  
 (System Preservation & ITS Impvts.)  
 Pulaski County

 Project Location



# INTEROFFICE MEMORANDUM

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February 27, 2020

**TO:** Job File

**FROM:** Shelby Linck, Cultural Resources, Environmental Division *SL*

**SUBJECT:** Cultural Resources Clearance Addendum  
Job Number 061630  
Hwy. 10 – Hwy. 100 (System Preservation & ITS Impvts.) (S)  
Route I-430, Section 21  
Pulaski County

The Arkansas Department of Transportation (ARDOT) proposes to perform hydrodemolition bridge deck preservation including a latex modified overlay on the Interstate 430 bridge (ARDOT Bridge Number 05320) over the Arkansas River from log miles 9.526 to 12.101 and reconstruction of outside shoulders to Bridge Number 05320, which will be used as travel lanes during peak periods of congestion. This updated clearance addendum addresses new mileage added to the job so that the length now encompasses log mile 8.960 to 12.101. UTBWC will be applied to Interstate 430 from just south of Highway 10 to the south end of the Bridge Number 05320. No new right-of-way (ROW) will be acquired. All work will occur within the existing roadway.

An examination of the Arkansas Archeological Survey's (ARAS) and the Arkansas Historic Preservation Program (AHPP) databases was conducted for previously recorded archeological sites and National Register of Historic Places (NRHP) properties located near the project area. According to ARAS records, no archeological sites were identified on or immediately adjacent to the proposed project area. According to the AHPP's database, PU3234 is a NRHP-listed house located 0.12 miles east of the project area and is has a heavy vegetation buffer so that it is not visible from the project area. ARDOT Bridge Number 05320 falls under the Advisory Council on Historic Preservation's Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System (16 U.S.C.470v & 36 CFR 800.14(c).

In addition to checking ARAS and AHPP databases, nineteenth through twentieth century maps were examined. The 1853 General Land Office plat maps of Township 2 North, Range 13, Section 27 show no cultural development in the area. The 1936 Pulaski County map shows railway and roadway development with interspersed residences mapped

Job Number 061630  
Cultural Resources Clearance Addendum  
Page 2 of 2

nearby the corridor. None of these structures, if still extant, will be affected by project. Note that the Trail of Tears is recorded as a route on the Arkansas River. No evidence of this portion of the trail remains as it is a waterway.

The proposed project will occur in already disturbed areas inside the current ROW. This project, as designed, does not have the potential to affect any undisturbed land surfaces or potential cultural resources. Therefore, this project is subject to the 1999 Memorandum of Agreement (MOA) and falls under the exempted work category "Resurfacing." Per the MOA, this project requires no further Section 106 review.

**NOISE ASSESSMENT REPORT  
SCREENING LEVEL NOISE ANALYSIS  
ARDOT JOB NUMBER 061630**

**HWY. 10 – HWY. 100 (SYSTEM PRESERVATION & ITS IMPVTS.) (S)**

***Fundamentals of Sound and Noise***

Noise is defined as unwanted or undesirable sound. The three basic parameters of how noise affects people are summarized below.

*Intensity* is determined by the level of sound expressed in units of decibels (dB). A 3 dB change in sound level is barely perceptible to most people in a common outdoor setting. However, a 5 dB increase presents a noticeable change and a 10 dB sound level increase is perceived to be twice as loud. Outdoor conversation at normal levels at a distance of 3 feet becomes difficult when the sound level exceeds the mid-60 dBA range.

*Frequency* is related to the tone or pitch of the sound. The amplification or attenuation of different frequencies of sound to correspond to the way the human ear “hears” these frequencies is referred to as “A-weighting.” The A-weighted sound level in decibels is expressed as dBA.

*Variation* with time occurs because most noise fluctuates from moment to moment. A single level called the equivalent sound level (Leq) is used to compensate for this fluctuation. The Leq is a steady sound level containing the same amount of sound energy as the actual time-varying sound evaluated over the same time period. The Leq averages the louder and quieter moments, but gives more weight to the louder moments.

For highway noise assessment purposes, Leq is typically evaluated over the worst 1-hour period and written as Leq(h). The Leq(h) commonly describes sound levels at locations of outdoor human use and activity, and reflects the conditions that will typically produce the worst traffic noise (e.g., the highest traffic volumes traveling at the highest possible speeds).

***Noise Impact and Abatement Criteria***

Traffic noise impacts are determined by comparing design year Leq(h) values to: (1) a set of Noise Abatement Criteria (NAC) for different land use categories; and (2) existing Leq(h) values. A noise impact occurs when design year (future build) levels approach or exceed the NAC value or a substantial increase in noise occurs. An approach is considered to be 1 dBA less than the NAC value. A substantial increase is defined as 10 dBA or greater than existing noise levels.

A *noise sensitive receptor* (receptor) is defined as a representative location of a noise sensitive area for various land uses. Most receptors associated with highway traffic noise analysis are categorized as NAC Activity Category B (residential) and C (e.g., parks, hospitals, schools, places of worship). Since the NAC value for Activity Categories B and C is 67 dBA, noise impacts would occur at 66 dBA or greater.

Consideration of noise abatement measures is required when the NAC value is approached or exceeded, or when a substantial increase is predicted. Noise barriers (e.g., walls or berms) are the most common noise abatement measures.

### ***Screening Level Noise Analysis***

A screening level noise analysis (screening analysis) may be performed for projects that are unlikely to cause noise impacts and/or where noise abatement measures are likely to be unfeasible for acoustical or engineering reasons. For screening analysis purposes, the ARDOT noise policy requires determining noise levels within 4 dBA of the NAC value. The screening analysis threshold would therefore be 63 dBA for Activity Categories B and C.

Screening analysis results represent a worst-case scenario with higher sound levels than would be expected in detailed modeling. The results may be used to determine the need for detailed analysis if noise impacts are likely and the placement of noise barriers is feasible. It may also be used for projects that lack receptors in order to assess impacts on undeveloped land.

The FHWA Traffic Noise Model Version 2.5 (TNM) software program is used to predict existing and future Leq(h) traffic noise levels. The TNM straight line model uses the existing year and design year traffic and roadway information. Receivers (discrete points modeled in the TNM program) are incrementally placed away from the roadway centerline to determine the distance to which impacts extend. The model assumes that the roadway and receivers were located at the same elevation with no intervening barriers such as topography or dense vegetation.

### ***Project Evaluation and Screening Analysis Results***

Reconstruction of the outside existing shoulders of the Arkansas River Bridge on Interstate 430 (I-430) has been proposed. These shoulders will be used as travel lanes during peak periods of congestion. Activity Category B and C receptors were identified in the I-430 project corridor. However, noise barriers were determined to not be feasible. A primary reason is that effective noise barriers must break the line-of-sight (noise path) between vehicles on the roadway and

affected receptors. It would not be possible to break the noise path between I-430 traffic and the uphill residences. Likewise, breaking the noise path between traffic and Two Rivers Park and the Arkansas River Trail may also not be feasible due to elevation differences. The steep topography in the project corridor and the existing bridge structure present other constructability and maintenance considerations. Therefore, a screening analysis was considered an appropriate level of noise assessment for this project.

TNM modeling was completed using currently available roadway information and traffic data. Existing conditions were established using data for the year 2017 and future conditions were established using data for the year 2047. Due to the difference in the way surfaces transmit sound, roadway segments on land and over or adjacent to water were modeled separately. Receivers were extended from the centerlines of the northbound and southbound lanes to distances correlating to approximately 66 dBA and 63 dBA for existing and future conditions. The tenth value was used for rounding the decibel levels (e.g., 66.3 dBA reported as 63 dBA). Although the cross section will be reconfigured, the total roadway width will not be changed. For modeling purposes, however, an additional 11.5 feet was included in the total width for future conditions to represent using the shoulders as travel lanes. The model calculation tables and input data are attached. The predicted noise impact and screening analysis threshold distances and receptors are shown on the attached **Figure 1**.

*Land Segments:* Nine receptors were predicted to experience noise impacts within a distance of 475 feet under future conditions, four of which were predicted to experience noise impacts within a distance of 375 feet under existing conditions (e.g., are currently experiencing noise impacts). Six receptors were predicted to experience noise levels within the 63 dBA screening analysis threshold at a distance of 600 feet under future build conditions.

*Water Segment:* Two receptors were predicted to experience noise impacts within a distance of 1,100 feet under future conditions, one of which (the Arkansas River Trail) is predicted to experience noise impacts within a distance of 900 feet under existing conditions (e.g., is currently experiencing noise impacts).

No substantial increases ( $\geq 10$  dBA) were predicted. Because noise levels in the project area are already dominated by traffic noise from the existing roadway, the impacts caused by the proposed project would be minor (e.g., noise levels not exceeding a 1 to 5 dBA increase). It should also be noted that noise level increases would occur independently of the proposed project due to predicted increases in traffic volumes.



As previously described, it would not be possible to construct an effective noise barrier for engineering and maintenance reasons. A detailed noise analysis was therefore not recommended for this project. However, noise level predictions may be further refined as additional traffic operations data becomes available for this project.

Project construction operations typically increase noise levels. These increases would be temporary and have minimal to minor adverse effects on land uses and activities in the project area. Local ordinances may prohibit construction activities or restrict noise levels or high noise levels between certain time periods (e.g., nighttime and/or weekend work). Temporary construction noise reduction measures such as nighttime and/or weekend work restrictions may also be considered.

### ***Planning Information for Local Officials***

The ARDOT encourages communities and developers to practice local noise compatibility planning. As presented in **Table 1** noise level predictions for future build conditions were made at incremental distances. As previously described, Activity Category B and C land areas would be impacted within a distance of approximately 475 feet from the centerlines of the I-430 northbound and southbound lanes. These predictions do not represent noise levels at every location at a particular distance back from the roadway. Noise levels will vary with changes in terrain and other site conditions.

**Table 1. Noise Levels for Compatibility Planning – Land Surface**

<b>Distance (ft)*</b>	<b>Leq(h), dBA**</b>
475	66
500	65
600	63

\* Perpendicular to centerlines of I-430 northbound and southbound lanes

\*\* Rounded to tenth value

Two Rivers Park and the Arkansas River Trail (Activity Category C land areas) would be impacted within a distance of approximately 1,100 feet from the centerlines of the I-430 northbound and southbound lanes. These predictions do not represent noise levels at every location at a particular distance back from the roadway. Noise levels will vary with changes in terrain and other site conditions.

**Table 1. Noise Levels for Compatibility Planning – Water Surface**

<b>Distance (ft)*</b>	<b>Leq(h), dBA**</b>
1,100	66
1,350	64
1,450	63

\* Perpendicular to centerlines of I-430 northbound and southbound lanes

\*\* Rounded to tenth value

**Table 3** presents the NAC. This information is included to inform local officials and planners of anticipated noise levels so that future development will be compatible. In compliance with federal guidelines, a copy of this screening analysis will be transmitted to the City of Little Rock and the Central Arkansas Metropolitan Planning Organization for land use planning purposes.

**Table 3. Noise Abatement Criteria (NAC)**

<b>Activity Category</b>	<b>L<sub>eq(h)</sub> dBA</b>	<b>Evaluation Location</b>	<b>Activity Description</b>
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.
B*	67	Exterior	Residential properties.
C*	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, recreation areas, Section 4(f) sites, 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 structure, radio studios, recording studios, schools, and television studios.
E*	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.
G	---	---	Undeveloped lands that are not permitted.

\* Includes undeveloped lands permitted for this activity category.

RESULTS: SOUND LEVELS

Job 061630

ARDOT  
M.Pearson

6 November 2019  
TNM 2.5  
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:

Job 061630

RUN:

Existing 2017 - Land

BARRIER DESIGN:

INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS:

68 deg F, 50% RH

Receiver

Name	No.	#DUs	Existing LAeq1h	No Barrier				With Barrier				
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	
			dB	dB	dB	dB		dB	dB	dB	dB	
30	1	1	0.0	84.3	66	84.3	10	Snd Lvl	84.3	0.0	8	-8.0
50	2	1	0.0	81.6	66	81.6	10	Snd Lvl	81.6	0.0	8	-8.0
75	3	1	0.0	79.5	66	79.5	10	Snd Lvl	79.5	0.0	8	-8.0
100	4	1	0.0	78.1	66	78.1	10	Snd Lvl	78.1	0.0	8	-8.0
125	5	1	0.0	76.9	66	76.9	10	Snd Lvl	76.9	0.0	8	-8.0
150	6	1	0.0	75.9	66	75.9	10	Snd Lvl	75.9	0.0	8	-8.0
160	7	1	0.0	75.5	66	75.5	10	Snd Lvl	75.5	0.0	8	-8.0
175	9	1	0.0	75.0	66	75.0	10	Snd Lvl	75.0	0.0	8	-8.0
200	10	1	0.0	74.2	66	74.2	10	Snd Lvl	74.2	0.0	8	-8.0
225	11	1	0.0	73.0	66	73.0	10	Snd Lvl	73.0	0.0	8	-8.0
250	12	1	0.0	71.6	66	71.6	10	Snd Lvl	71.6	0.0	8	-8.0
300	13	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0
325	14	1	0.0	68.2	66	68.2	10	Snd Lvl	68.2	0.0	8	-8.0
350	15	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
375	16	1	0.0	66.3	66	66.3	10	Snd Lvl	66.3	0.0	8	-8.0
400	17	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
450	18	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0
475	19	1	0.0	63.1	66	63.1	10	----	63.1	0.0	8	-8.0
500	20	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	19	0.0	0.0	0.0

RESULTS: SOUND LEVELS

Job 061630

ARDOT  
M.Pearson

6 November 2019  
TNM 2.5  
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:

Job 061630

RUN:

Existing 2017 - Water

BARRIER DESIGN:

INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS:

68 deg F, 50% RH

Receiver

Name	No.	#DUs	Existing LAeq1h	No Barrier				Type Impact	With Barrier			
				LAeq1h		Increase over existing			Calculated LAeq1h	Noise Reduction		Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
30	1	1	0.0	84.3	66	84.3	10	Snd Lvl	84.3	0.0	8	-8.0
50	2	1	0.0	82.0	66	82.0	10	Snd Lvl	82.0	0.0	8	-8.0
75	3	1	0.0	80.1	66	80.1	10	Snd Lvl	80.1	0.0	8	-8.0
100	4	1	0.0	78.8	66	78.8	10	Snd Lvl	78.8	0.0	8	-8.0
125	5	1	0.0	77.8	66	77.8	10	Snd Lvl	77.8	0.0	8	-8.0
150	6	1	0.0	76.9	66	76.9	10	Snd Lvl	76.9	0.0	8	-8.0
160	7	1	0.0	76.6	66	76.6	10	Snd Lvl	76.6	0.0	8	-8.0
175	9	1	0.0	76.1	66	76.1	10	Snd Lvl	76.1	0.0	8	-8.0
200	10	1	0.0	75.5	66	75.5	10	Snd Lvl	75.5	0.0	8	-8.0
225	11	1	0.0	74.9	66	74.9	10	Snd Lvl	74.9	0.0	8	-8.0
250	12	1	0.0	74.3	66	74.3	10	Snd Lvl	74.3	0.0	8	-8.0
300	13	1	0.0	73.3	66	73.3	10	Snd Lvl	73.3	0.0	8	-8.0
325	14	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
350	15	1	0.0	72.4	66	72.4	10	Snd Lvl	72.4	0.0	8	-8.0
400	16	1	0.0	71.5	66	71.5	10	Snd Lvl	71.5	0.0	8	-8.0
450	17	1	0.0	70.8	66	70.8	10	Snd Lvl	70.8	0.0	8	-8.0
500	18	1	0.0	70.1	66	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
600	19	1	0.0	68.8	66	68.8	10	Snd Lvl	68.8	0.0	8	-8.0
700	20	1	0.0	67.7	66	67.7	10	Snd Lvl	67.7	0.0	8	-8.0
800	21	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0
900	22	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
1000	23	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
1250	24	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0

**RESULTS: SOUND LEVELS**

**Job 061630**

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	23	0.0	0.0	0.0
All Impacted	20	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

RESULTS: SOUND LEVELS

Job 061630

ARDOT  
M.Pearson

6 November 2019  
TNM 2.5  
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:

Job 061630

RUN:

Proposed 2047 - Land

BARRIER DESIGN:

INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS:

68 deg F, 50% RH

Receiver

Name	No.	#DUs	Existing LAeq1h	No Barrier				With Barrier				
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
35	1	1	0.0	85.4	66	85.4	10	Snd Lvl	85.4	0.0	8	-8.0
50	2	1	0.0	83.4	66	83.4	10	Snd Lvl	83.4	0.0	8	-8.0
75	3	1	0.0	81.3	66	81.3	10	Snd Lvl	81.3	0.0	8	-8.0
100	4	1	0.0	79.9	66	79.9	10	Snd Lvl	79.9	0.0	8	-8.0
125	5	1	0.0	78.7	66	78.7	10	Snd Lvl	78.7	0.0	8	-8.0
150	6	1	0.0	77.7	66	77.7	10	Snd Lvl	77.7	0.0	8	-8.0
160	7	1	0.0	77.3	66	77.3	10	Snd Lvl	77.3	0.0	8	-8.0
175	9	1	0.0	76.8	66	76.8	10	Snd Lvl	76.8	0.0	8	-8.0
200	10	1	0.0	76.0	66	76.0	10	Snd Lvl	76.0	0.0	8	-8.0
225	11	1	0.0	75.2	66	75.2	10	Snd Lvl	75.2	0.0	8	-8.0
250	12	1	0.0	74.6	66	74.6	10	Snd Lvl	74.6	0.0	8	-8.0
300	13	1	0.0	72.3	66	72.3	10	Snd Lvl	72.3	0.0	8	-8.0
325	14	1	0.0	71.2	66	71.2	10	Snd Lvl	71.2	0.0	8	-8.0
350	15	1	0.0	70.2	66	70.2	10	Snd Lvl	70.2	0.0	8	-8.0
375	16	1	0.0	69.3	66	69.3	10	Snd Lvl	69.3	0.0	8	-8.0
400	17	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
450	18	1	0.0	66.8	66	66.8	10	Snd Lvl	66.8	0.0	8	-8.0
475	19	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
500	20	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
600	21	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB

RESULTS: SOUND LEVELS

Job 061630

ARDOT  
M.Pearson

6 November 2019  
TNM 2.5  
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT:

Job 061630

RUN:

Proposed 2047 - Water

BARRIER DESIGN:

INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS:

68 deg F, 50% RH

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier				With Barrier				
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n			Calculated	Goal	
			dB	dB	dB	dB		dB	dB	dB	dB	
35	1	1	0.0	85.4	66	85.4	10	Snd Lvl	85.4	0.0	8	-8.0
50	2	1	0.0	83.8	66	83.8	10	Snd Lvl	83.8	0.0	8	-8.0
75	3	1	0.0	81.9	66	81.9	10	Snd Lvl	81.9	0.0	8	-8.0
100	4	1	0.0	80.6	66	80.6	10	Snd Lvl	80.6	0.0	8	-8.0
125	5	1	0.0	79.6	66	79.6	10	Snd Lvl	79.6	0.0	8	-8.0
150	6	1	0.0	78.7	66	78.7	10	Snd Lvl	78.7	0.0	8	-8.0
160	7	1	0.0	78.4	66	78.4	10	Snd Lvl	78.4	0.0	8	-8.0
175	9	1	0.0	77.9	66	77.9	10	Snd Lvl	77.9	0.0	8	-8.0
200	10	1	0.0	77.2	66	77.2	10	Snd Lvl	77.2	0.0	8	-8.0
225	11	1	0.0	76.6	66	76.6	10	Snd Lvl	76.6	0.0	8	-8.0
250	12	1	0.0	76.1	66	76.1	10	Snd Lvl	76.1	0.0	8	-8.0
300	13	1	0.0	75.0	66	75.0	10	Snd Lvl	75.0	0.0	8	-8.0
325	14	1	0.0	74.6	66	74.6	10	Snd Lvl	74.6	0.0	8	-8.0
350	15	1	0.0	74.1	66	74.1	10	Snd Lvl	74.1	0.0	8	-8.0
400	16	1	0.0	73.3	66	73.3	10	Snd Lvl	73.3	0.0	8	-8.0
450	17	1	0.0	72.6	66	72.6	10	Snd Lvl	72.6	0.0	8	-8.0
475	18	1	0.0	72.2	66	72.2	10	Snd Lvl	72.2	0.0	8	-8.0
500	19	1	0.0	71.9	66	71.9	10	Snd Lvl	71.9	0.0	8	-8.0
550	20	1	0.0	71.2	66	71.2	10	Snd Lvl	71.2	0.0	8	-8.0
600	21	1	0.0	70.6	66	70.6	10	Snd Lvl	70.6	0.0	8	-8.0
650	22	1	0.0	70.0	66	70.0	10	Snd Lvl	70.0	0.0	8	-8.0
750	23	1	0.0	68.9	66	68.9	10	Snd Lvl	68.9	0.0	8	-8.0
850	24	1	0.0	67.9	66	67.9	10	Snd Lvl	67.9	0.0	8	-8.0



**RESULTS: SOUND LEVELS**

**Job 061630**

950	25	1	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	8	-8.0
1000	26	1	0.0	66.6	66	66.6	10	Snd Lvl	66.6	0.0	8	-8.0
1100	27	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
1350	28	1	0.0	63.8	66	63.8	10	----	63.8	0.0	8	-8.0
1450	29	1	0.0	63.1	66	63.1	10	----	63.1	0.0	8	-8.0
Dwelling Units	# DUs	Noise Reduction										
		Min	Avg	Max								
		dB	dB	dB								
All Selected	28	0.0	0.0	0.0								
All Impacted	25	0.0	0.0	0.0								
All that meet NR Goal	0	0.0	0.0	0.0								

## NOISE DATA WORKSHEET

Job No:

Job Name:

Roadway Reference:

County:

Design Year:

Year(s) To Be Modeled:

Roadway Cross-Sections:

Note: DHV = (ADT)(K)  
 DDHV = (ADT)(K)(D)  
 K - Percent of ADT occurring in design hour  
 D - Directional Distribution

Operating Speed:

Traffic Data:

YEAR	ADT	%TRUCK	DHV	CARS	MT	HT	CARS/2	MT/2	HT/2
					10%	90%			
				0	0	0	0	0	0
2017	87,000	3%	7830	7595	23	211	3798	12	106

## NOISE DATA WORKSHEET

Job No:

Job Name:

Roadway Reference:

County:

Design Year:

Year(s) To Be Modeled:

Roadway Cross-Sections:

Note:  $DHV = (ADT)(K)$   
 $DDHV = (ADT)(K)(D)$   
 K - Percent of ADT occurring in design hour  
 D - Directional Distribution

Operating Speed:

Traffic Data:

YEAR	ADT	%TRUCK	DHV	CARS	MT	HT	CARS/2	MT/2	HT/2
					10%	90%			
				0	0	0	0	0	0
2047	131,000	3%	11790	11436	35	318	5718	18	159



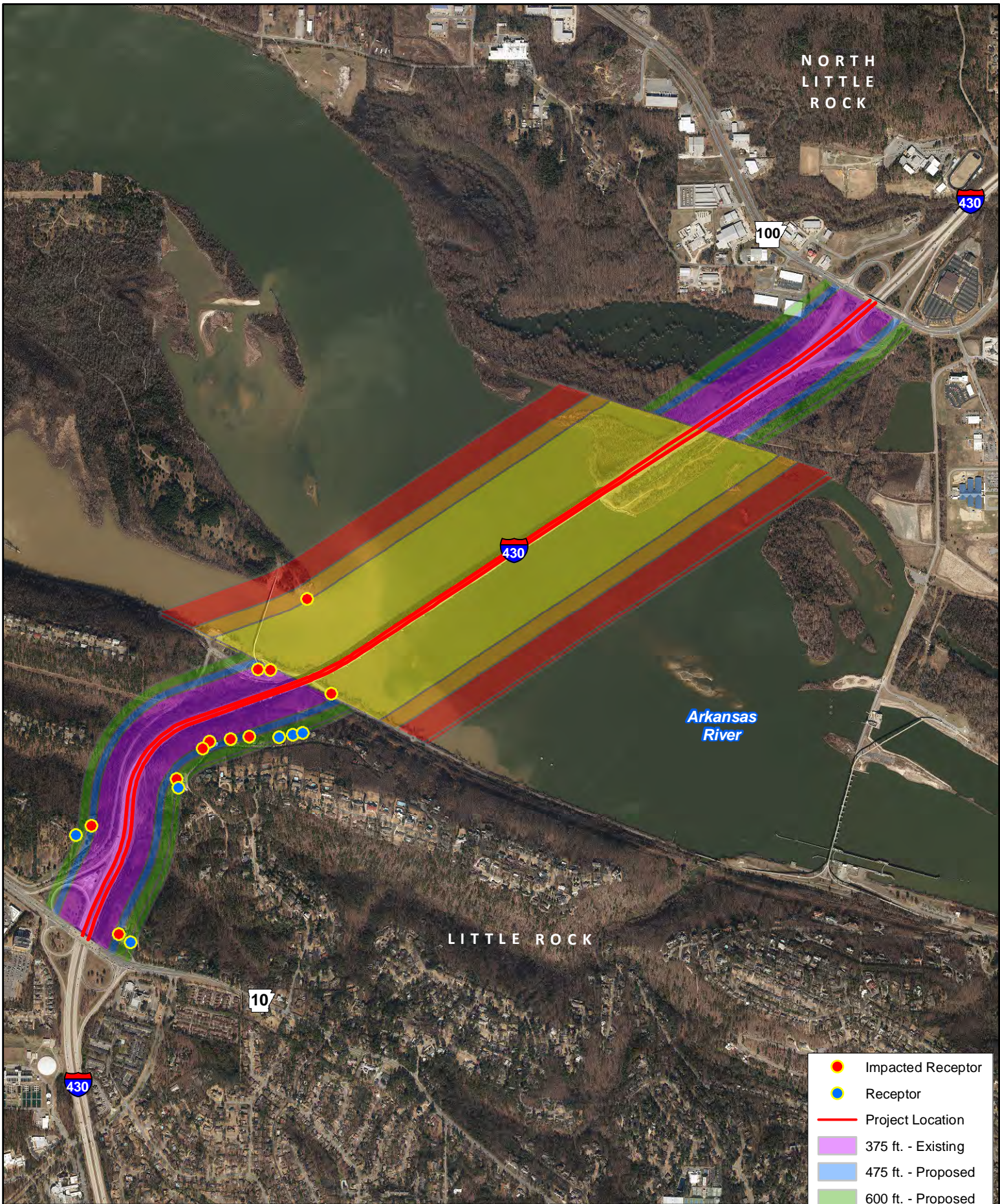
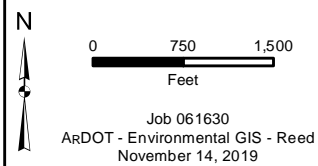


Figure 1.  
Noise Level Distances



- Impacted Receptor
  - Receptor
  - Project Location
  - 375 ft. - Existing
  - 475 ft. - Proposed
  - 600 ft. - Proposed
  - 900 ft. - Existing
  - 1,100 ft. - Proposed
  - 1,450 ft. - Proposed
- Photography Date:  
 January - February 2017



**ARDOT ENVIRONMENTAL VERIFICATION CHECKLIST  
FOR CONSIDERATION OF POTENTIAL IMPACTS**

ARDOT Job Number 061630 FAP Number NHPP-430-2(269)10

Job Title Hwy. 10 – Hwy. 100 (System Preservation & ITS Impvts.) (S)

Environmental Resource	None	Minimal	Major	Comments-required for each item
Air Quality	X			No air quality/MSAT impacts
Cultural Resources	X			Cultural Resources clearance attached
Economic	X			No adverse impacts
Endangered Species	X			“No effect” determination
Environmental Justice/Title VI	X			EJ populations not located in project area
Fish and Wildlife		X		Temporary during construction
Floodplains	X			Not affected by project
Forest Service Property	X			None in project area
Hazardous Materials/Landfills	X			No sites in project area
Land Use	X			Will not be impacted by project
Migratory Birds		X		Migratory Bird SP
Navigation/Coast Guard	X			No navigable waterways involved
Noise Levels	X			No substantial increases due to project, Noise Assessment Report attached
Prime Farmland	X			None in project area
Protected Waters	X			None occur in project area
Public Recreation Lands	X			None in project area
Public Water Supply/WHPA	X			No impacts anticipated
Relocates	X			No relocations
Section 4(f)/6(f)	X			4f resources not present
Social	X			No impacts to the social environment
Underground Storage Tanks	X			No USTs in project area
Visual	X			No changes to visual environment
Streams	X			No impacts due to the scope of the project
Water Quality		X		Temporary during construction
Wetlands		X		Less than 0.1 acre
Wildlife Refuges	X			None in the project area

Section 401 Water Quality Certification Required? No  
 Short-term Activity Authorization Required? Yes  
 Section 404 Permit Required? Yes Type Nationwide Permit 14

Remarks: .

Signature of Evaluator  Date 3/20/2020

**ROADWAY DESIGN REQUEST**

Job Number 061630 FAP No. NHPP-430-2(269) County Pulaski

Job Name Hwy. 10 – Hwy. 100 (System Preservation & ITS Impvts.) (S)

Design Engineer Nick Dail Environmental Staff \_\_\_\_\_

Brief Project Description Hydrodemolition and latex modified overlay with increased reinforcing cover where necessary. ITS provisions for running on shoulders during peak periods. Full depth shoulder reconstruction. Concrete pavement grinding and UTBWC south of the Arkansas River bridge.

A. Existing Conditions:

Roadway Width: 51.5' (Each Direction) Shoulder Type/Width: 5.5' Inside  
10' Outside

Number of Lanes and Width: 6 @ 12' Existing Right-of-Way: N/A<sup>(1)</sup>

Sidewalks? No Location: \_\_\_\_\_ Width: \_\_\_\_\_

Bike Lanes? No Location: \_\_\_\_\_ Width: \_\_\_\_\_

B. Proposed Conditions:

Roadway Width: 51.5' (Each Direction) Shoulder Type/Width: 5.5' Inside  
13' Outside

Number of Lanes and Width: 6 @ 11' Proposed Right-of-Way: N/A<sup>(1)</sup>

Sidewalks? No Location: \_\_\_\_\_ Width: \_\_\_\_\_

Bike Lanes? No Location: \_\_\_\_\_ Width: \_\_\_\_\_

C. Construction Information:

If detour: Where: \_\_\_\_\_ Length: \_\_\_\_\_

D. Design Traffic Data:

2020 ADT: 96,000 2040 ADT: 112,000 % Trucks: 3

Design Speed: 70 m.p.h.

E. Approximate total length of project: 1.832 mile(s)

F. Justification for proposed improvements: \_\_\_\_\_

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

H. Have you coordinated with any outside agencies (e.g., FHWA, City, County, etc.)? No

Agency/Official	Person Contacted	Date

<sup>(1)</sup> No additional ROW is required