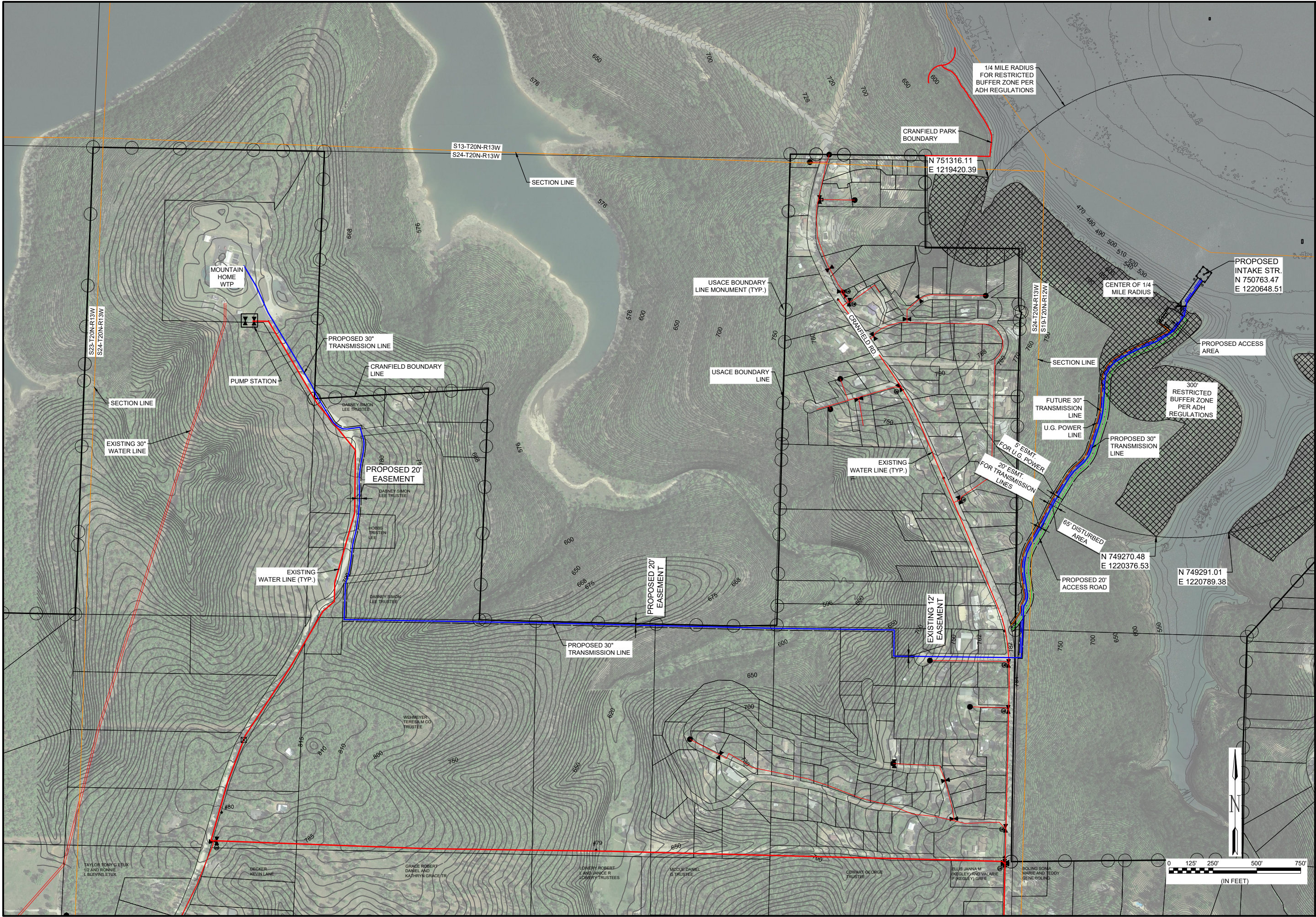



Appendix A

Preliminary Engineering Plans

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PRELIMINARY

REV.	DATE	DESCRIPTION	BY

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

MOUNTAIN HOME
LAKE NORFORK
WATER INTAKE

EXHIBIT 1 - OVERALL
SITE PLAN

JOB NO.: 20W01380
DATE: JAN. 2021
DESIGNED BY:
DRAWN BY:

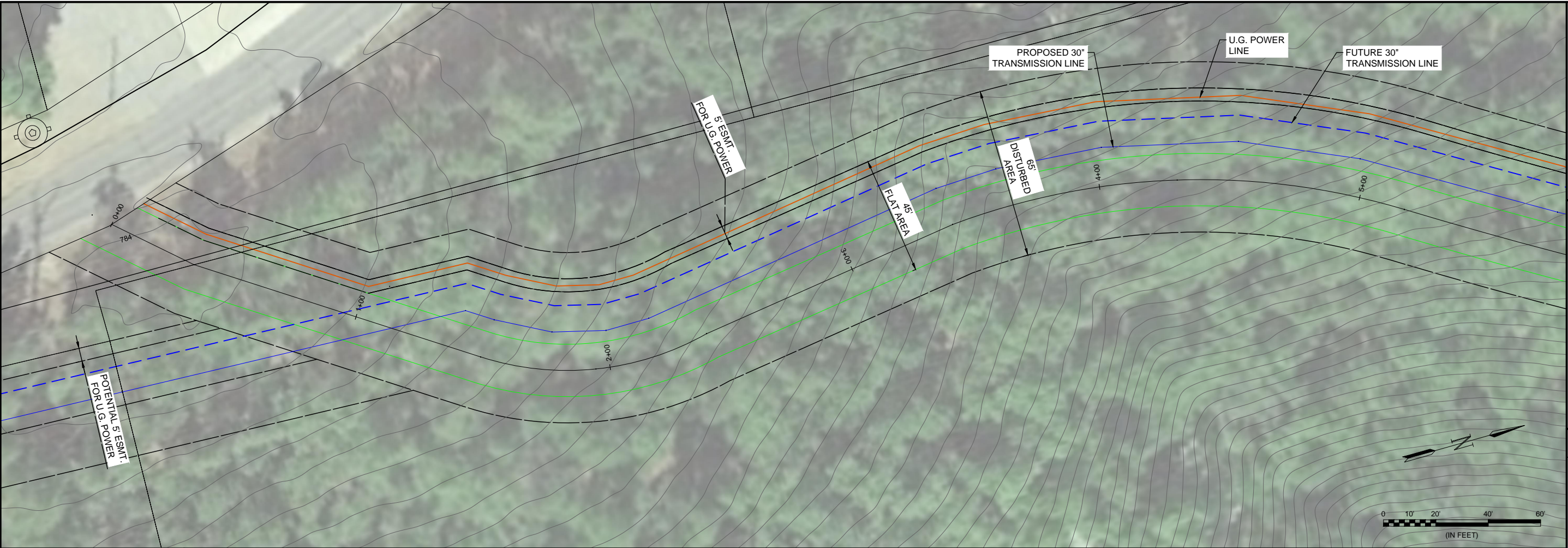
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DRAWING NUMBER
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SHEET
NUMBER **1**

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PRELIMINARY

REV.	DATE	DESCRIPTION	BY

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

MOUNTAIN HOME
LAKE NORFORK
WATER INTAKE

EXHIBIT 5A - ACCESS
ROAD PP1
REVISION #1
SEPT. 8, 2020

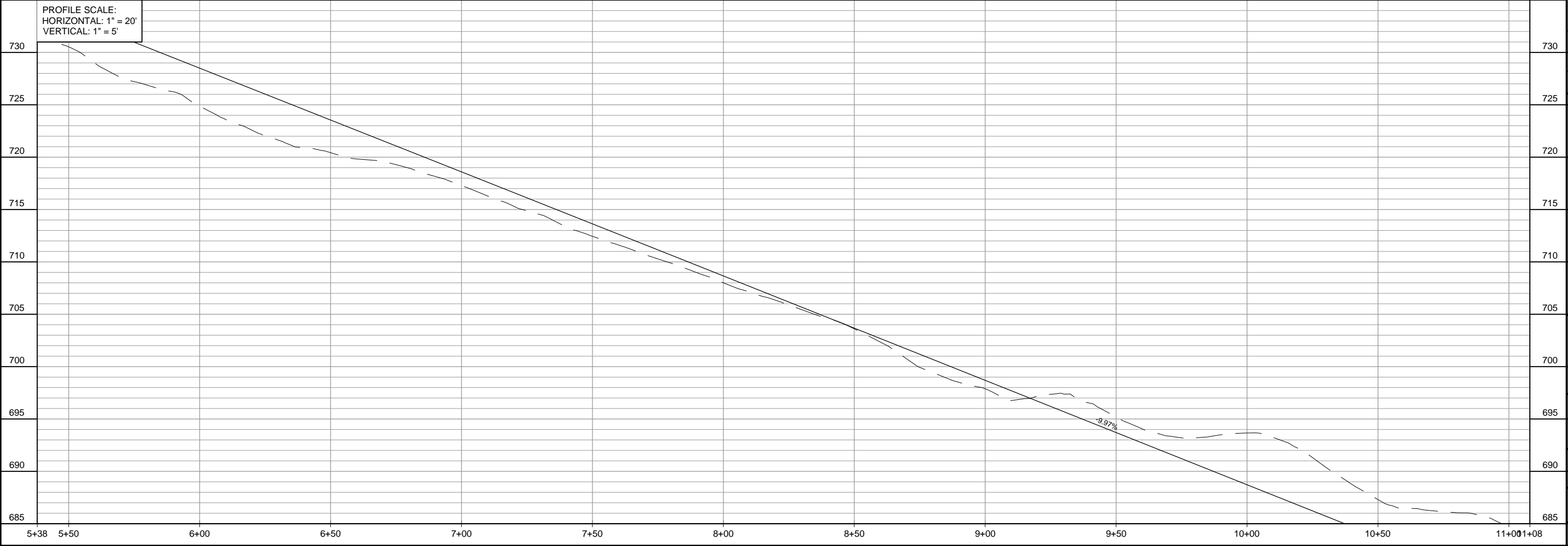
JOB NO.: 20W01380
DATE: SEPT. 2020
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DRAWN BY:


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SHEET
NUMBER 5A

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BY	DESCRIPTION	DATE	REV.

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

MOUNTAIN HOME
LAKE NORFORK
WATER INTAKE

EXHIBIT 5B - ACCESS
ROAD PP2
REVISION #1
SEPT. 8, 2020

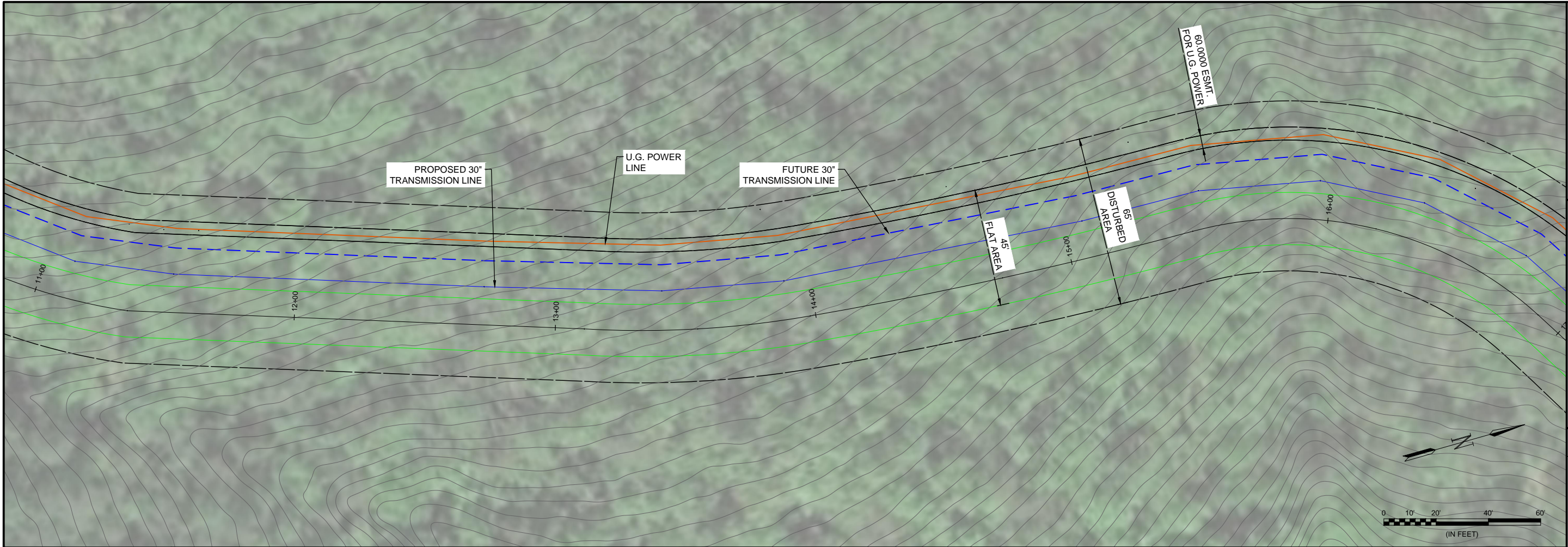
JOB NO.: 20W01380
DATE: SEPT. 2020
DESIGNED BY:
DRAWN BY:


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NUMBER 5B

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BY	DESCRIPTION	DATE	REV.

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

MOUNTAIN HOME
LAKE NORFORK
WATER INTAKE

EXHIBIT 5C - ACCESS
ROAD PP3
REVISION #1
SEPT. 8, 2020

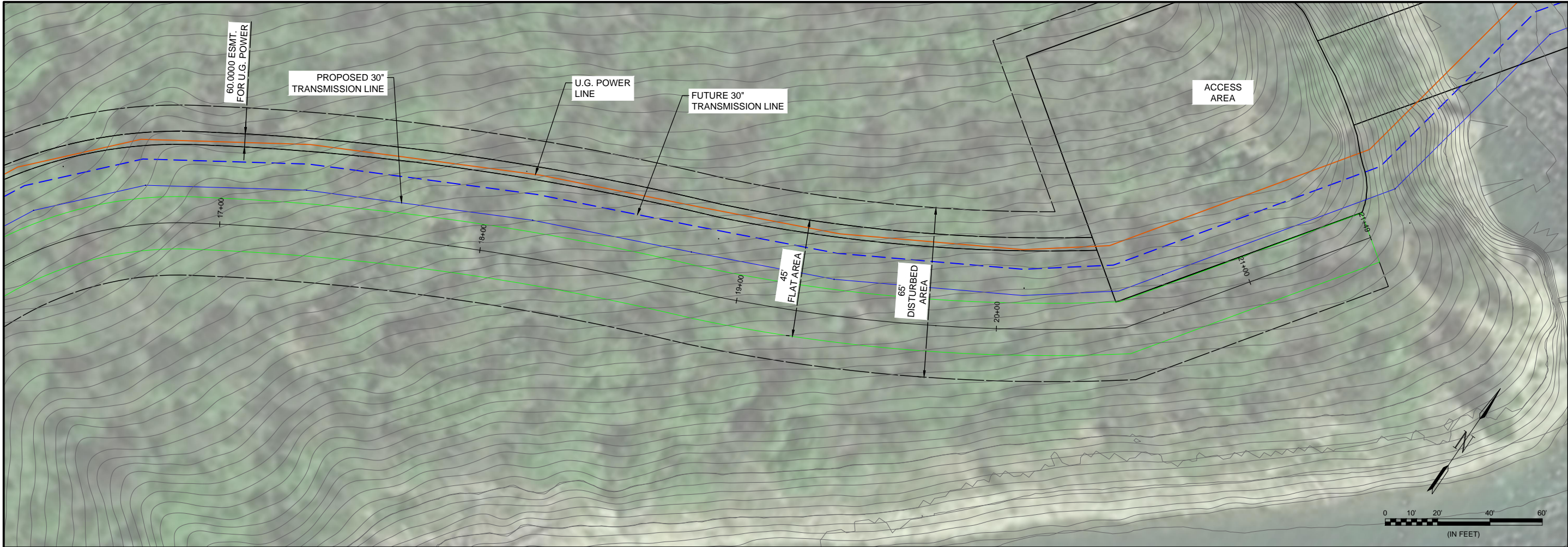
JOB NO.: 20W01380
DATE: SEPT. 2020
DESIGNED BY:
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REV.	DATE	DESCRIPTION	BY

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

MOUNTAIN HOME
LAKE NORFORK
WATER INTAKE

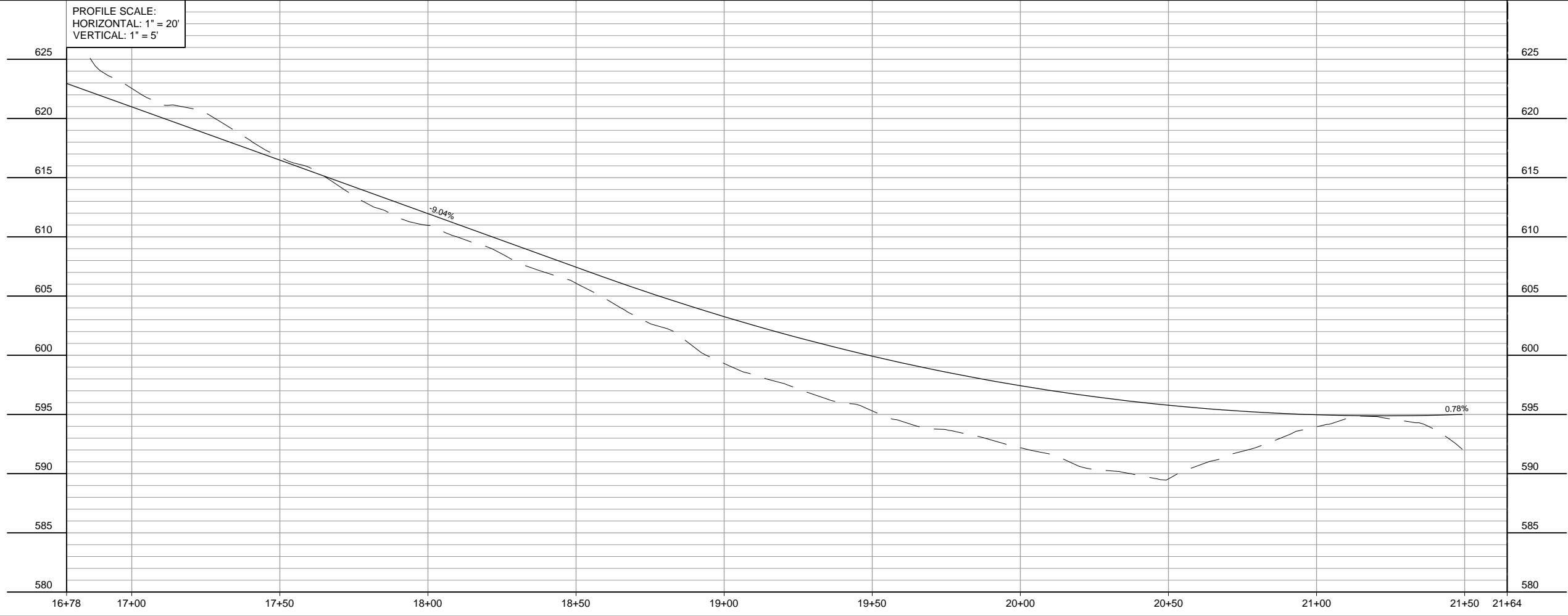
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ROAD PP4
REVISION #1
SEPT. 8, 2020

JOB NO.: 20W01380
DATE: SEPT. 2020
DESIGNED BY:
DRAWN BY:

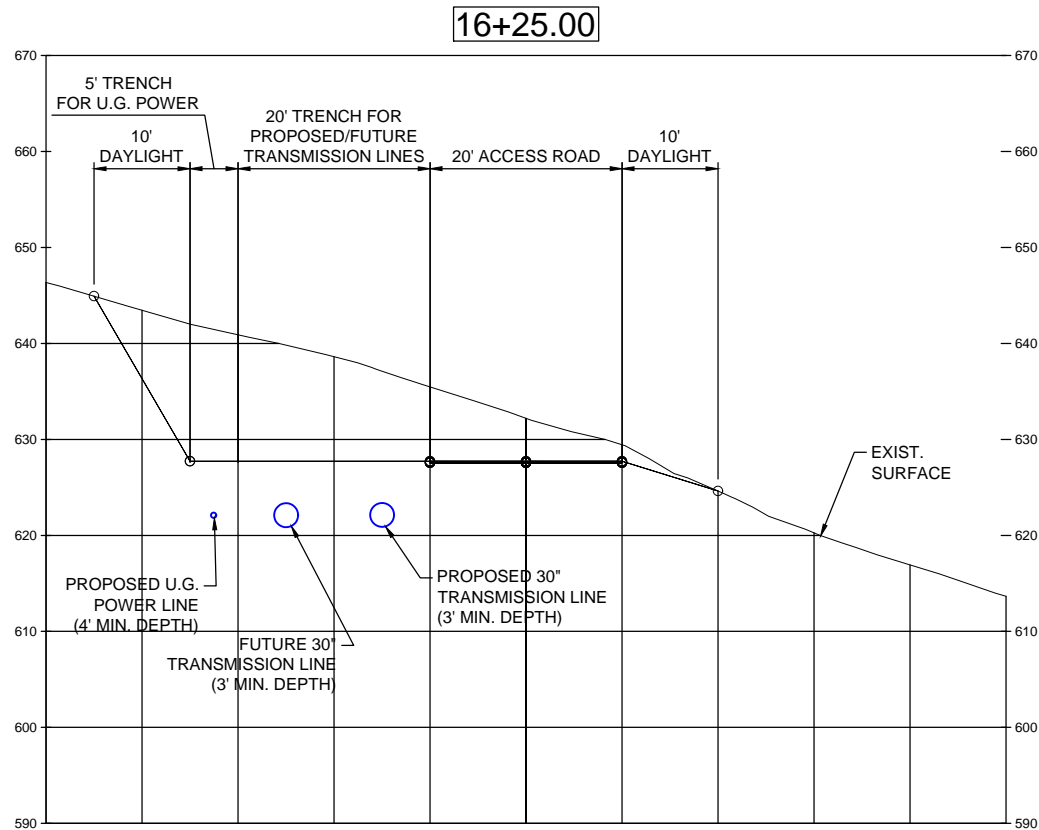
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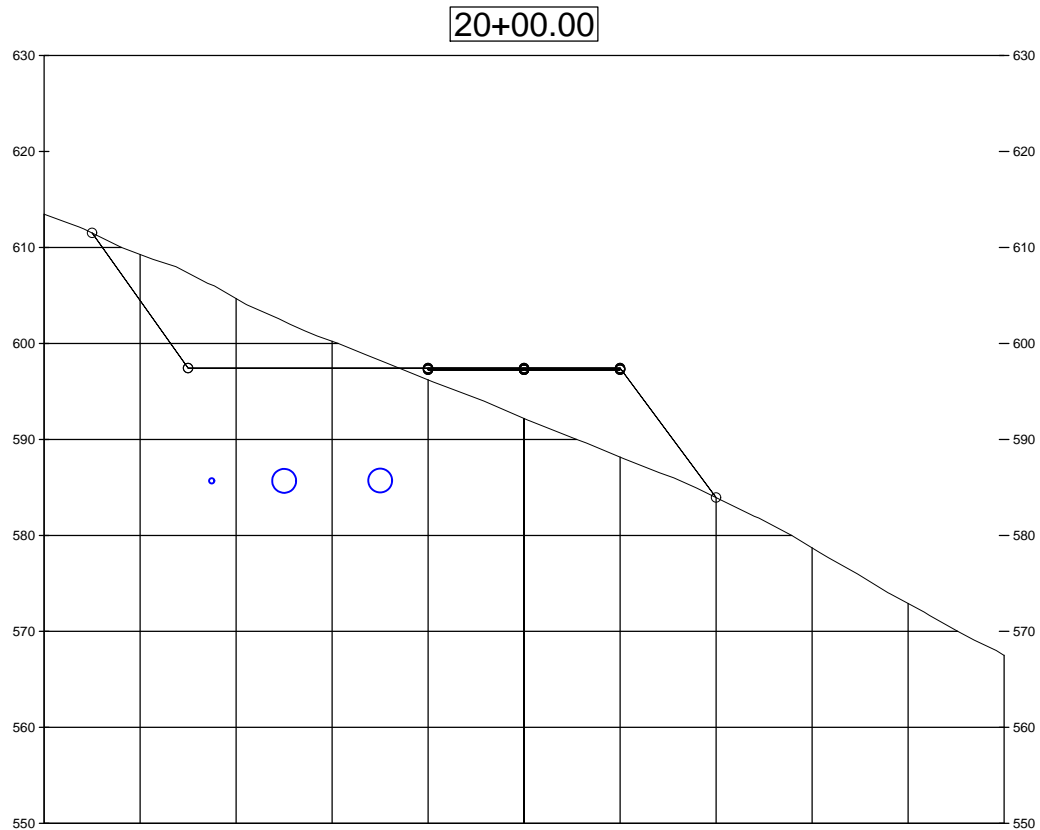
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PROFILE SCALE:
HORIZONTAL: 1" = 10'
VERTICAL: 1" = 10'



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PRELIMINARY

BY				
DESCRIPTION				
DATE				
REV.				

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

MOUNTAIN HOME
LAKE NORFORK
WATER INTAKE

EXHIBIT 6 - ACCESS
ROAD SECTIONS
REVISION #1
SEPT. 8, 2020

JOB NO.: 20W01380
DATE: SEPT. 2020
DESIGNED BY:
DRAWN BY:


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DRAWING NUMBER

SHEET
NUMBER 5E

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PRELIMINARY

REV.	DATE	DESCRIPTION	BY

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

MOUNTAIN HOME
LAKE NORFORK
WATER INTAKE

PROPOSED LANDING
- LAYOUT

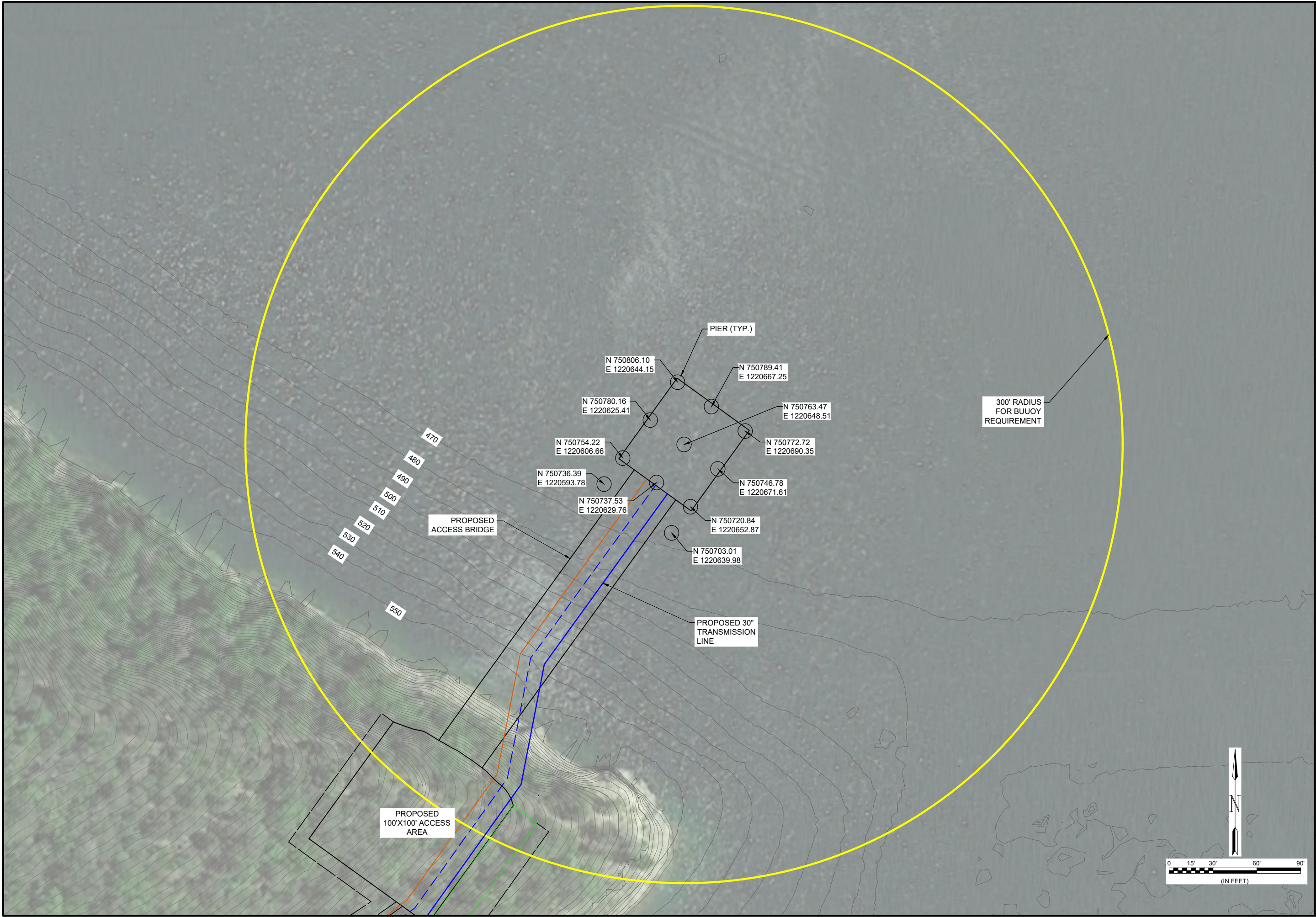
JOB NO.: 20W01380
DATE: JAN. 2021
DESIGNED BY:
DRAWN BY:


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NUMBER **1**

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PRELIMINARY

BY	DESCRIPTION	DATE	REV.

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

MOUNTAIN HOME
LAKE NORFORK
WATER INTAKE

PROPOSED INTAKE - LAYOUT
REVISION #1
SEPT. 8, 2020

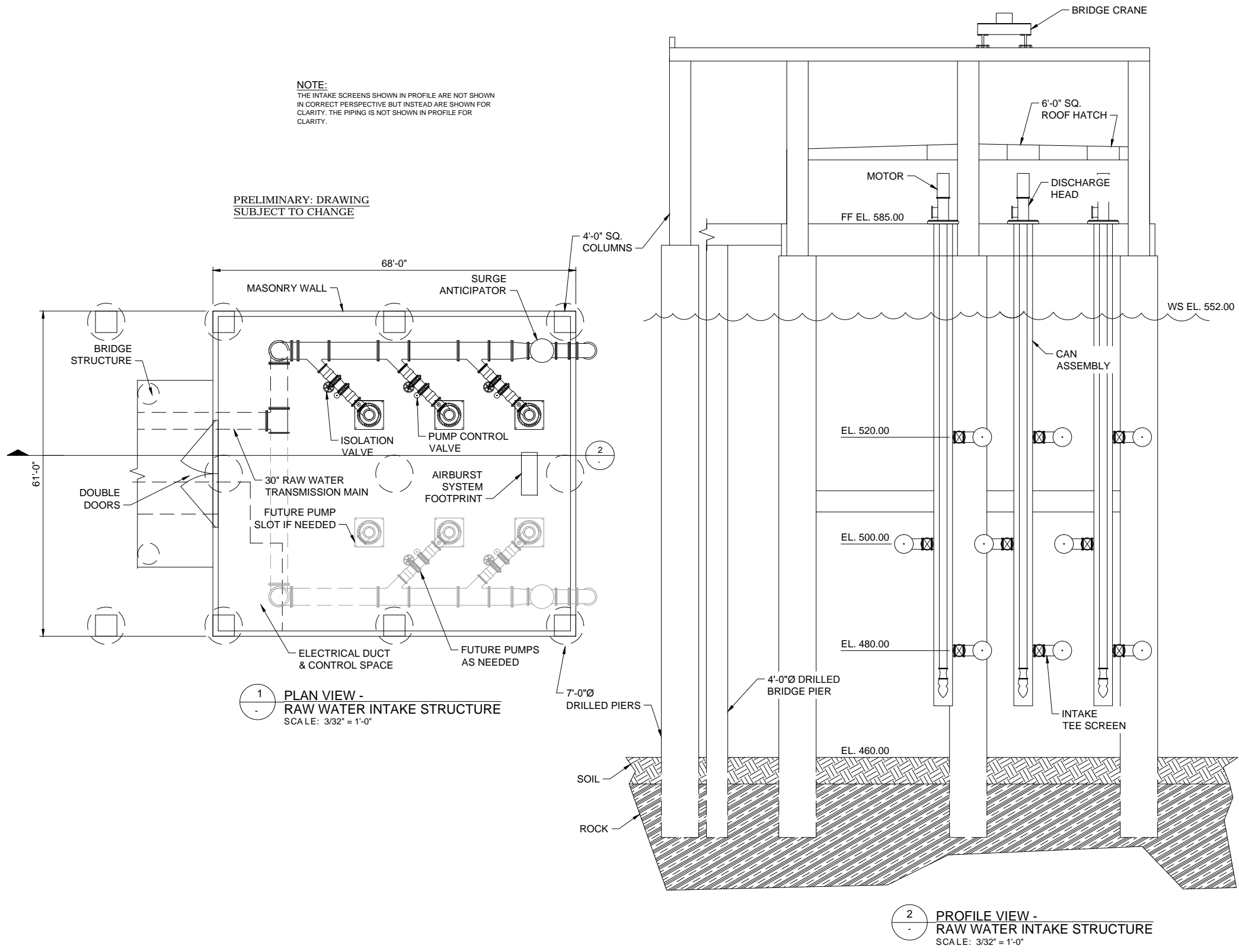
JOB NO.: 20W01380
DATE: SEPT. 2020
DESIGNED BY:
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DRAWING NUMBER
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REV	DATE	DESCRIPTION	BY

CITY OF MOUNTAIN HOME
MOUNTAIN HOME, ARKANSAS

WATER TREATMENT PLANT
SOURCE INTAKE STUDY

EXHIBIT A11-
PROPOSED
INTAKE
STRUCTURE
LAYOUT

JOB NO.: 14018120
DATE: AUGUST 2015
DESIGNED BY: KBR
DRAWN BY: RWW

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ORIGINAL DRAWING
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IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY.

DRAWING NUMBER

SHEET
NUMBER

Appendix B
Agency Coordination

Arkansas Department of Health



Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000

Governor Asa Hutchinson

José R. Romero MD, Interim Secretary of Health

Engineering Section, Slot 37 Ph (501) 661-2623 Fax (501) 661-2032
www.healthy.arkansas.gov/eng After Hours Emergency (501) 661-2136

September 22, 2020

Garver
4701 Northshore Drive
North Little Rock, AR 72118

RE: Proposed Mountain Home Intake
Mountain Home – Baxter County
PIN: 88735

Attn: Kirby Rowland, P.E.

The proposed new intake location for Mountain Home Waterworks has been reviewed and our office generally concurs with the proposed location and no potential negative environmental issues were identified.

Our office will require detailed plans and specifications for the proposed intake and any associated water system improvements be submitted to our Engineering Section for review/approval prior to construction. Documentation of utility ownership, easements, and/or cooperative protection agreements with the USACE will also be required for our review/approval.

When submitting correspondence pertaining to this project, please include our reference number 88735.

Sincerely,


Lance Jones, P.E.
Chief Engineer
Engineering Section

LJ:RT:tjj

CC: Mountain Home Waterworks [025]

Arkansas Department of Energy and Environment
Geology Survey



4701 Northshore Drive
North Little Rock, AR 72118
TEL 501.537.3259
www.GarverUSA.com

April 7, 2021

Randy Roberson
Project Officer - Environmental Review Coordinator
Division of Arkansas State Parks
1 Capitol Mall
Little Rock, AR 72201

Re: Lake Norfolk Water Intake
Mountain Home, Baxter County
Request for Information

Dear Mr. Roberson,

Early in the planning stages of a water source project, views from federal, state, and local agencies, organizations, and individuals are solicited. The special expertise of these groups can assist us with the early identification of environmental, economic, and social effects or concerns.

The United States Army Corps of Engineers is the lead agency for an Environmental Assessment (EA) study for the referenced project. Garver, has been selected to complete the EA on behalf of the City of Mountain Home and is requesting your input for this water intake project for the City of Mountain Home, Baxter County. The proposed project involves replacing the existing lake intake at Lake Norfolk, constructing a new raw water transmission main from the intake site to the water treatment plant, and to examine the possibility of improvements to the water treatment plant.

Please review the attached information and provide us with your views and comments within 30 days from your receipt of this letter. Replies should be addressed to Garver, co: Bill McAbee, 4701 Northshore Drive, North Little Rock, AR 72118, or at WCMcabee@GarverUSA.com. If you have any questions or need additional information, please contact Bill McAbee at the email address above or (501) 537-3259. Your assistance in this regard is appreciated.

Sincerely,

Bill McAbee
Arkansas Environmental and Planning Team Leader
Garver, LLC.

Enclosure:
Lake Norfolk Water Intake Study Area

<p>ADPHT-ORGP</p> <p>No apparent or immediate conflict with public outdoor recreation at this time. *</p> <p>Date: <u>14 April 2021</u></p> <p>Signature: <u>Randy Roberson</u></p> <p>Randy Roberson ADPHT-ORGP Project Officer One Capitol Mall, Suite 4B.215 Little Rock, AR 72201 501-682-6946 randy.roberson@arkansas.gov</p>

* See email re. Cranfield Park, USACE.



ARKANSAS

ENERGY & ENVIRONMENT

April 14, 2021

Bill McAbee
Garver
4701 Northshore Drive
North Little Rock, AR 72118

Dear Mr. McAbee:

This letter is a response to your request for comments on the plan replacement of the water intake structure for the City of Mountain Home on Lake Norfolk in Baxter County, Arkansas. The only comments I take make are on the bedrock geology of the proposed project.

The bedrock is composed of dolostone and chert of the Ordovician age Cotter Formation. This formation is therefore composed of carbonate rock and is therefore prone to karst terrain which is prone to produce caves , sinkholes and springs along with variable depths to bedrock over short horizontal distances.

If you have any questions about these comments please free to contact me at bill.prior@arkansas.gov or at 501-683-0117.

Regards,

A handwritten signature in blue ink that reads "William Lee Prior".

William Lee Prior
Geology Supervisor
Geological Survey
5301 Northshore Drive
North Little Rock, AR.72118

Arkansas Historic Preservation Program



Asa Hutchinson
Governor
Stacy Hurst
Secretary

May 24, 2021

Mr. Bill McAbee
Arkansas Environmental and Planning Team Leader
Garver, LLC
4701 Northshore Drive
North Little Rock, AR 72118

Re: Baxter County - Mountain Home
EA Scoping/Technical Assistance - COE
Proposed Undertaking - Lake Norfork Water Intake Project
AHPP Tracking Number 107785

Dear McAbee:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the records for archeological, architectural, and other historic resources within or proximal to the Study Area in Sections 13 and 24 of Township 20 North, Range 13 West and Section 19 of Township 20 North, Range 12 West in Baxter County, Arkansas. As described, the undertaking entails replacing the existing lake intake at Lake Norfork, constructing a new raw water transmission main from the intake to the extant treatment plant, and potentially making improvements at the treatment plant.

There is no record of a previous cultural resource investigation of most of the Study Area. We look forward to continuing consultation on the undertaking and receiving additional information and an effect finding from the Corps of Engineers.

Tribes that have expressed an interest in the area include the Cherokee Nation, the Delaware Nation, the Eastern Shawnee Tribe, the Osage Nation, the Quapaw Nation, and the Shawnee Tribe. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

If you have any questions, please contact Eric Mills of my staff at (501) 324-9784 or eric.mills@arkansas.gov.

Sincerely,

for
Scott Kaufman
Director, AHPP

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey

Arkansas Department of Energy and Environment
Division of Environmental Quality



ARKANSAS ENERGY & ENVIRONMENT

May 5, 2021

Bill McAbee
Arkansas Environmental and Planning Team Leader
Garver, LLC
Via email: WCMcabee@GarverUSA.com

RE: National Environmental Policy Act (NEPA) Comments Requested Regarding City of Mountain Home Lake Norfolk Water Intake Project

Dear Mr. McAbee:

The Division of Environmental Quality (DEQ) is pleased to comment on the study of a proposed water intake project for the City of Mountain Home. The Environmental Assessment considers replacing the existing lake intake at Lake Norfolk, constructing a new raw water transmission main from the intake site to the water treatment plant, and examining possible improvements at the water treatment plant.

From an environmental compliance standpoint, based on the information provided there are areas of concern. The City of Mountain Home must contact DEQ's Office of Water Quality (OWQ) to determine if a State Construction Permit is necessary, particularly if the possible improvements at the water treatment plant include changes to the plant's sedimentation basins for wastewater treatment, or any modifications to the wastewater treatment system in general, including changes to the wastewater design flow. If a State Construction Permit is required, a complete permit application must be submitted to DEQ a minimum of 120 days prior to the planned date of construction. The permit must be issued and effective prior to the beginning of construction. Arkansas Pollution Control and Ecology Commission (APC&EC) Rule 6.202 provides information about construction permits and is found online, https://www.adeq.state.ar.us/regsf/files/reg06_final_150918.pdf. Find information on these regulations on the DEQ website, www.adeq.state.ar.us/water/permits/npdes/individual/, or by contacting the OWQ, NPDES Permits Section, at 501.682.0915.

If a construction permit is applicable, the proposed project will need to meet the basic design criteria for wastewater treatment plants based on the latest edition of the "Recommended Standards for Sewage Works," published by the Great Lakes-Upper Mississippi Board of State Sanitary Engineers and known as the 10 States Standards.

Additionally, OWQ must be notified of any changes to the wastewater treatment process, such as changes in raw water sources, usage of aluminum-based coagulants, discharge of chlorinated water,

sedimentation basin retention time, or such changes that may require modifications to the water treatment plant's wastewater discharge general permit coverage under ARG640094.

Any hydrostatic testing occurring during the proposed project will require obtaining coverage under the NPDES General Permit ARG670000 for Hydrostatic Testing. Neither the ARG670000 nor the State Construction Permit authorizes any activity to be conducted in Waters of the State or Waters of the United States. Any work being conducted in Waters of the State requires a Short Term Activity Authorization (STAA) from DEQ in accordance with APC&EC Rule 2.305. A STAA is necessary for any in-stream activity that may cause an exceedance of applicable water quality standards, including, but not limited to: gravel removal, bridge or crossing repair/maintenance, bank stabilization, debris removal, culvert replacement, flood control projects, and stream relocation. For more information and forms visit <https://www.adeq.state.ar.us/water/planning/instream/> or call 501.682.0040.

Please note that, while the Office of Land Resources has no comment on the water intake, staff is unable to comment on the transmission line without a map of that portion of the project.

Lastly, if you have not already done so, the Arkansas Department of Health (ADH) must also be notified of this project and its details.

This letter is issued in reliance upon the statements and representations made in the submittal. DEQ has no responsibility for adequacy or proper functioning of the proposed project. Please contact the respective offices with any questions.

In the future, please address requests for input on environmental reviews to DEQ's Enterprise Services section. You may email requests for comment to EnterpriseServices@adeq.state.ar.us.

Sincerely,

A handwritten signature in black ink that reads "Julie Nicol". The signature is written in a cursive, flowing style.

Julie Nicol

Director of Enterprise Services, Division of Environmental Quality
5301 Northshore Drive, North Little Rock, AR 72118

JN: mlg

United States Department of Agriculture
Natural Resources Conservation Service

FARMLAND CONVERSION IMPACT RATING

PART I <i>(To be completed by Federal Agency)</i>					Date Of Land Evaluation Request 4/7/21				
Name of Project Lake Norfolk Study Area					Federal Agency Involved USACE				
Proposed Land Use Water Intake					County and State Baxter county, Arkansas				
PART II <i>(To be completed by NRCS)</i>					Date Request Received By NRCS 4/13/21			Person Completing Form: Rebecca Fox	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>				YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Acres Irrigated		Average Farm Size	
Major Crop(s)		Farmable Land In Govt. Jurisdiction Acres: %			Amount of Farmland As Defined in FPPA Acres: %				
Name of Land Evaluation System Used		Name of State or Local Site Assessment System			Date Land Evaluation Returned by NRCS				
PART III <i>(To be completed by Federal Agency)</i>					Alternative Site Rating				
					Site A	Site B	Site C	Site D	
A. Total Acres To Be Converted Directly									
B. Total Acres To Be Converted Indirectly									
C. Total Acres In Site					0				
PART IV <i>(To be completed by NRCS) Land Evaluation Information</i>									
A. Total Acres Prime And Unique Farmland									
B. Total Acres Statewide Important or Local Important Farmland									
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted									
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value									
PART V <i>(To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)</i>									
PART VI <i>(To be completed by Federal Agency) Site Assessment Criteria (Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>				Maximum Points	Site A	Site B	Site C	Site D	
1. Area In Non-urban Use				(15)					
2. Perimeter In Non-urban Use				(10)					
3. Percent Of Site Being Farmed				(20)					
4. Protection Provided By State and Local Government				(20)					
5. Distance From Urban Built-up Area				(15)					
6. Distance To Urban Support Services				(15)					
7. Size Of Present Farm Unit Compared To Average				(10)					
8. Creation Of Non-farmable Farmland				(10)					
9. Availability Of Farm Support Services				(5)					
10. On-Farm Investments				(20)					
11. Effects Of Conversion On Farm Support Services				(10)					
12. Compatibility With Existing Agricultural Use				(10)					
TOTAL SITE ASSESSMENT POINTS				160	0	0	0	0	
PART VII <i>(To be completed by Federal Agency)</i>									
Relative Value Of Farmland <i>(From Part V)</i>				100	0	0	0	0	
Total Site Assessment <i>(From Part VI above or local site assessment)</i>				160	0	0	0	0	
TOTAL POINTS <i>(Total of above 2 lines)</i>				260	0	0	0	0	
Site Selected:		Date Of Selection			Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>				
Reason For Selection:									
Name of Federal agency representative completing this form:								Date:	

(See Instructions on reverse side)

Form AD-1006 (03-02)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM *(For Federal Agency)*

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

United States Department of Agriculture
Forestry Division

From: [McAbee, William C.](#)
To: [Michel, Tracy L.](#)
Subject: FW: ArDOT Job Number 061300
Date: Monday, September 20, 2021 10:01:33 AM
Attachments: [image001.png](#)

From: Joe Fox <Joe.Fox@agriculture.arkansas.gov>
Sent: Thursday, April 22, 2021 8:57 AM
To: McAbee, William C. <WCMcAbee@GarverUSA.com>
Subject: ArDOT Job Number 061300

Dear Mr. McAbee:

The Forestry Division of the Arkansas Department of Agriculture has no comment on nor objection to this project.

Sincerely:
Joe S. Fox

Joe S. Fox

State Forester

Arkansas Department of Agriculture
Forestry Division
#1 Natural Resources Drive, Little Rock, AR 72205
(501) 580-5479 | agriculture.arkansas.gov
Joe.fox@agriculture.arkansas.gov



FORESTRY DIVISION

United States Department of Agriculture
Natural Resources Division

From: [McAbee, William C.](#)
To: [Michel, Tracy L.](#)
Subject: FW: Lake Norfolk Water Intake & Main Street Viaduct North Little Rock Project Reviews
Date: Tuesday, May 4, 2021 7:52:10 AM
Attachments: [image001.png](#)

For the file.

Bill McAbee
Garver
501-537-3259

From: Ken Brazil <Ken.Brazil@arkansas.gov>
Sent: Tuesday, May 4, 2021 7:15 AM
To: McAbee, William C. <WCMcAbee@GarverUSA.com>
Subject: Lake Norfolk Water Intake & Main Street Viaduct North Little Rock Project Reviews

Bill,
After review of these project proposals, we identified no environmental concerns at this time. A more detailed review will accompany any future regulatory processes associated with these projects. Let me know if you have any questions.

Thanks,
ken

Kenneth W. Brazil, P.E.
Engineer Supervisor, Water Planning

NATURAL RESOURCES DIVISION



ARKANSAS DEPARTMENT OF AGRICULTURE
Natural Resources Division
10421 W Markham St.
Little Rock, AR 72205
ken.brazil@arkansas.gov

Arkansas Natural Heritage Commission



Asa Hutchinson
Governor
Stacy Hurst
Secretary

Date: June 15, 2021
Subject: Lake Norfork Water Intake
Mountain Home, Baxter County
ANHC No.: P-CF..-21-049

Mr. Bill McAbee
Garver
4701 Northshore Drive
North Little Rock, AR 72118

Dear Mr. McAbee:

Staff members of the Arkansas Natural Heritage Commission have reviewed the information you submitted on the proposed Lake Norfork water intake structure. The project involves replacing the existing lake intake at Lake Norfork, constructing a new raw water transmission main from the intake site to the water treatment plant, and examining the possibility of improvements to the treatment plant.

Our records indicate that sensitive glade habitat is present in this area (please see attached map). Glades are an important and declining habitat type in Arkansas. They occur where the bedrock is at or near the surface. They are characterized by areas of bare rock, expanses with grasses and forbs, and, where the soil is deeper, cedar trees. In the past, these areas were subject to wildfires, which maintained an open character and reduced the number of cedar trees. Glades are generally more biologically diverse than surrounding forests, support rare species, and provide important wildlife habitat. You may find the GIS layer depicting glades in Arkansas and Missouri helpful in the review of this project. It is available on the following website:

<https://gcpolcc.databasin.org/datasets/a817fa247dd3440e814282f3063c51d0>

The limestone bluffs around the lake are also known to support sensitive plant species. Three plant species of state conservation concern have been recorded from the limestone bluffs at the Cranfield Recreation area (please refer to attached map):

Delphinium treleasei, Trelease's larkspur
Pedimelum esculentum, large Indian-breadroot
Scutellaria bushii, Bush's skullcap

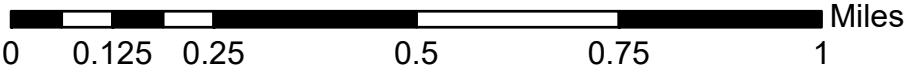
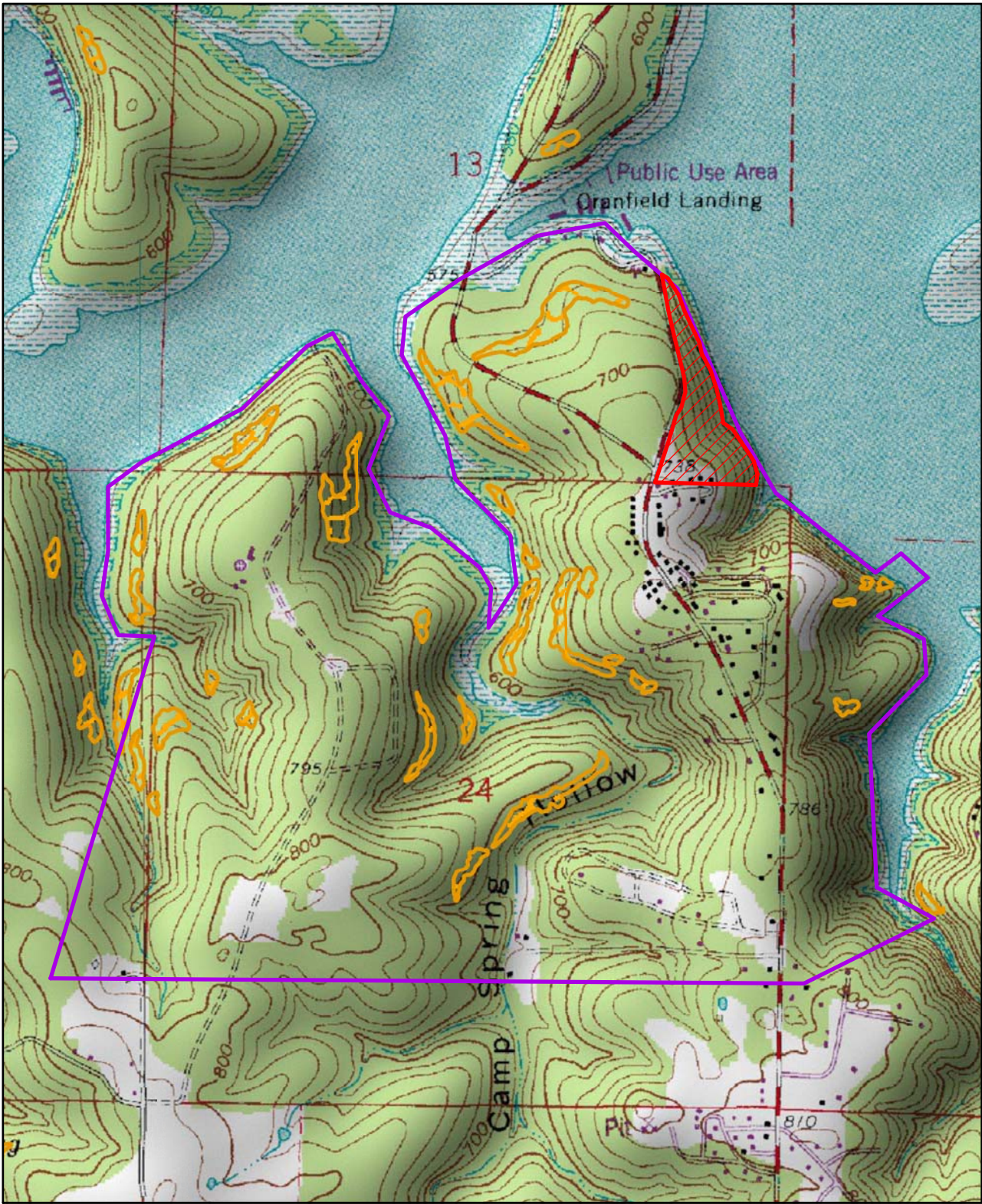
We recommend efforts be made to minimize impacts to glade and bluff habitat.




The opportunity to comment is appreciated.

Sincerely,

Cindy Osborne
Data Manager/Environmental Review Coordinator
Enclosure: Map

Arkansas Natural Heritage Commission
Division of Arkansas Heritage
Arkansas Department of Parks, Heritage and Tourism
Lake Norfork, Water Intake Study Area



-  Sensitive Plant Species
-  Glades
-  Project Area

United States Fish and Wildlife



4701 Northshore Drive
North Little Rock, AR 72118
TEL 501.537.3259

www.GarverUSA.com

April 7, 2021

Melvin Tobin
Field Supervisor
U.S. Fish and Wildlife Supervisor
110 S. Amity Road, Suite 300
Conway, Arkansas 72032

Re: Lake Norfolk Water Intake
Mountain Home, Baxter County
Request for Information

Dear Mr. Tobin,

Early in the planning stages of a water source project, views from federal, state, and local agencies, organizations, and individuals are solicited. The special expertise of these groups can assist us with the early identification of environmental, economic, and social effects or concerns.

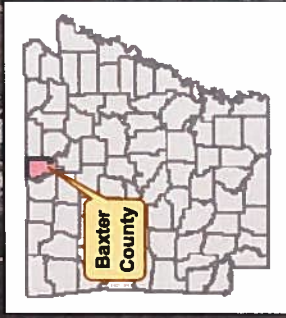
The United States Army Corps of Engineers is the lead agency for an Environmental Assessment (EA) study for the referenced project. Garver, has been selected to complete the EA on behalf of the City of Mountain Home and is requesting your input for this water intake project for the City of Mountain Home, Baxter County. The proposed project involves replacing the existing lake intake at Lake Norfolk, constructing a new raw water transmission main from the intake site to the water treatment plant, and to examine the possibility of improvements to the water treatment plant.


Please review the attached information and provide us with your views and comments within 30 days from your receipt of this letter. Replies should be addressed to Garver, co: Bill McAbee, 4701 Northshore Drive, North Little Rock, AR 72118, or at WCMcabee@GarverUSA.com. If you have any questions or need additional information, please contact Bill McAbee at the email address above or (501) 537-3259. Your assistance in this regard is appreciated.

Sincerely,

Bill McAbee
Arkansas Environmental and Planning Team Leader
Garver, LLC.

Enclosure:
Lake Norfolk Water Intake Study Area



	<div><div></div>Study Area</div>	<p>STUDY AREA</p> <p>Mountain Home-Norfork Lake Water Intake Mountain Home, Baxter County, Arkansas</p> <p>ARDOT 2017 Aerial Image</p>	<div><div>07501,500</div><div>Feet</div></div> <div><div>Start: Latitude: 36.395484° Longitude: -92.329953° End: Latitude: 36.395071° Longitude: -92.311488°</div><div>STUDY AREA</div></div>
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United States Department of the Interior



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

In Reply Refer To:

April 29, 2021

Consultation Code: 04ER1000-2021-SLI-0949

Event Code: 04ER1000-2021-E-02614

Project Name: Lake Norfolk Water Intake

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

To Whom It May Concern:

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

If you determine that this project will have no effect on listed species and their habitat in any way, then you have completed Section 7 consultation with the Service and may use this letter in your project file or application.

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

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

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

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

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

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

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

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

completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

Arkansas Ecological Services Field Office

110 South Amity Suite 300

Conway, AR 72032-8975

(501) 513-4470

Project Summary

Consultation Code: 04ER1000-2021-SLI-0949

Event Code: 04ER1000-2021-E-02614

Project Name: Lake Norfork Water Intake

Project Type: WATER SUPPLY / DELIVERY

Project Description: Replacement of the existing lake intake at Lake Norfork and the construction of a new water transmission main from the intake to the existing water treatment plant. An access road is also proposed near the intake.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@36.394756099999995,-92.32295377943929,14z>



Counties: Baxter County, Arkansas

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Ozark Big-eared Bat <i>Corynorhinus (=Plecotus) townsendii ingens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7245	Endangered

Birds

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Flowering Plants

NAME	STATUS
Missouri Bladderpod <i>Physaria filiformis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5361	Threatened

Critical habitats

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



United States Department of the Interior



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

IPaC Record Locator: 236-101714629

July 02, 2021

Subject: Consistency letter for 'Lake Norfolk Water Intake' for specified federally threatened and endangered species and designated critical habitat that may occur in your proposed project area consistent with the Arkansas Determination Key for project review and guidance for federally listed species (Arkansas Dkey).

Dear Tracy Michel:

The U.S. Fish and Wildlife Service (Service) received on **July 02, 2021** your effect determination(s) for the 'Lake Norfolk Water Intake' (the Action) using the Arkansas DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance in the Service's Arkansas DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Eastern Black Rail (<i>Laterallus jamaicensis</i> ssp. <i>jamaicensis</i>)	Threatened	NLAA
Gray Bat (<i>Myotis grisescens</i>)	Endangered	NLAA
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	May affect
Missouri Bladderpod (<i>Physaria filiformis</i>)	Threatened	NLAA
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Threatened	May affect
Ozark Big-eared Bat (<i>Corynorhinus</i> (= <i>Plecotus</i>) <i>townsendii ingens</i>)	Endangered	May affect
Piping Plover (<i>Charadrius melodus</i>)	Threatened	No effect
Red Knot (<i>Calidris canutus rufa</i>)	Threatened	No effect

Status

The proposed project may affect the Northern Long-eared Bat. However, this project complies with the final 4(d) rule with incidental take covered by the U.S. Fish and Wildlife Service's

January 5, 2016, Intra-Service Programmatic Biological Opinion on the final 4(d) rule for the NLEB addressing “Activities Excepted from Take Prohibitions. No further consultation is required for the proposed project for this species.

The Service recommends that your agency contact the Arkansas Ecological Services Field Office or re-evaluate this key in IPaC if: 1) the scope, timing, duration, or location of the proposed project changes, 2) new information reveals the action may affect listed species or designated critical habitat; 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Arkansas Ecological Services Field Office should take place before project changes are final or resources committed.

Bald and Golden Eagle Protection Act: The following resources are provided to project proponents and consulting agencies as additional information. Bald and golden eagles are not included in this section 7(a)(2) consultation and this information does not constitute a determination of effects by the Service.

The Service developed the National Bald Eagle Management Guidelines to advise landowners, land managers, and others who share public and private lands with Bald Eagles when and under what circumstances the protective provisions of the BGEPA may apply to their activities. The guidelines should be consulted prior to conducting new or intermittent activity near an eagle nest. This document may be downloaded from the following site: <https://www.fws.gov/southeast/our-services/permits/eagles/>

To determine if your proposed activity is likely to take or disturb Bald Eagles, complete our step-by-step online self-certification process, which is located at <https://www.fws.gov/southeast/our-services/eagle-technical-assistance/>.

If the recommendations detailed in the National Bald Eagle Management Guidelines cannot be followed, you may apply for a permit to authorize removal or relocation of an eagle nest in certain instances. The application form is located at <http://www.fws.gov/forms/3-200-72.pdf>.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Lake Norfolk Water Intake

2. Description

The following description was provided for the project 'Lake Norfolk Water Intake':

Replacement of the existing lake intake at Lake Norfolk and the construction of a new water transmission main from the intake to the existing water treatment plant.
An access road is also proposed near the intake.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@36.394756099999995,-92.32295377943929,14z>



Species Protection Measures

Gray Bat

<https://www.fws.gov/southeast/pdf/species-protective-measures/gray-bat.pdf>

Qualification Interview

1. Have you made an effects determination of "no effect" for all species in the area of the project? A "no effect" determination means the project will have no beneficial effect, no short-term adverse effects, and no long-term adverse effects on any of the species on the IPaC-generated species list for the proposed project or those species habitat. A project with effects that cannot be meaningfully measured, detected or evaluated, effects that are extremely unlikely to occur, or entirely beneficial effects should not have a "no effect" determination. (If unsure, select "No").

No

2. Is the action authorized, funded, or being carried out by a Federal agency?

Yes

3. Are you the the action agency or the designated non-federal representative?

Yes

4. Choose the agency you represent in this consultation with the U.S. Fish and Wildlife Service:

b. U.S. Army Corps of Engineers

5. [Semantic] Does the project intersect designated critical habitat for the Leopard Darter?

Automatically answered

No

6. [Semantic] Does the project intersect designated critical habitat for the Neosho Mucket?

Automatically answered

No

7. [Semantic] Does the project intersect designated critical habitat for Yellowcheek Darter?

Automatically answered

No

8. [Semantic] Does the project intersect designated critical habitat for Rabbitsfoot?

Automatically answered

No

9. [Semantic] Does the project intersect the American burying beetle consultation area?

Automatically answered

No

10. [Semantic] Does the project intersect the red-cockaded woodpecker AOI?

Automatically answered

No

11. [Semantic] Does the project intersect the Eastern black rail AOI?

Automatically answered

Yes

12. Have you made a "no effect" determination for Eastern Black Rail? Eastern Black Rails are small, secretive marsh birds that may occur in freshwater wetlands in Arkansas.
No
13. Will the project affect sand and gravel areas or shorelines along rivers, lakes, or reservoirs?
Yes
14. Will any part of the project take place between March 15 and May 15 OR between July 15 and October 1?
No
15. [Semantic] Does the project intersect the red knot AOI?
Automatically answered
Yes
16. Have you made a "no effect" determination for Red Knot? Red knots may be transiently found feeding along shorelines, marshes, or flooded fields in Arkansas during migration periods.
No
17. [Semantic (same answer as "8.1.3")] Will the project affect sand and gravel areas or shorelines along rivers, lakes, or reservoirs?
Automatically answered
Yes
18. [Semantic (same answer as "8.3")] Will any part of the project take place between March 15 and May 15 OR between July 15 and October 1?
Automatically answered
No
19. [Semantic] Does the project intersect the Piping Plover AOI?
Automatically answered
Yes
20. Have you made a "no effect" determination for Piping Plover? Piping Plovers may be transiently found feeding along shorelines, marshes, or flooded fields in Arkansas during migration periods.
No
21. [Semantic (same answer as "8.1.3 or 9.3")] Will the project affect sand and gravel areas or shorelines along rivers, lakes, or reservoirs?
Automatically answered
Yes
22. [Semantic (same answer as "8.3" or "9.9")] Will any part of the project take place between March 15 and May 15 OR between July 15 and October 1?
Automatically answered
No
-

23. [Semantic] Does the project intersect the Whooping Crane AOI?
Automatically answered
No
24. [Semantic] Does the project intersect the interior least tern AOI?
Automatically answered
No
25. [Semantic] Does the project intersect the Gray Bat AOI?
Automatically answered
Yes
26. Have you made a "no effect" determination for Gray Bat?
No
27. Are there any caves within 0.5 mile of the project area?
No
28. Does the project occur in a subdivision or urban area (housing on 0.5 acres or less and/or structures present)?
No
29. Does the project involve blasting of any type or tree removal of greater than 10 acres?
Yes
30. Does the project involve blasting of any type?
No
31. [Semantic] Does the project intersect the Gray Bat 1-mile buffer?
Automatically answered
No
32. Will the activity affect the roosting environment of cave or karst feature-dwelling bats (e.g., prescribed fire where smoke may enter hibernacula, filling of karst feature with material or liquid of any type, change in the structure or opening of the cave or feature)?
No
33. Will the project proponents follow all applicable species [protective measures](#) for Gray Bats?
Yes
34. [Semantic] Does the project intersect the Ozark Big-eared Bat AOI?
Automatically answered
Yes
35. Have you made a "no effect" determination for Ozark Big-eared Bat?
No
36. [Sematic (same answer as question "13.2")] Is there a cave known on the site or within 0.5 mile of the project area?
Automatically answered
No
-

37. [Sematic (same answer as question "13.2.1")] Does the project occur in a subdivision or urban area?
Automatically answered
No
38. [Sematic (same answer as question "13.3")] Does the project involve blasting of any type or tree removal of greater than 10 acres?
Automatically answered
Yes
39. [Semantic] Does the project intersect the Indiana bat AOI?
Automatically answered
Yes
40. Have you made a "no effect" determination for Indiana Bat?
No
41. [Sematic (same answer as question "13.2" or "14.4")] Are there any caves within 0.5 mile of the project area?
Automatically answered
No
42. [Sematic (same answer as question "13.2.1" or "14.7")] Does the project occur in a subdivision or urban area?
Automatically answered
No
43. [Sematic (same answer as question "13.3" or "14.10")] Does the project involve blasting of any type or tree removal of greater than 10 acres?
Automatically answered
Yes
44. [Semantic] Does the project intersect the Northern Long-eared bat AOI?
Automatically answered
Yes
45. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")
No
46. Will your activity purposefully Take northern long-eared bats?
No
47. Is the project action area located within 0.25 miles of a known northern long-eared bat hibernaculum?
Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency (Semantic: Edge In Answer Path)
Automatically answered
No
-

48. Is the project action area located within 150 feet of a known occupied northern long-eared bat maternity roost tree?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency (Semantic: Edge In Answer Path)

Automatically answered

No

49. [Semantic] Does the project intersect the Benton County Cave Crayfish AOI?

Automatically answered

No

50. [Semantic] Does the project intersect the Hell Creek Cave Crayfish AOI?

Automatically answered

No

51. [Semantic] Does the project intersect the Ozark cavefish AOI?

Automatically answered

No

52. [Semantic] Does the project intersect the Missouri bladderpod AOI?

Automatically answered

Yes

53. Is the proposed project in or near an open glade (an area with thin, poor soil and bedrock close to the surface or in rocky outcrops) or in shale barrens (Ouachita Mountains ecoregion)?

Yes

54. Will project proponents implement [Species Protective Measures for Missouri Bladderpod?](#)

Yes

55. [Semantic] Does the project intersect the Geocarpon AOI?

Automatically answered

No

56. [Semantic] Does the project intersect the running buffalo clover AOI?

Automatically answered

No

57. [Semantic] Does the project intersect the Pondberry AOI?

Automatically answered

No

Project Questionnaire

1. **If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.**
 1. Estimated total acres of forest conversion:
13
 2. If known, estimated acres of forest conversion from April 1 to October 31
.
 3. If known, estimated acres of forest conversion from June 1 to July 31
.
 4. **If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.**
 4. Estimated total acres of timber harvest
0
 5. If known, estimated acres of timber harvest from April 1 to October 31
0
 6. If known, estimated acres of timber harvest from June 1 to July 31
0
 7. **If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.**
 7. Estimated total acres of prescribed fire
0
 8. If known, estimated acres of prescribed fire from April 1 to October 31
0
 9. If known, estimated acres of prescribed fire from June 1 to July 31
0
 10. **If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.**
 10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?
0
-



IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
110 S. Amity Road, Suite 300
Conway, Arkansas 72032
Tel.: 501/513-4470 Fax: 501/513-4480



July 29, 2021

Tracy Michel
Garver
4300 South J.B. Hunt Drive
Suite 240
Rogers, Arkansas 72758

Dear Ms. Michel:

The U.S. Fish and Wildlife Service (Service) has reviewed the information supplied in your July 2, 2021, Consistency Letter for "Lake Norfolk Water Intake." Our comments are submitted in accordance with the Endangered Species Act (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.; ESA) and the Service's January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat (NLEB PBO).

The U.S. Army Corps of Engineers (CORPS) determined that this project complies with the activities analyzed in the Service's NLEB PBO. There are no known hibernacula or roost trees within the project area. Therefore, NLEB take for these projects is excepted from incidental take prohibitions under the final 4(d) rule for NLEB. The Service concurs that this project may affect NLEB, but there are no effects beyond those previously disclosed in the final 4(d) rule NLEB PBO and this project therefore complies with the final 4(d) rule for NLEB.

The Service concurs with the determination of "may affect, not likely to adversely affect" for Gray Bat (*Myotis grisescens*), Indiana Bat (*Myotis sodalis*), Missouri Bladderpod (*Physaria filiformis*), Eastern Black Rail (*Laterallus jamaicensis spp. Jamaicensis*), and Ozark Big-eared Bat (*Corynorhinus townsendii ingens*). As suitable habitat for Red Knot (*Calidris canutus rufa*) and Piping Plover (*Charadrius melodus*) does not occur within the project area, the CORPS has met consultation requirements by informing the Service of their determination of "no effect" for these species.

We appreciate your interest in the conservation of threatened and endangered species. If you have any questions, please contact Jason Phillips at (870) 503-1101.

Sincerely,

Melvin L. Tobin
Field Supervisor

Project File

Read File

Filename: D:\JasonsFolder\T-E Species\Section 7 Consultations\Lake Norfolk Water
Intake\LakeNorfolkWaterIntake_USFWS_concurrence_final.pdf

State Historic Preservation Officer



Asa Hutchinson
Governor
Stacy Hurst
Secretary

June 30, 2021

Mr. Allen D. Wilson
District Archaeologist
Department of the Army
Little Rock District, Corps of Engineers
Post Office Box 867
Little Rock, AR 72203-0867

RE: Baxter County – Conway
Section 106 Review – COE
Proposed Undertaking – Proposed Water Intake Pipeline near Lake Norfolk
Cultural Resources Report: *A Cultural Resources Survey of the Proposed Lake Norfolk Water Intake Project in Baxter County, Arkansas*
Flat Earth Archeology Project Report Number – 2020-30
AHPP Tracking Number 107785.01

Dear Mr. Beers:

The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the cultural resources survey report for the above-referenced project. The proposed undertaking entails installing a water intake pipeline near Lake Norfolk in Section 19, Township 20 North, Range 12 West and Section 24, Township 20 North, Range 13 West in Baxter County, Arkansas. The direct area of potential effects (APE) includes an approximately 2,697 meters long area (1.68 miles). Seventy-one shovel tests associated with the direct APE proved negative for cultural materials. Two known archeological sites, 3BA0177 and 3BA0178 are located to the west near the project area, but no evidence of these sites was found during the survey.

Based on the provided information, the AHPP concurs with the finding of **no historic properties affected pursuant to 36 CFR § 800.4(d)(1)** for the proposed undertaking.

Tribes that have expressed an interest in the area include the Cherokee Nation, the Delaware Nation, the Eastern Shawnee Tribe, the Osage Nation, the Quapaw Nation, and the Shawnee Tribe. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

Thank you for the opportunity to review this undertaking cultural resources survey report. Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, please call Jessica Cogburn of my staff at 501-324-9357 or email jessica.cogburn@arkansas.gov.

Sincerely,

Scott Kaufman
Director, AHPP

cc: Dr. Melissa Zabecki, Arkansas Archeological Survey

Appendix C

Noise Study

HMMH

77 South Bedford Street
Burlington, Massachusetts 01803
781.229.0707
www.hmmh.com

TECHNICAL MEMORANDUM

To: Ryan Mountain PWS
Kirby Rowland, PE
Garver

From: Scott Noel AICP INCE, Tara Cruz

Date: September 6, 2021

Subject: Relocated Water Pump Station Noise Study at Norfolk Lake Arkansas

Reference: HMMH Project Number 312660.000

Summary of Findings

The City of Mountain Home, Arkansas proposes to relocate and modernize their water pumping station on Norfolk Laker. The modernized pump station would be located approximately 1-mile to the southeast. New pumps at the station would have National Electrical Manufacturer Ratings (NEMA) ranging from 360 to 440 and operate with a revolutions per minute (RPM) of 1800. The new pumps would be housed in an building/enclosure comprised of acoustically treated walls that would ensure that the pump sound power level (Lw) is 80 A-weighted decibels (dBA), which approximates how humans respond to sounds, at the exterior of the building/enclosure.

Harris Miller Miller & Hanson Inc. (HMMH) was retained by Garver to conduct an environmental noise assessment for the operation of the new pump station (the "Project"). We evaluated facility noise levels relative to existing sound levels at noise sensitive receptors (i.e., residences). Additionally, the City of Mountain Home Municipal Code defines a "Noise Disturbance" as sounds that:

- a. Endangers or injures the safety or health of humans or animals; or
- b. Annoys or disturbs the peace within 150 feet of the source of the noise; or
- c. Endangers or injures personal or real property

Additionally, the City stipulates that plainly audible sounds are "Any sound or noise, not necessarily clear or understandable as spoken language or song lyrics, bass reverberations or any other unidentifiable sound that can be heard from 150 feet. (Ord. No. 2007-46, Sec. 1.)". While audibility is sometimes difficult to interpret without monitoring of the source itself, we assume that pump station noise levels would noticeable if they increase existing noise levels by 3 decibels (dB) or more.

Existing noise levels were estimated using the methods outlined in the United States Department of Transportation Federal Transit Administration Noise and Vibration Impact Assessment Manual (FTA 2018). For the noise sensitive receptors this estimate indicates that existing noise levels would be 35 dBA day-night sound level (Ldn), 35 dBA daytime equivalent level (Leq), and 25 dBA Leq at night.

HMMH used the ISO-9613 standard for sound propagation with the SoundPLAN® computer noise model to compute operational noise levels from the proposed Project at noise-sensitive receptors located to the west in a residential development along Cranfield Road and to the east in a residential development along Shorecrest Drive. On an Ldn basis existing sound levels are predicted to increase by up to 0.7 dB with the project. Daytime Leq would increase by up to 0.5 dB and nighttime Leq would increase by up to 1.5 dB. Since all these predicted increases are less than 3 dB we do not expect the sound of the new pump station to be noticeable at the noise sensitive receptors closest to the project; therefore, the project would be in compliance with the City's noise code and no mitigation is needed.

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1. Introduction

The City of Mountain Home, Arkansas proposes to relocate and modernize their water pumping station on Norfolk Laker. The modernized pump station would be located approximately 1-mile to the southeast. New pumps at the station would have National Electrical Manufacturer Ratings (NEMA) ranging from 360 to 440 and operate with a revolutions per minute (RPM) of 1800. There is some concern about sound levels from the new pump station being out of compliance with local noise regulations. This technical memo summarizes the noise analysis of the new pump station. Figure 1 is a map of the location of the existing and new pump stations relative to noise sensitive receptors (i.e., residences). Appendix A provides supplemental information about the fundamentals of acoustics.

2. Applicable Noise Ordinances and Regulations

The project is in unincorporated Baxter County, Arkansas and is owned by the City of Mountain Home, Arkansas. Baxter County does not have a noise ordinance or regulate noise via other mechanisms such as their County Code¹. Since the pump station is owned and operated by the City the noise regulations in the City's code are used in this analysis to identify potential impacts. Specifically, the City promulgates noise regulations via their Municipal Code² and defines a "Noise Disturbance" as one that:

- a. Endangers or injures the safety or health of humans or animals; or
- b. Annoys or disturbs the peace within 150 feet of the source of the noise; or
- c. Endangers or injures personal or real property

Additionally, the City stipulates that plainly audible sounds are "Any sound or noise, not necessarily clear or understandable as spoken language or song lyrics, bass reverberations or any other unidentifiable sound that can be heard from 150 feet. (Ord. No. 2007-46, Sec. 1.)". While audibility is sometimes difficult to interpret without monitoring of the source itself, we assume that pump station noise levels would noticeable if they increase existing noise levels by 3 decibels (dB) or more.

3. Existing Noise Conditions

HMMH estimated existing noise levels using the approaches described in the FTA's Noise and Vibration Impact Assessment Manual³. In lieu of conducting sound level measurements HMMH used the simplified procedure described in Chapter 4 of the manual to estimate the existing noise levels at the noise sensitive receptors near the new pump station. This procedure took into account distance from major transportation noise sources (i.e., major roadways, railroads) and population density to estimate existing noise. There are no major roadways or railways close enough to the project to be used to estimate sound levels; therefore, the estimate relies upon population density. According to the United States Census Bureau⁴ the population density of the area is 55 people per square mile. The FTA Manual identifies that existing sound levels for areas with population densities of less than 100 people per square mile is 35 dBA Ldn, 35 dBA Leq in the daytime, and 25 dBA Leq at night.

¹ See Section H of the Baxter County Sherriff's FAQ here:

https://www.baxtercountysheriff.com/e_newsletter_view.php?id=10

² Available at: https://www.cityofmountainhome.com/plugins/show_image.php?id=501

³ Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

⁴ Available at: <https://www.census.gov/library/visualizations/2021/geo/demographicmapviewer.html>

Figure 1. Pump Station Locations and Noise Sensitive Receptors



4. Predicted Project Noise Levels

This section describes the noise prediction model, summarizes the input to the model, and presents the predicted operational noise levels and the results of the assessment.

4.1 Noise Prediction Model

The SoundPLAN® computer noise model⁵ was used for computing operational noise levels from the project to noise-sensitive receptors located to the west and east. An industry standard, SoundPLAN® was developed by Braunstein + Berndt GmbH to provide estimates of sound levels at distances from specific noise sources taking into account the effects of terrain features including relative elevations of noise sources, receivers, and intervening objects (buildings, hills, trees), and ground effects due to areas of hard ground (pavement, water) and soft ground (grass, field, forest).

The sound propagation model within SoundPLAN that was used for this study was ISO 9613-2.⁶ This international standard propagation model is used nearly universally in the U.S. for environmental noise studies, due to its conservative propagation equations. ISO 9613-2 uses “worst-case” downwind propagation conditions in all directions, and accounts for variations in terrain and the effects of ground type.



4.2 Noise Model Input

As input, SoundPLAN incorporated a geometric model of the study area and reference noise levels for the three pumps at the new pump station. HMMH developed a three-dimensional geometric model of the study area from aerial photography and elevation information obtained from the United States Geological Survey⁷.

The three pumps at the new pump station were modeled at a height of 20 feet, the assumed height of the roof of the building. Each pump is assumed to have a sound power (L_w) of 80 dBA, which is consistent with the manufacture’s specifications for pumps located in acoustic enclosures. The building that the pumps would be housed in is consistent with the acoustic enclosure identified by the manufacture as it would be lined with acoustic panels to absorb noise from the operating pumps. Additionally, we included a 3 dB uncertainty value. The modeling conservatively assumes that the pumps would operate 24 hours per day 7 days per week year-round, although the pumps would operate less at times depending on demand by the City and users of water from the lake.

4.3 Presentation of Results: Overall Levels

Table 1 summarizes the computed A-weighted noise levels due to the new pump station at closest noise sensitive receptors, which are two residential areas located to the east and west of the new pump station. One residential development is to the east along Shorecrest Drive and another is to the west located along Canfield Road near Clarton Resort. The results demonstrate that the project would be in compliance with the City’s code; therefore, no additional mitigation measures are needed.

⁵ SoundPLAN® Version 8.2 was used for the computations. Documentation provided in SoundPLAN® User’s Manual, Braunstein + Berndt GmbH, 2021. U.S. sales and support services are available via Navcon Engineering Network, Fullerton, CA (<http://navcon.com/www/sumpage/software/soundplan>)

⁶ International Organization for Standardization (ISO), International Standard ISO 9613-2, “Acoustics – Attenuation of Sound during Propagation Outdoors”, Part 2: General Method of Calculation, 1996-12-15.

⁷ Available at: <https://apps.nationalmap.gov/downloader/#/>

Table 1. Existing Noise Levels and Predicted Project Noise Levels

Receptor ID	Existing (dBA)			Project Only (dBA)*			Project + Existing (dB)**			Change (dB)		
	Ldn	Daytime Leq	Nighttime Leq	Ldn	Daytime Leq	Nighttime Leq	Ldn	Daytime Leq	Nighttime Leq	Ldn	Daytime Leq	Nighttime Leq
R01	35	35	25	8.9	2.5	2.5	35.0	35.0	25.0	0.0	0.0	0.0
R02	35	35	25	16.4	10	10	35.1	35.0	25.1	0.1	0.0	0.1
R03	35	35	25	19.1	12.7	12.7	35.1	35.0	25.2	0.1	0.0	0.2
R04	35	35	25	25.9	19.5	19.5	35.5	35.1	26.1	0.5	0.1	1.1
R05	35	35	25	10.7	4.3	4.3	35.0	35.0	25.0	0.0	0.0	0.0
R06	35	35	25	10.3	3.9	3.9	35.0	35.0	25.0	0.0	0.0	0.0
R07	35	35	25	15.6	9.2	9.2	35.0	35.0	25.1	0.0	0.0	0.1
R08	35	35	25	24.6	18.2	18.2	35.4	35.1	25.8	0.4	0.1	0.8
R09	35	35	25	24.4	18	18	35.4	35.1	25.8	0.4	0.1	0.8
R10	35	35	25	15.2	8.8	8.8	35.0	35.0	25.1	0.0	0.0	0.1
R11	35	35	25	27.5	21.1	21.1	35.7	35.2	26.5	0.7	0.2	1.5
R12	35	35	25	26.2	19.8	19.8	35.5	35.1	26.1	0.5	0.1	1.1
R13	35	35	25	21.5	15.1	15.1	35.2	35.0	25.4	0.2	0.0	0.4

Source: HMMH, 2019.

Notes:

*Includes 3 dB uncertainty factor.

**Logarithmic addition.



5. Conclusions

Under the assumptions stated in this memo, predicted noise levels from the new pump station are expected to be in compliance with the City's code. This is based on conservative modeling analysis that indicates that the biggest increase in noise levels would be at night of 1.5 dB and at one noise sensitive receptor. All other noise sensitive receptors would experience lower increase in project noise. No additional mitigation measures are required.



APPENDIX A. FUNDAMENTALS OF ACOUSTICS

This appendix describes the noise terminology and metrics used in this report.

Decibels (dB), Frequency and the A-weighted Sound Level (dBA)

Loudness is a subjective quantity that enables a listener to order the magnitude of different sounds on a scale from soft to loud. Although the perceived loudness of a sound is based somewhat on its frequency and duration, chiefly it depends upon the sound pressure level. Sound pressure level is a measure of the sound pressure at a point relative to a standard reference value; sound pressure level is always expressed in decibels (dB).

Decibels are logarithmic quantities, so combining decibels is unlike common arithmetic. For example, if two sound sources each produce 100 dB operating individually and they are then operated together, they produce 103 dB. Each doubling of the number of sources produces another three decibels of noise. A tenfold increase in the number of sources makes the sound pressure level go up 10 dB, and a hundredfold increase makes the level go up 20 dB. If two sources differ in sound pressure level by more than 10 decibels, then operating together, the total level will approximately equal the level of the louder source; the quieter source doesn't contribute significantly to the total.

People hear changes in sound level according to the following rules of thumb: 1) a change of 1 decibel or less in a given sound's level is generally not readily perceptible except in a laboratory setting; 2) a 5-dB change in a sound is considered to be generally noticeable in a community setting; and 3) it takes approximately a 10-dB change to be heard as a doubling or halving of a sound's loudness.

Another important characteristic of sound is its frequency, or "pitch." This is the rate of repetition of sound pressure oscillations as they reach our ears. Frequency is expressed in units known as Hertz (abbreviated "Hz" and equivalent to one cycle per second). Sounds heard in the environment usually consist of a range of frequencies. The distribution of sound energy as a function of frequency is termed the "frequency spectrum."

The human ear does not respond equally to identical noise levels at different frequencies. Although the normal frequency range of hearing for most people extends from a low of about 20 Hz to a high of 10,000 Hz to 20,000 Hz, people are most sensitive to sounds in the voice range, between about 500 Hz to 2,000 Hz. Therefore, to correlate the amplitude of a sound with its level as perceived by people, the sound energy spectrum is adjusted, or "weighted."

The weighting system most commonly used to correlate with people's response to noise is "A-weighting" (or the "A-filter") and the resultant noise level is called the "A-weighted noise level" (dBA). A-weighting significantly de-emphasizes those parts of the frequency spectrum from a noise source that occurs both at lower frequencies (those below about 500 Hz) and at very high frequencies (above 10,000 Hz) where we do not hear as well. The filter has very little effect, or is nearly "flat," in the middle range of frequencies between 500 and 10,000 Hz. In addition to representing human hearing sensitivity, A-weighted sound levels have been found to correlate better than other weighting networks with human perception of "noisiness." One of the primary reasons for this is that the A-weighting network emphasizes the frequency range where human speech occurs, and noise in this range interferes with speech communication. Another reason is that the increased hearing sensitivity makes noise more annoying in this frequency range. Figure B-1 shows the relative response of various weighting networks including the A weighting network.

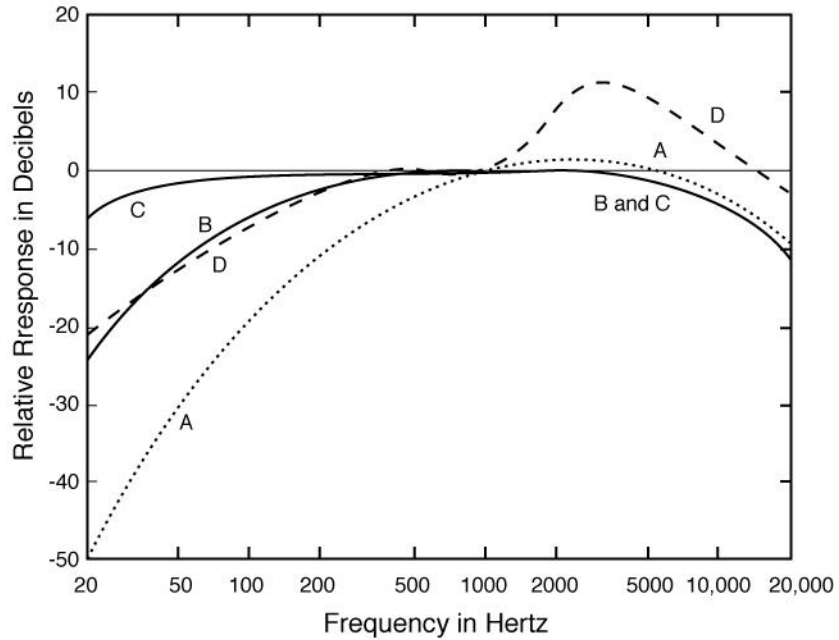


Figure A-1. Relative Response of A-, B-, C-, and D-Weighting Networks

Figure B-2 shows common indoor and outdoor A-weighted sound levels and the environments or sources that produce them

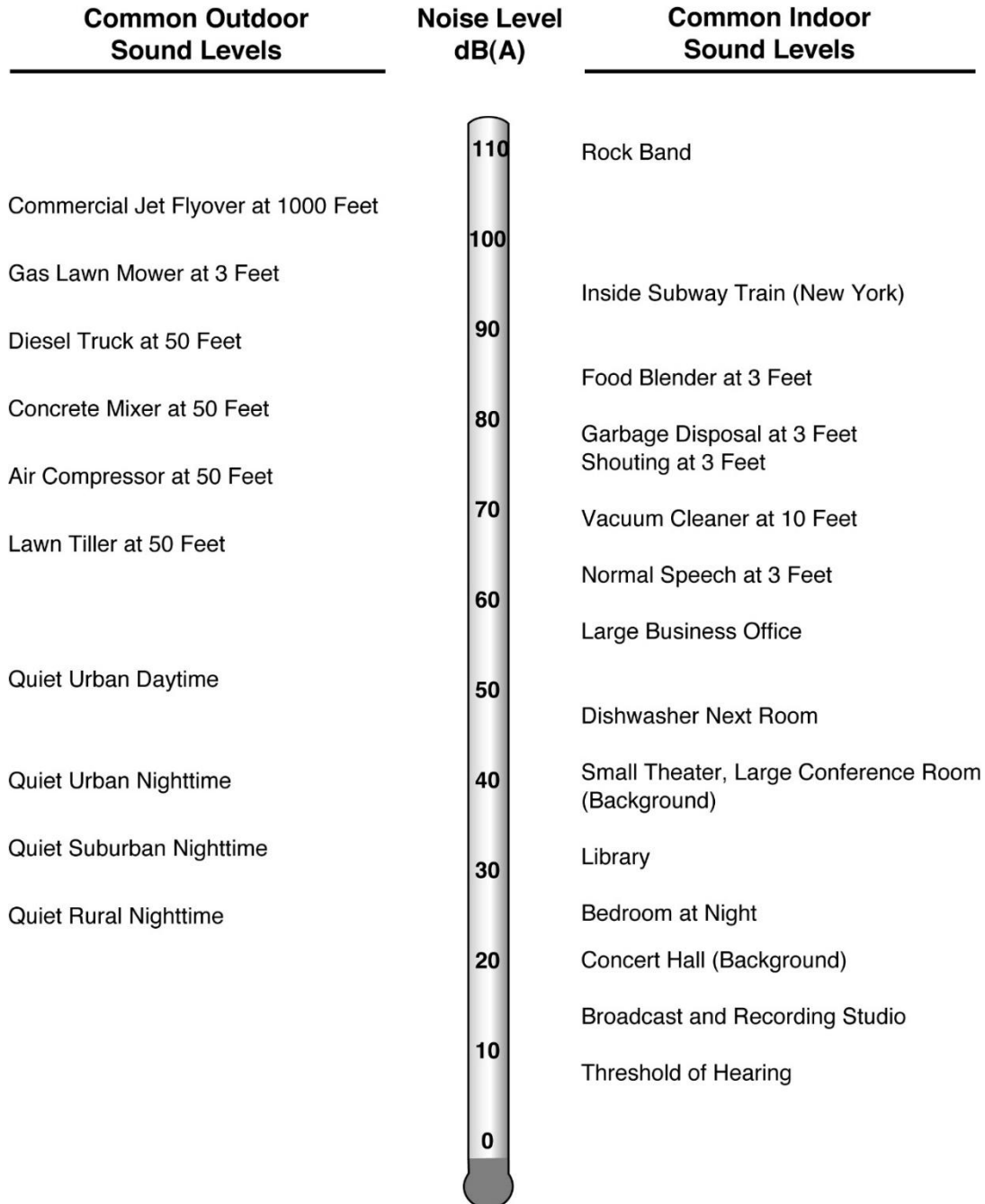


Figure A-2. Common Outdoor and Indoor A-weighted Sound Levels

Maximum Sound Level (L_{max})

The variation in sound level over time often makes it convenient to describe a particular noise "event" by its maximum sound level, abbreviated as L_{max} or L_{Amax} . The maximum level describes only one dimension of an event; it provides no information on the cumulative noise exposure. In fact, two events with identical maxima may produce very different total exposures. One may be of very short duration, while the other may continue for an extended period and be judged much more annoying. The Sound Exposure Level metric corrects for this deficiency.

Equivalent Sound Level (L_{eq})

The Equivalent Sound Level, abbreviated L_{eq} , is a measure of the total exposure resulting from the accumulation of A-weighted sound levels over a particular period of interest -- for example, an hour, an 8-hour school day, nighttime, or a full 24-hour day. However, because the length of the period can be different depending on the time frame of interest, the applicable period should always be identified or clearly understood when discussing the metric. Such durations are often identified through a subscript, for example L_{eq1h} , or $L_{eq(24)}$.

The L_{eq} may be thought of as a constant sound level over the period of interest that contains as much sound energy as (is “equivalent” to) the actual time-varying sound level with its normal peaks and valleys. It is important to recognize, however, that the two signals (the constant one and the time-varying one) would sound very different from each other. Also, the “average” sound level suggested by L_{eq} is not an arithmetic value, but a logarithmic, or “energy-averaged” sound level. Thus, the loudest events may dominate the noise environment described by the metric, depending on the relative loudness of the events.



Statistical Sound Level Descriptors

Statistical descriptors of the time-varying sound level are often used instead of, or in addition to L_{eq} to provide more information about how the sound level varied during the time period of interest. The descriptor includes a subscript that indicates the percentage of time the sound level is exceeded during the period. The L_{50} is an example, which represents the sound level exceeded 50 percent of the time, and equals the median sound level. Another commonly used descriptor is the L_{10} , which represents the sound level exceeded 10 percent of the measurement period and describes the sound level during the louder portions of the period. The L_{90} is often used to describe the quieter background sound levels that occurred, since it represents the level exceeded 90 percent of the period.

Sound Power Level

The sound power level is a fundamental measure of a source of sound and is a measure of the acoustic energy, or power, emitted by a source. Mathematically, the sound power level is ten times the logarithm (to the base 10) of a given sound power to the reference sound power (1 picowatt or 10^{-12} watt). The unit is the decibel.