Butterfield Site - Russellville East End
44.38 Acres

CERTIFIED BY ENTERGY ARKANSAS

SELECT SITE
CERTIFIED BY
Entergy
Arkansas

December 2020

ARKANSAS
VALLEY ALLIANCE
FOR ECONOMIC DEVELOPMENT

Table of Contents

Utilities

- Local Contact Information, Service, and Proximity to Site
    - Electric
    - Natural Gas
    - Water
    - Sewer
    - Telecommunications
    - Rail

Taxes

- Local Sales Tax Rates
- Property Tax Rates and Methods of Assessment
- State Taxation Summary

Maps

- Transportation, Regional
- Transportation, Immediate
- Aerial
- Topographic
- Elevation Contours
- FEMA Flood Hazard
- National Wetlands Inventory
- Pipeline Infrastructure
- Electrical Infrastructure
- Local Utilities
- Surrounding Uses
- Zoning

General Information

Site Name:	Butterfield - Russellville East End
Site Address:	503 Industrial Blvd, Russellville AR 72802
Owner Contact Name:	Mayor Richard Harris, City of Russellville AR
Economic Development Organization Contact Information:	Paul H. Harvel, CEO, Russellville Regional Alliance for Economic Development 708 West Main Street Russellville, AR 72801 Office 479-968-2530, Cell 501-680-7082 pharvel@arkrivernow.com
Site Size:	44.38 acres
Site Control Document:	This site is owned by the City of Russellville. The Arkansas Valley Alliance for Economic Development dba the Russellville Regional Alliance for Economic Development is under contract with the City to market and manage industrial property and to assist industrial and business development prospects.
Aerial Site Location Map:	See attachment G-1 for detail.

Entergy BUSINESS DEVELOPMENT ARKANSAS

Butterfield Site

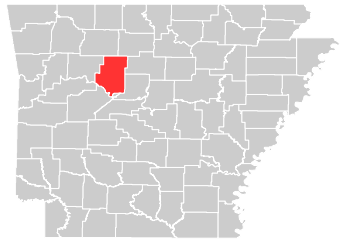
Aerial

425 W Capital Ave Suite 2700
Little Rock, AR 72201

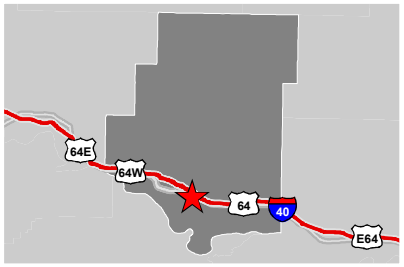
Phone: 1-888-301-5861

goentergy.com/ar

POPE COUNTY



VICINITY



LEGEND

- Property Boundary
- Railroads
- Interstate Highway
- U.S. Highway
- County Roadway

NOTE

These drawings are provided merely to assist in economic development efforts. The Entergy Companies make no representations or warranties whatsoever regarding the accuracy or completeness of any information contained herein nor the condition or suitability of any properties. Users should direct inquiries about any property to the listing broker for that property.

SOURCE

Roads: Census/TIGER database, 2014
Railroads: Federal Railroad Administration, Bureau of Transportation Statistics, ESRI, 2014

N

Created by: RPG
Date: 7/2020

1:5,000

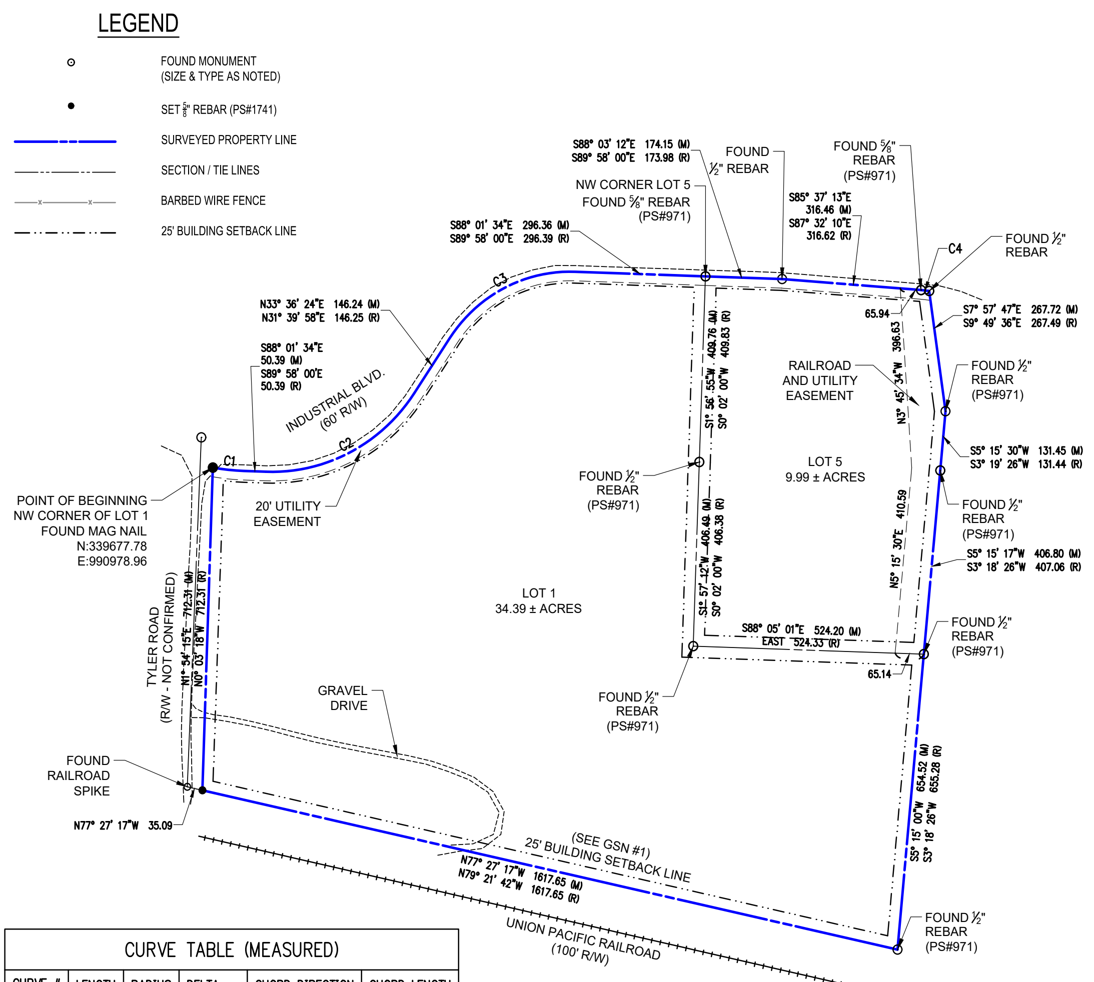
0 250 500 1,000 Feet

0 60 120 240 Meters

Site Characteristics

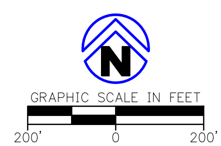
Acreage:	44.38 acres
Dimensions:	662’ x 1820’ x 1186’ x 1580’
Previous Use:	Agricultural, residential
Fire Rating:	2
Distance to Fire Station:	2.5 miles
Distance to Nearest Interstate *and* 4-lane Highway *and* Access Points:	1.6 miles from I-40 via Exit 88 0.5 miles to US-64 via Industrial Blvd.
Road Frontage, Type and Weight Capacities:	Yes. Tyler Road on west boundary and Industrial Blvd. on north boundary (both are city streets – 36’ wide with curb & gutter). No weight restrictions.
Distance to Nearest Rail:	Access to rail is approximately 5 miles from site via Dardanelle-Russellville local line. From there, connection to Union Pacific Railroad is possible.
Distance to Nearest Commercial Airport:	This site is less than 0.5 miles from the Russellville Regional Airport with 5,500 feet runways, RNAV approaches, 24-hour call-out service, 100 low lead aviation fuel and Jet-A fuel available. The Site is 82.5 miles from Clinton National Airport in Little Rock.
Distance to Nearest Port Facility:	Site is 5 miles from the Port of Dardanelle and 63 miles from the Little Rock Port Authority. Both facilities are on the Arkansas River.
Distance from Retail or Central Business District:	3.5 miles
Site Type:	Industrial Park is bordered by industry to the north and east, residential area to the south, and vacant pastureland to the west.
Site Survey:	See attached. Site is Lots 1 and 5.

SELECT SITE
CERTIFIED BY Entergy Arkansas



CURVE TABLE (MEASURED)					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	70.99'	507.55'	8°00'51"	S84° 01' 04"E	70.93'
C2	395.30'	388.04'	58°22'03"	N62° 47' 25"E	378.43'
C3	334.18'	328.05'	58°21'59"	N62° 47' 23"E	319.92'
C4	18.87'	436.72'	2°28'30"	N83° 34' 07"W	18.86'

CURVE TABLE (RECORD)					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	71.17'	507.24'	8°02'22"	-----	---
C2	395.36'	388.10'	58°22'02"	-----	---
C3	334.23'	328.10'	58°22'02"	-----	---
C4	19.01'	355.12'	3°04'03"	-----	---



BASIS OF BEARINGS:
GRID NORTH
NAD83 ARKANSAS NORTH ZONE
CONVERGENCE ANGLE(AT THE POINT OF BEGINNING): -0° 37' 35.04425821"
ALL DISTANCES ARE IN GROUND
SCALE FACTOR (GROUND TO GRID): 0.999951682795

METES AND BOUNDS LAND DESCRIPTION AS SURVEYED

BEING LOT 1 AND LOT 5 OF THE RE-PLAT OF THE RE-PLAT OF EAST END INDUSTRIAL PARK, POPE COUNTY ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND MAG NAIL ON THE SOUTH RIGHT-OF-WAY OF INDUSTRIAL BOULEVARD AND THE EAST RIGHT-OF-WAY OF TYLER ROAD FOR THE NORTHWEST CORNER OF LOT 1; THENCE ALONG THE SOUTH RIGHT-OF-WAY OF INDUSTRIAL BOULEVARD, THE FOLLOWING NINE (9) CALLS:

1. ALONG THE ARC OF A CURVE TO THE LEFT 70.99 FEET, HAVING A RADIUS OF 507.55 FEET, SUBTENDED BY A CHORD OF 70.93 FEET, WHICH BEARS S84°01'04"E;
2. THENCE S88°01'34"E, 50.39 FEET TO A CURVE TO THE LEFT;
3. THENCE 395.30 FEET ALONG THE ARC OF SAID CURVE, HAVING A RADIUS OF 388.04 FEET, SUBTENDED BY A CHORD OF 378.43 FEET, WHICH BEARS N62°47'25"E;
4. THENCE N33°36'24"E, 146.24 FEET TO A CURVE TO THE RIGHT;
5. THENCE 334.18 FEET ALONG THE ARC OF SAID CURVE, HAVING A RADIUS OF 328.05 FEET, SUBTENDED BY A CHORD OF 319.92 FEET, WHICH BEARS N62°47'23"E;
6. THENCE S88°01'34"E, 296.36 FEET TO A FOUND 5/8" REBAR (PS#971) FOR THE NORTHWEST CORNER OF LOT 5;
7. THENCE S88°03'12"E, 174.15 FEET TO A FOUND 1/2" REBAR;
8. THENCE S85°37'13"E, 316.46 FEET TO A CURVE TO THE RIGHT;
9. THENCE 18.87 FEET ALONG THE ARC OF SAID CURVE, HAVING A RADIUS OF 436.72 FEET, SUBTENDED BY A CHORD OF 18.86 FEET, WHICH BEARS N83°34'07"W;

THENCE S7°57'47"E, 267.72 FEET TO A FOUND 1/2" REBAR (PS#971); THENCE S5°15'30"W, 131.45 FEET TO A FOUND 1/2" REBAR (PS#971); THENCE S5°15'17"W, 406.80 FEET TO A FOUND 1/2" REBAR (PS#971); THENCE S5°15'00"W, 654.52 FEET TO A FOUND 1/2" REBAR (PS#971) ON THE NORTH RIGHT-OF-WAY LINE OF THE UNION PACIFIC RAILROAD; THENCE N77°27'17"W, ALONG SAID NORTH RIGHT-OF-WAY LINE, 1617.65 FEET TO A SET 5/8" REBAR (PS#1741) ON THE EAST RIGHT-OF-WAY LINE OF TYLER ROAD; THENCE N1°54'15"E, 712.31 FEET TO THE POINT OF BEGINNING, CONTAINING 44.38 ACRES, MORE OR LESS.

UTILITY INFORMATION

NO ATTEMPT HAS BEEN MADE AS A PART OF THIS BOUNDARY SURVEY TO OBTAIN OR SHOW DATA CONCERNING EXISTENCE, SIZE, DEPTH, CONDITION, CAPACITY OR LOCATION OF ANY UTILITY OR MUNICIPAL / PUBLIC SERVICE FACILITY EXCEPT AS SPECIFICALLY SHOWN ON THIS SURVEY PLAT. FOR INFORMATION REGARDING THESE UTILITIES OR FACILITIES, PLEASE CONTACT THE APPROPRIATE AGENCIES.

EASEMENTS, ZONING, AND LAND USE REGULATIONS

EXCEPT AS SPECIFICALLY STATED OR SHOWN ON THIS PLAT, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: EASEMENTS (OTHER THAN POSSIBLE EASEMENTS WHICH WERE VISIBLE AT THE TIME OF THIS SURVEY), BUILDING SETBACK LINES, RESTRICTIVE COVENANTS, SUBDIVISION RESTRICTIONS, ZONING OR OTHER LAND-USE REGULATIONS, AND ANY OTHER FACTS WHICH AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.

FLOOD INFORMATION

THIS PROPERTY IS IN FLOOD ZONE "X", AND DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE OF FLOOD PLAIN, AS SHOWN ON THE NATIONAL FLOOD INSURANCE PROGRAM'S FIRM PANEL NUMBER 05115C0390 E, EFFECTIVE MARCH 2, 2010.

GENERAL SURVEY NOTES

1. PER SUBDIVISION PLAT (R1), INDUSTRIAL STRUCTURES MAY BE BUILT TO THE SIDE OR REAR PROPERTY LINE WHERE RAILROAD SIDING FACILITIES ARE UTILIZED.

FIELD WORK FOR SURVEY

FIELD WORK FOR THIS SURVEY WAS COMPLETED ON MAY 7th, 2019 AND MAY 8th, 2019.

CERTIFICATION

THE HEREON PLATTED SURVEY WAS MADE UNDER MY PERSONAL SUPERVISION AND WAS EXECUTED IN ACCORDANCE WITH THE CURRENT MINIMUM STANDARDS AS SET FORTH IN STANDARDS OF PRACTICE NO. 1 (REVISED MAY 21, 2009) ARKANSAS MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS AND PLATS AS SET FORTH BY THE STATE LAND SURVEYOR. THIS DECLARATION IS MADE FOR THE EXCLUSIVE USE OF THE CLIENT(S) SHOWN HEREON.

JEREMY A. LAWSON
ARKANSAS LICENSED PROFESSIONAL
LAND SURVEYOR NO. 1741

STATE PLAT CODE: 500-07N-20W-0-13-140-58-1741

RECORD INFORMATION

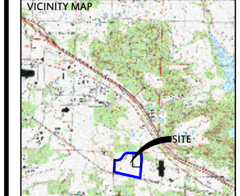
R1. THE RE-PLAT OF THE RE-PLAT OF EAST END INDUSTRIAL PARK FILED IN RECORDS OF POPE COUNTY AT THE POPE COUNTY COURT HOUSE, CIRCUIT CLERKS OFFICE, PLAT CABINET "C" - SLIDE 691 - A.

BOUNDARY PLAT
LOT 1 AND LOT 5 OF THE
RE-PLAT OF THE RE-PLAT OF EAST END INDUSTRIAL PARK
POPE COUNTY, ARKANSAS

PREPARED FOR:
THE ARKANSAS VALLEY ALLIANCE
FOR ECONOMIC DEVELOPMENT

RUSSELLVILLE
ARKANSAS

VICINITY MAP



DELTA	DESCRIPTION	DATE

65 Bradley Cove Rd.
Russellville, Arkansas 72812

Crafton Tull
architecture | engineering | surveying
479.968.1885 t 479.968.2981 f
www.craftontull.com

CERTIFICATE OF AUTHORIZATION:
CERTIFICATE OF AUTHORIZATION
CRAFTON, TULL & ASSOCIATES, INC.
No. 109
ARKANSAS ENGINEER

PROJECT NO: 19702100
ISSUE DATE: 5/08/2019
CONTACT: J. LAWSON
CHECKED BY:
SHEET NO.:

1

DRAWING: G:\19702100_EASTENDSUR\INFRASTRUCTURE\SURVEY\DWG\19702100_SUR.DWG
LAYOUT: LAYOUT1 , LAST SAVED: AJ3006, 5/8/2019 1:18:38 PM
LAST PLOTTED BY: ANGELA JOHNSON, 5/8/2019 1:21:50 PM ("PLOTTED BY:" VALID ON HARD COPY ONLY)

Cost Estimates and Timing

Cost per Acre:	$20,000
Special Timing Considerations:	This site is ready for development.
Clearing Cost:	This will be minimal. There is a small area on the southwest corner that has not been cleared. Assuming that 15 to 20 acres of the site would need to be cleared to accommodate site grading for a building pad and associated parking and driveways, we estimate the total cost to be approximately $75,000. See attachment C-1 for more details on the estimate from Crafton Tull.
Grading Cost:	This will be minimal, depending on construction plans. The site has a 3-degree slope. Based upon estimated volumes, rough grading cost estimates are around $625,000. This is based upon the Arkansas Department of Transportation's Weighted Average Unit Price of $6.50 per cubic yard for unclassified excavation, and $3.25 per cubic yard for compacted fill. See attachment C-1 for more details on the estimate from Crafton Tull.
Cut/Fill Cost:	This will be dependent on construction plans and weight requirements. See attachment C-1 for more details on the estimate from Crafton Tull.
Utility Extension or Upgrade Costs:	Existing utility services are readily available at the site. No major upgrades or extensions would be required. Some upgrades to the sewer lift station may be necessary. See attachment C-1 for more details on the estimate from Crafton Tull.

Crafton Tull
architecture | engineering | surveying

65 Bradley Cove
Russellville, AR 72802

479.968.1885 (ph)
479.968.2981 (fax)

November 11, 2020

Ms. Suzy Griffin
Arkansas Valley Alliance for Economic Development
708 West Main Street
Russellville, Arkansas 72801

RE: Site Development Considerations
45 Acre Tract – Russellville East End Industrial Park

Suzy;

Per your request, we offer the following narrative based upon our observations and experience with site development costs in the river valley area. This narrative is not based upon any particular building and site design and actual costs may vary based upon final construction drawings.

General Land Description – The 45 acre tract is open, undeveloped land with a general slope to the south, southeast of 3 to 6%. According to the Phase 1 Environmental Study completed in June, 2018, there are no known environmental issues encumbering the property.

Site Clearing and Topsoil Stripping – Assuming that 15 to 20 acres of the site would need to be cleared to accommodate site grading for a building pad and associated parking and driveways, we estimate the total cost to be approximately $75,000.

Site Grading and Earthwork – Exact earthwork volumes are difficult to estimate without a conceptual site plan based upon a particular building size and layout, however, to provide a rough building pad, driveways and parking, we estimate a total earthwork volume of 65,000 cubic yards of excavated materials and 60,000 yards of compacted fill. Based upon these estimated volumes, we calculate the rough grading costs to be in the neighborhood of $625,000. This is based upon the Arkansas Department of Transportation's Weighted Average Unit Price of $6.50 per cubic yard for unclassified excavation, and $3.25 per cubic yard for compacted fill.

Utility Extensions or Upgrade Costs – Water service for fire protection and potable water use is readily available from an existing 12" water main that runs along the north side of Industrial Boulevard. No water main extension or upgrade is anticipated.

Sewer service is available along the west side of the property via an existing 8" gravity sewer main. This sewer main terminates at an existing sanitary sewer lift station located 1,000' (+/-) to the east of the property. While no sewer extension or upgrade of the 8" sewer main will be required, some

improvements to increase capacity at the existing lift station may be required, based upon the sewage volume created by any proposed manufacturing or industrial use of the property. Upgrades to the sanitary sewer lift station is anticipated to be less than $150,000.

Airspace Restrictions - Due to the proximity of the Russellville Municipal Airport, there are portions of the property that fall within the Approach and Departure path of the Runway. This path is represented by an imaginary surface extending outward and upward from the end of the runway for a horizontal distance of 10,000 feet at a slope of 40:1. Structures within this area that could potentially penetrate this surface must be evaluated through the Obstruction Evaluation / Airport Airspace Analysis (OE/AAA) process. Proposed facilities may be restricted in this area based upon exact building location, finished floor elevation and proposed height of tallest structure. Additional aircraft safety lighting may also be required for structures within this path.

Should you have any questions, or need any additional information, please contact us at your convenience.

Sincerely,

Gregg Long, LEED AP
Vice President

Environmental

Wetlands Screening:	The Phase I Environmental Site Assessment updated June 19, 2018 refers to a pond found on the U.S. Fish and Wildlife National Wetlands Inventory Data Mapper website http://www.fww.gov/wetlands/Data/Mapper.html. Under U.S.A.C.E. Nationwide Permit No. 26, the USACE on March 27, 2000, gave permission to fill the pond on this site. In an email dated October 14, 2005, the USACE confirms the pond was drained and filled, and confirms there are "no outstanding Corps issues associated with this permit or the property." See attachment E-1 for detail.
Floodplain Delineation:	This site is located in FEMA Zone X, which is 100% above the 100-year flood plain. See attachment E-2 for detail.
Historical and Cultural Review:	There are no sites of historical significance on this site. See attachment E-3 for detail.
Endangered Species:	There are no endangered species present. See attachment E-4 for detail.
Environmental Phase I (and Phase II if required):	There is no evidence of recognized environmental conditions in connection with the site as stated in the Phase I Environmental Site Assessment updated June 19, 2019. See attachment E-5 for detail.
Stormwater Retention Plan:	A drainage study was done in 2000 for the East Ind Industrial Park. The City's Stormwater Management and Drainage Ordinance is included. See attachment E-6 for details.

Entergy BUSINESS DEVELOPMENT ARKANSAS

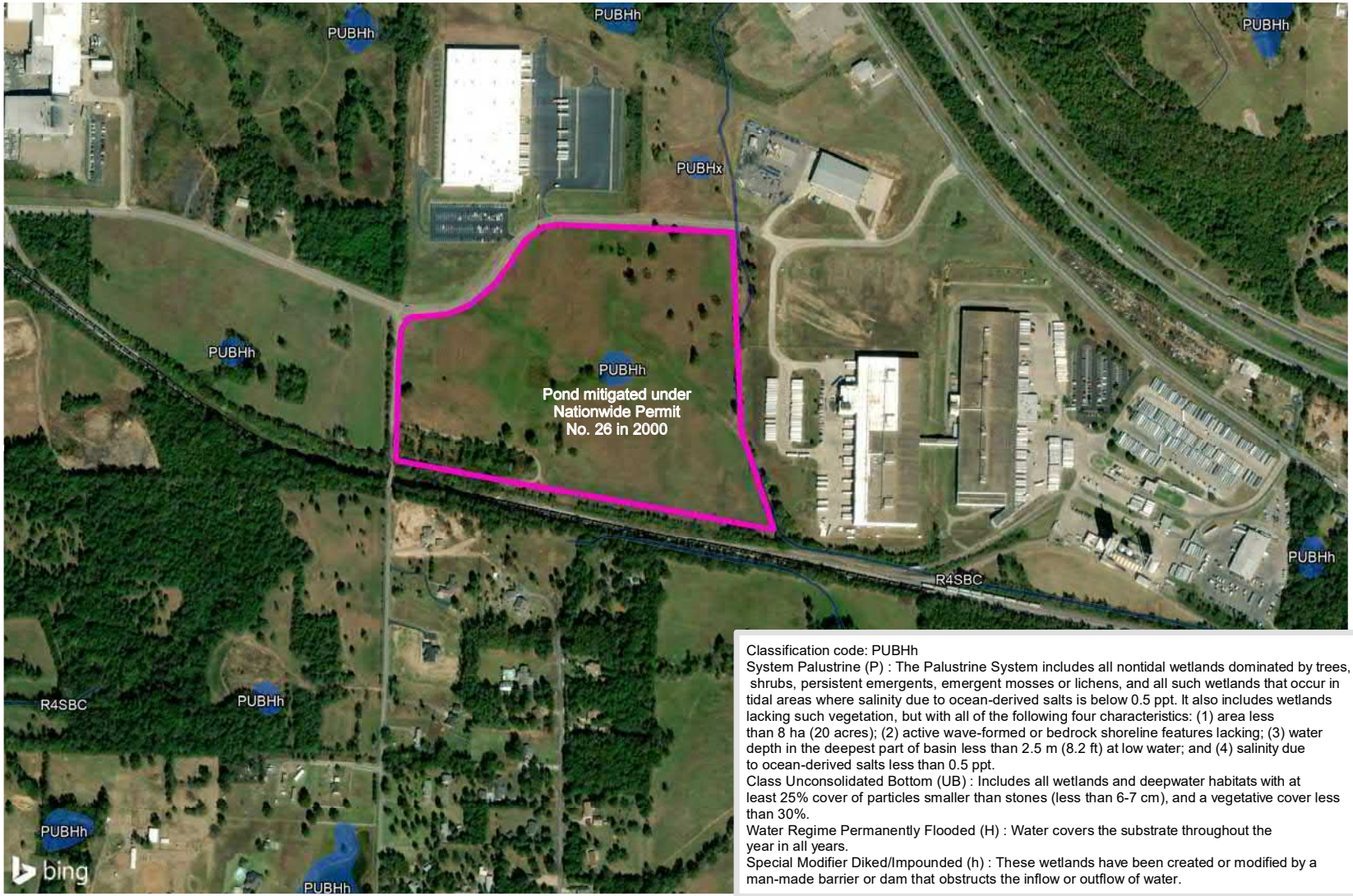
Butterfield Site

National Wetlands Inventory

425 W Capital Ave Suite 2700
Little Rock, AR 72201

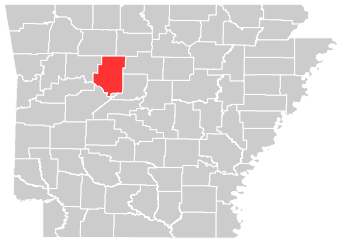
Phone: 1-888-301-5861

goentergy.com/ar

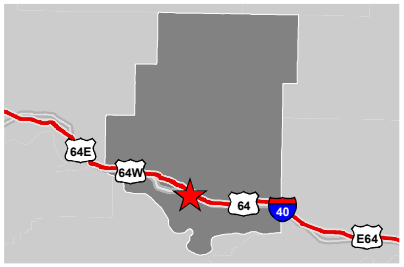


Classification code: PUBHh
System Palustrine (P) : The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.
Class Unconsolidated Bottom (UB) : Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.
Water Regime Permanently Flooded (H) : Water covers the substrate throughout the year in all years.
Special Modifier Diked/Impounded (h) : These wetlands have been created or modified by a man-made barrier or dam that obstructs the inflow or outflow of water.

POPE COUNTY



VICINITY



LEGEND

- Property Boundary

Wetland Type

- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

NOTE

SOURCE

National Wetland Inventory, US Fish and Wildlife Service (FWS), Download Date 8/06/2018.

N

Created by: RPG
Date: 7/2020

1:6,000

0 250 500 1,000 Feet

0 60 120 240 Meters

DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867

REPLY TO
ATTENTION OF

Planning, Environmental and Regulatory Division
Regulatory Branch

NATIONWIDE PERMIT NO. 12903-1

Gary E. Tucker PhD, PWS
FTN Associates Ltd.
3 Innwood Circle
Suite 220
Little Rock, Arkansas 72211

Dear Dr. Tucker:

Please refer to your letter dated March 10, 2000, concerning Department of the Army permit requirements pursuant to Section 404 of the Clean Water Act. This letter, on behalf of your client Russellville Economic Development Partnership, Inc., requested verification of a wetland determination and authorization for the placement of fill or dredged material in waters of the United States associated with a industrial development project. The project is located along Galla Creek, in the SE 1/4 of section 12, and the NE 1/4 of section 13, T. 7 N., R. 20 W., east of Russellville, Pope County, Arkansas.

The fill of two wetlands and a small tributary totaling less than 0.33 acres is authorized by Department of the Army Nationwide Permit (NWP) No. 26 (copy enclosed), provided that the conditions therein are met. This permit was published in the Federal Register (Part VII, Vol. 61, No. 241, pages 65874-65922) dated December 13, 1996, and became effective on February 11, 1997. You should become familiar with the conditions and maintain a copy of the permit at the worksite for ready reference. If changes are proposed in the design or location of the facilities, you should submit revised plans to this office for approval before construction of the change begins.

Please refer to NWP Condition No. 3, which stipulates that appropriate erosion and siltation controls be used during construction and all exposed soil be permanently stabilized. Erosion control measures must be implemented during and after construction of the proposed project to comply with this permit condition.

In order to fully comply with the conditions of the NWP, you must submit the enclosed compliance certification within 30 days of completion of the project. This is required pursuant to General Condition No. 14 of the permit.

This verification is valid until NWP 26 expires on June 7, 2000. If you have started this work or are under contract to start this work you would then have until June 7, 2001 to complete the work.

If you have any questions about this permit or any of its provisions, please contact me at (501) 324-5295 and refer to Permit No. 12903-1.

Sincerely,

Kenneth H. Lyon
Project Manager

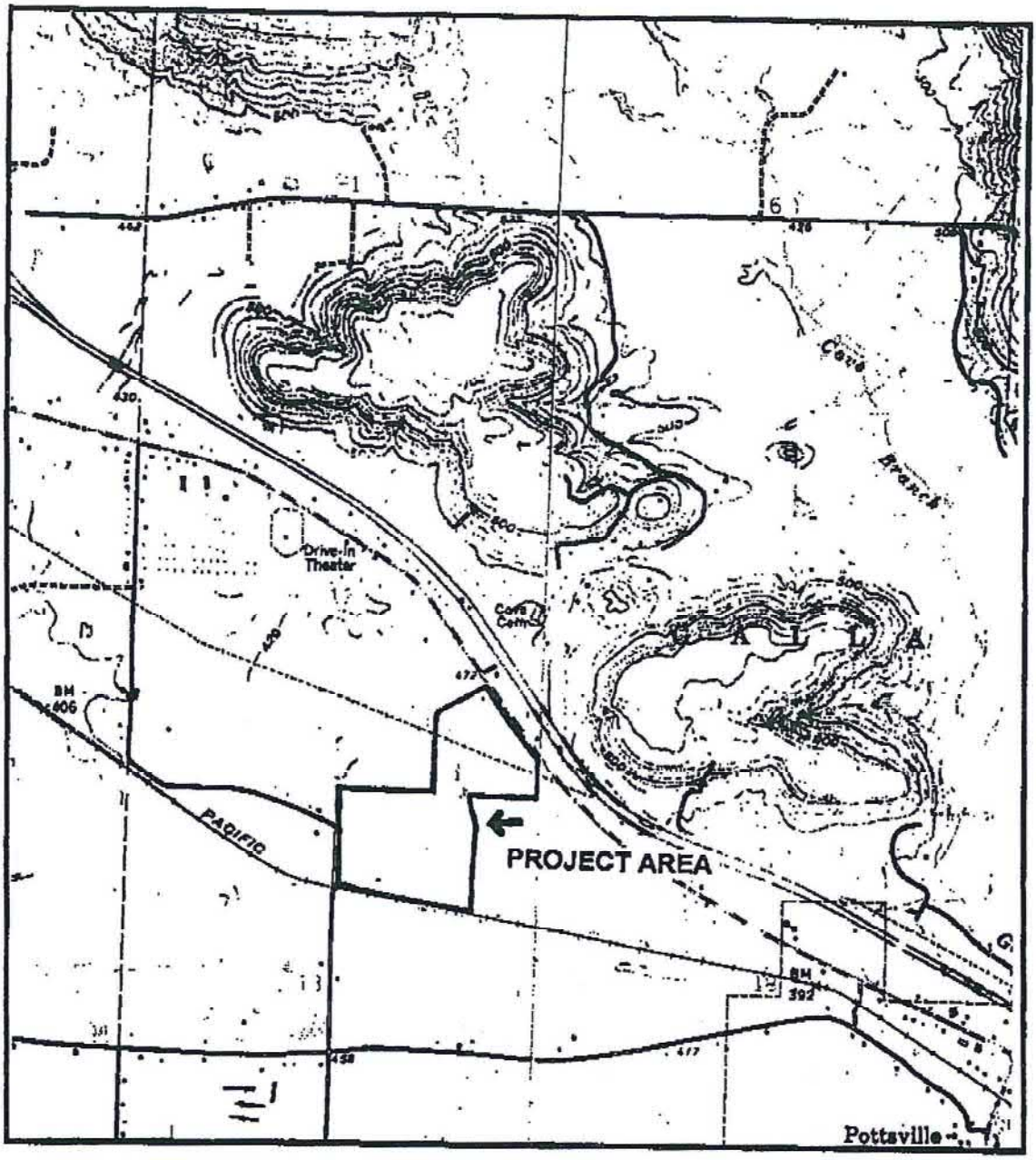
Enclosures

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Copy Furnished:
Arkansas Department of Environmental Quality,
ATTN: Water Division, P.O. Box 8913,
Little Rock, Arkansas 72219-8913, w/cy dwgs
Oper Proj Mgr, Russellville PO, w/cy dwgs
Ch, Planning, Environmental and Regulatory Division
Regulatory Enf, w/cy dwgs

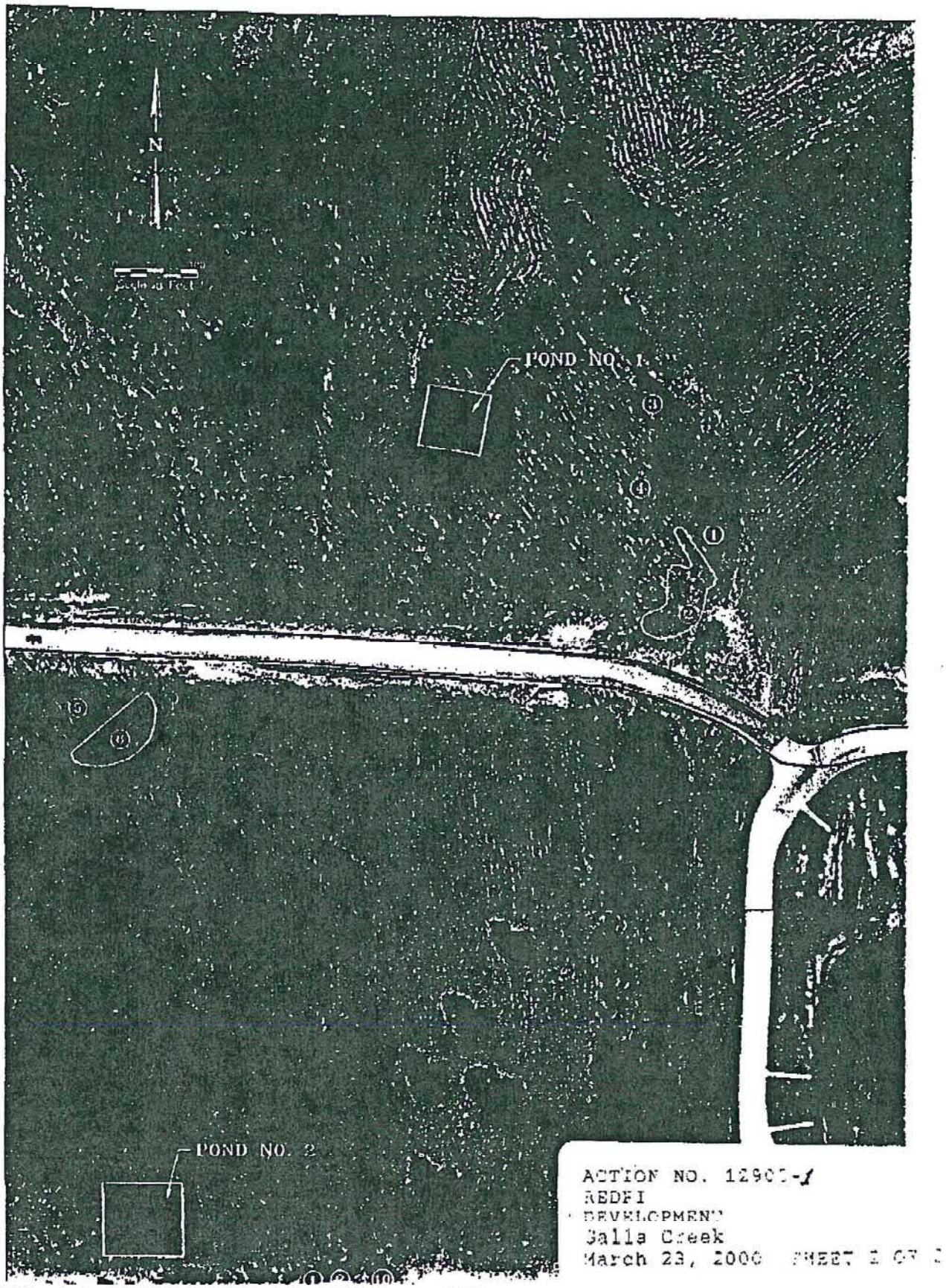
LYON
Kh/5295
12903-1/nat-per.cs
03/27/00

ENCLOSURE 1



Map of REDPI Development Project Area, which is located in parts of SE¼ of Section 12 and NE¼ of Section 13, Township 7 North, Range 20 West (USGS topographic quadrangle Russellville East, 7.5 minute series) (Corps Action ID No. 12903).

ACTION NO. 12903-I
REDPI
DEVELOPMENT
Galla Creek
March 23, 2000 SHEET 1 OF 2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POND NO. 1
POND NO. 2
ACTION NO. 12901-
REDFI
DEVELOPMENT
Salla Creek
March 23, 2000 SHEET 1 OF

DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867

REPLY TO
ATTENTION OF

From: Perser, Joyce C SWL
Sent: Friday, October 14, 2005 7:14 AM
To: 'get@ftn-assoc.com'
Subject: Action ID No. 12903-1

Dr. Tucker,

Based on our discussion today of the wetland delineation associated with Action ID No. 12903-1, dated March 28, 2000, Pond #2 of the subject delineation was constructed in uplands and therefore was not a jurisdictional water of the United States. A Nationwide Permit No. 26 was issued for the proposed work. The work authorized by the permit was completed as permitted, but the site was not developed. Pond #2 was filled during the project, but was not referenced in the permit letter because there was no Regulatory jurisdiction for the filling. There are no outstanding Corps issues associated with this permit or the property.

Joyce Perser

Joyce Perser
Acting Chief, Regulatory Branch
US Army Corps of Engineers
Little Rock District

(501) 324-5296

Entergy BUSINESS DEVELOPMENT ARKANSAS

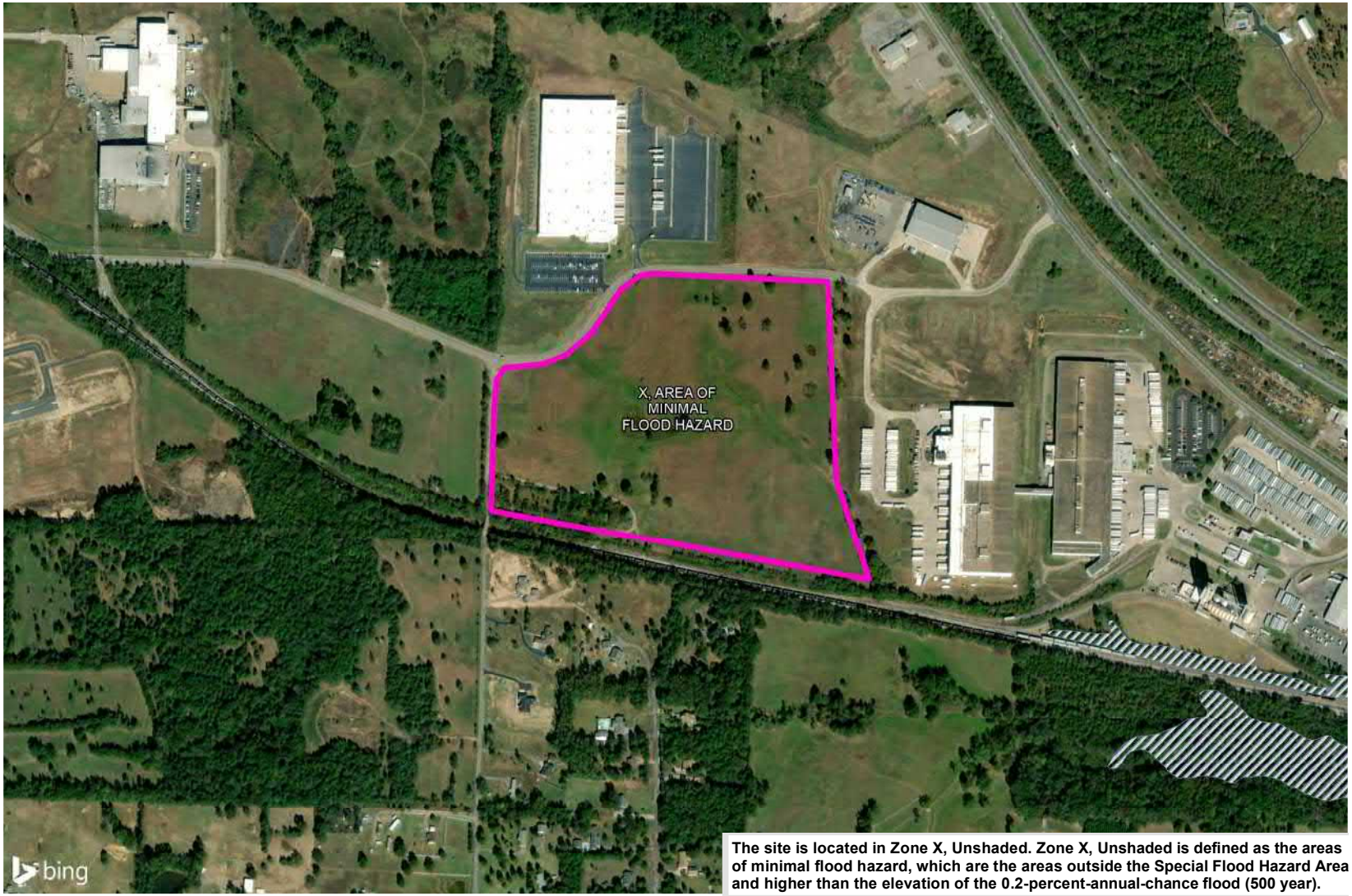
Butterfield Site

FEMA Flood Hazard Map

425 W Capital Ave Suite 2700
Little Rock, AR 72201

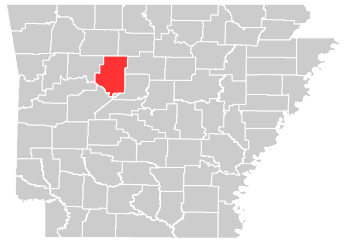
Phone: 1-888-301-5861

goentergy.com/ar

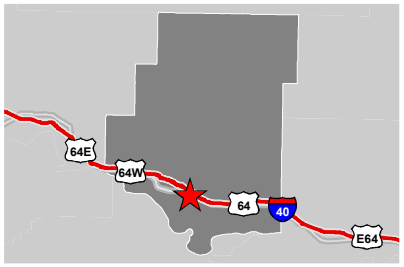


The site is located in Zone X, Unshaded. Zone X, Unshaded is defined as the areas of minimal flood hazard, which are the areas outside the Special Flood Hazard Area and higher than the elevation of the 0.2-percent-annual-chance flood (500 year).

POPE COUNTY



VICINITY



LEGEND

Property Boundary

Flood Hazard Zone

A,
X, AREA OF MINIMAL FLOOD HAZARD

NOTE

These drawings are provided merely to assist in economic development efforts. The Entergy Companies make no representations or warranties whatsoever regarding the accuracy or completeness of any information contained herein nor the condition or suitability of any properties. Users should direct inquiries about any property to the listing broker for that property.

SOURCE

Federal Emergency Management Agency, 2017_05_25, National Flood Hazard Layer (NFHL), Version 1.1.1.0 FEMA-NFHL

N

Created by: RPG
Date: 7/2020

1:6,000

0 250 500 1,000 Feet

0 60 120 240 Meters

National Flood Hazard Layer FIRMette

FEMA

93°4'45"W 35°16'1"N

93°4'8"W 35°15'32"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/17/2020 at 5:25 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

From: Phillip McMath <Phillip.McMath@arkansas.gov>
Sent: Tuesday, September 22, 2020 7:09 AM
To: Suzy Griffin <sgriffin@russellvillechamber.com>
Cc: Eric Mills <Eric.Mills@arkansas.gov>
Subject: AHPP Section 106 Review: 32893.02

Ms. Griffin:

Based on the information provided in the HUD project submission (AHPP Tracking Number: 32893.02), the proposed undertaking entails a 45-acre area (Zoned M-2) to be considered shovel ready for installation of industrial infrastructure. The staff of the Arkansas Historic Preservation Program (AHPP) reviewed the records for previous investigations and significant archaeological and historical resources within or proximal to the proposed area of potential effects in Section 13, Township 7 North, Range 20 West in Pope County, Arkansas.

The AHPP review of a 60-acre (Zoned M-1; Dated: 7/13/2018) in Section 12, Township 7 North, Range 20 West just north of this proposed undertaking was considered unlikely to affect historic properties. The nearest documented archaeological site (3PP0656) is currently unevaluated for National Register of Historic Places eligibility.

Based on background research, this project does not seem likely to affect historic properties.

In the event of an unanticipated discovery of cultural materials or human remains, please cease work immediately, secure the location, and contact this office and other appropriate parties as per your agency's policy.

Tribes that have expressed an interest in the area include the Cherokee Nation, the Chickasaw Nation, the Muscogee (Creek) Nation, the Osage Nation, the Quapaw Nation, the Shawnee Tribe, and the United Keetoowah Band of Cherokee Indians. We recommend consultation in accordance with 36 CFR § 800.2(c)(2).

Owing to recent circumstances (i.e., COVID-19), I cannot provide you with a stamped or signed concurrence letter. Please accept this as official documentation and retain this email as a record of our finding.

Please refer to the AHPP Tracking Number listed above in all correspondence. If you have any questions, please call Phillip McMath of my staff at 501-324-9270 (office), 501-516-2004 (mobile) or email phillip.mcmath@arkansas.gov.

Sincerely,

/s/ Phillip Bruce McMath

Scott Kaufman
Director, AHPP

PHILLIP BRUCE MCMATH
Section 106 Archaeologist

Arkansas Historic Preservation Program
1100 North Street
Little Rock, AR 72201
phillip.mcmath@arkansas.gov
p: 501.324.9270 | f: 501.324.9184

ArkansasPreservation.com

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: August 13, 2020
Consultation Code: 04ER1000-2020-TA-1330
Event Code: 04ER1000-2020-E-03282
Project Name: Butterfield site certification

Subject: Verification letter for 'Butterfield site certification' 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 Suzy Griffin:

The U.S. Fish and Wildlife Service (Service) received on **August 13, 2020** your effect determination(s) for the 'Butterfield site certification' (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	**Determination**
Proposed Threatened Eastern Black Rail (*Laterallus jamaicensis ssp. jamaicensis*)	No Effect
Threatened Red Knot (*Calidris canutus rufa*)	No Effect
Threatened Piping Plover (*Charadrius melodus*)	No Effect
Endangered Indiana Bat (*Myotis sodalis*)	No Effect
Threatened Northern Long-eared Bat (*Myotis septentrionalis*)	May Affect
Threatened Missouri bladderpod (*Physaria filiformis*)	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 concurs with the NLAA determination(s) for the species listed above. Your agency has met consultation requirements by informing the Service of the “No Effect” determinations. No further consultation for this project is required for these species. This letter confirms you may rely on effect determinations provided in the Arkansas Determination Key for project review and guidance for federally listed species to satisfy agency consultation requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.; ESA).

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

Butterfield site certification

2. Description

The following description was provided for the project 'Butterfield site certification':

> This site is 44.38 acres located in Pope County, Arkansas. It is in East End Industrial park between the Union Pacific Railroad to the south, Industrial blvd to the north, Tyler road to the west, and a freezer facility to the east. Most of the site is grass land, but there are a few trees on the southern border. We are going through a certification process with Entergy Arkansas, to demonstrate that this site is acceptable to an industrial prospect. We hope to have the process completed by September 30, 2020.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.26087242383228N93.07401214151733W

Species Protection Measures

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?

   No

3. Will project proponents follow Special Provisions for avoidance and minimization measures for listed species in Arkansas?

   Yes

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

   Automatically answered
   No

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

   Automatically answered
   No

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

   Automatically answered
   No

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

   Automatically answered
   No

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

   Automatically answered
   No

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

   Automatically answered
   No

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

    Automatically answered
    Yes

11. Will the project affect sand and gravel areas or shorelines along rivers, lakes, or reservoirs?

    No

12. Does the project take place in marshy or flooded open field habitat?

    No

13. [Semantic] Does the project intersect the red knot AOI?

    Automatically answered
    Yes

14. [Semantic (same answer as "8.1.3"] Will the project affect sand and gravel areas or shorelines along rivers, lakes, or reservoirs?

    Automatically answered
    No

15. [Semantic (same answer as "8.2"] Does the project take place in marshy or flooded open field habitat?

    Automatically answered
    No

16. [Semantic] Does the project intersect the Piping Plover AOI?

    Automatically answered
    Yes

17. [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
    No

18. [Semantic] Does the project intersect the Whooping Crane AOI?

    Automatically answered
    No

19. [Semantic] Does the project intersect the interior least tern AOI?

    Automatically answered
    No

20. [Semantic] Does the project intersect the Gray Bat AOI?
    Automatically answered
    Yes

21. Are there any caves within 0.5 mile of the project area?
    No

22. Does the project occur in a subdivision or urban area?
    Yes

23. [Semantic] Does the project intersect the Ozark Big-eared Bat AOI?
    Automatically answered
    No

24. [Semantic] Does the project intersect the Indiana bat AOI?
    Automatically answered
    Yes

25. [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

26. [Sematic (same answer as question "13.2.1" or ""14.7")] Does the project occur in a subdivision or urban area?
    Automatically answered
    Yes

27. [Semantic] Does the project intersect the Northern Long-eared bat AOI?
    Automatically answered
    Yes

28. Have you determined that the proposed action will have “no effect” on the northern long-eared bat? (If you are unsure select "No")
    No

29. Will your activity purposefully Take northern long-eared bats?
    No

30. 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

31. 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

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

    Automatically answered
    No

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

    Automatically answered
    No

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

    Automatically answered
    No

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

    Automatically answered
    Yes

36. 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)?

    No

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

    Automatically answered
    No

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

    Automatically answered
    No

39. [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:
   0

2. 2. If known, estimated acres of forest conversion from April 1 to October 31
   0

3. 3. If known, estimated acres of forest conversion from June 1 to July 31
   0

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. 5. If known, estimated acres of timber harvest from April 1 to October 31
   0

6. 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. 8. If known, estimated acres of prescribed fire from April 1 to October 31
   0

9. 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

PHASE I
ENVIRONMENTAL SITE ASSESSMENT

Performed on:

Lots 1 & 5
East End Industrial Park
Russellville, Arkansas 72801

EEG PROJECT #18-0115-018

Prepared for:

Ms. Suzy Griffin
River Valley Alliance for Economic Dev.
708 West Main Street
Russellville, Arkansas 72801

June 19, 2018

DEFINITIONS

Adjoining property refers to any real property of which the border is contiguous or partially contiguous with that of the property. This includes a property that would be contiguous or partially contiguous but for a road, street or other public thoroughfare separating them.

All appropriate inquiries refers to inquiries constituting "all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial and customary practice" as defined in CERCLA, 42 U.S.C § 9601(35)(B), that will qualify a party to a commercial real estate transaction for one of the threshold criteria for satisfying the LLPs to CERCLA liability, assuming compliance with other elements for the defense.

Approximate minimum search distance identifies the area for which records must be obtained and reviewed as pursuant to ASTM E 1527 Section 8 subject to the limitations provided in that section.

Bona fide prospective purchaser liability protection is defined by ASTM E 1527 Section 3 as a person may qualify as a bona fide prospective purchaser if, among other requirements, such person made "all appropriate inquiries into the previous ownership and uses of the facility in accordance with generally accepted good commercial and customary standards and practices." Knowledge of contamination resulting from all appropriate inquiries would not generally preclude this liability protection. A person must make all appropriate inquiries on or before the date of purchase. The facility must have been purchased after January 11, 2002.

Brownfield are "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." Brownfield vary in size, location, age, and past use. Such properties can range from a small, abandoned corner gas station to a large, multi-acre former manufacturing plant that has been closed for years.

Business environmental risk refers to the risk that may have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. Consideration of business environmental risk issues may involve addressing one or more non-scope considerations, some of which are identified in ASTM E 1527 Section 13.

Contiguous property owner liability protection is defined by ASTM E 1527 Section 3 as a person may qualify for the contiguous property owner liability protection if, among other requirements, such person owns real property that is contiguous to, and that is or may be contaminated by hazardous substances from other real property that is not owned by that person. Furthermore, such person conducted all appropriate inquiries at the time of acquisition of the property and did not know or have reason to know that the property was or could be contaminated by a release or threatened release from the contiguous property. The all-appropriate inquiries must not result in knowledge of contamination. If it does, then such person did "know" or "had reason to know" of contamination and would not be eligible for the contiguous property owner liability protection.

Controlled recognized environmental condition is defined by ASTM E 1527 Section 3 as a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report.

De minimis condition refers to a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis conditions are not recognized environmental conditions nor controlled recognized environmental conditions.

Engineering controls (EC) are the physical modifications to a site or facility to reduce or eliminate the potential for exposure to hazardous substances or petroleum products in the soil, soil vapor, groundwater, and/or surface water on the property. Engineering controls are a type of activity and use limitation (AUL).

Environmental lien is a charge, security, or encumbrance upon title to a property to secure the payment of cost, damage, debt, obligation, or duty arising out of response actions, cleanup, or other remediation of hazardous substances or petroleum products upon a property, including (but not limited to) liens imposed pursuant to CERCLA 42 USC § 9607 (1) & 9607 (r) and similar state or local laws.

Environmental professional identifies a person meeting the education, training, and experience requirements as set forth in 40 CFR § 312.10(b). Environmental Professional (EP): a person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding conditions indicative of releases or threatened releases on, at, in, or to a property, sufficient to meet the objectives and performance factors. Such a person must: (i) hold a current Professional Engineer's or Professional Geologist's license or registration from a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) and have the equivalent of three (3) years of full-time relevant experience; or (ii) be licensed or certified by the federal government, a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) to perform environmental inquiries and have the equivalent of three (3) years of full-time relevant experience; or (iii) have a Baccalaureate or higher degree from an accredited institution of higher education in a discipline of engineering or science and the equivalent of five (5) years of full-time relevant experience; or (iv) have the equivalent of ten (10) years of full-time relevant experience.

Historical recognized environmental condition is a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I ESA is conducted, the conditions shall be included in the conclusions section of the report as a recognized environmental condition.

Hazardous waste is defined by RCRA as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may – (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed."

Institutional controls (IC) are the legal or administrative restrictions on the use of, or access to, a site or facility to (1) reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil or groundwater on the property, or (2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. Institutional controls are a type of activity and use limitation (AUL).

Migrate/Migration refers to the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface.

Practically reviewable means that the information is provided by the source in the manner and in a form that, upon examination, yields information relevant to the property without the need for extraordinary analysis of irrelevant data.

Property is identified as the real property that is the subject of the environmental assessment, including improvements, buildings and other fixtures located on the property and affixed to the land.

Publicly available information is information to which access is allowed to anyone upon request.

Reasonably ascertainable refers to information that is publicly available, obtainable from its source within reasonable time and cost restraints, and practically reviewable.

Recognized Environmental Condition refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. **De minimis conditions are not recognized environmental conditions**.

User refers to the party seeking to use Practice E1527 to complete an environmental site assessment of the property. A user may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager. The user has specific obligations for completing a successful application of this practice outlined in Section 6 of the ASTM E1527-13 Standard.

AST	Above Ground Storage Tank
ASTM	American Society for Testing Materials
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CORRACTS	Facilities subject to Corrective Action under RCRA
Non-CORRACTS	TSD Facility not subject to Corrective Action under RCRA
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
HREC	Historical Recognized Environmental Condition
LLP	Landowner Liability Protections under the *Brownfield Amendments*
LUST	Leaking Underground Storage Tank
NFRAP	Former CERCLIS Sites where No Further Remedial Action is Planned under CERLA
NPL	National Priorities List
NRCS	Natural Resource Conservation Service
PCB	Polychlorinated Biphenyls
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
SARA	Superfund Amendments and Reauthorization Act of 1986
SEMS	Superfund Enterprise Management System
SEMS-ARCHIVE	Superfund Enterprise Management System Archive
TSD	Treatment Storage Disposal
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank

EXECUTIVE SUMMARY

ENVIRONMENTAL ENTERPRISE GROUP, INC. (EEG) has performed a Phase I Environmental Site Assessment (ESA) in general accordance with the scope and limitations set forth in the Scope of Work and ASTM E 1527-13 for Lots 1 & 5 of East End Industrial Park, Russellville, Pope County, Arkansas.

The Property is currently vacant undeveloped property that is zoned industrial, described as Lots 1 and 5 of East End Industrial Park, Russellville, Arkansas. The Property is located in Section 13, Township 7 North, Range 20 West, consisting of approximately 45 acres. It is comprised of two parcels of land, Parcel #858-40002-000E (34.84 acres) and Parcel #858-40001-000-E (10 acres). According to records from the Pope County Tax Assessor's Office, the Property is currently owned by City of Russellville.

The Property is bordered to the north by Industrial Boulevard then Rockline Industries; to the northeast by Engineered Rigging; to the south by Union Pacific Railroad, residential property and agricultural pastureland; to the east by Americold Logistics; and to the west by Tyler Road and beyond that agricultural pastureland zoned commercial.

The Property was historically developed since at least 1924 for residential and/or agricultural use, according to information obtained from a chain-of-title review during a previous Phase I Environmental Site Assessment performed by EEG (EEG Project #97-304). The Property was platted in 1998 as East End Industrial Park Lots 1 and 5. EEG performed Phase I Environmental Site Assessments on the subject Property in 1997 and 2005, EEG Project #97-304 and #05-0115-076. Summaries of the reports are located in **Section 3.4** of this report. The Property has remained vacant since 2005. The City of Russellville maintains the site, which is harvested for hay.

ON-SITE CONDITIONS

No recognized environmental conditions were identified on the Property. However, the following ***business environmental risks*** and notable finding were identified.

During the 2005 site assessment, EEG noted a water well on the central portion of the Property formerly utilized for potable water for the former residential home located on the site. Due to heavy vegetative growth, EEG was unable to locate the well during this site assessment. If future plans for the Property do not include utilization of the well, some cost would be associated with proper abandonment and closure according to state regulations. EEG does not consider the well a recognized environmental condition but a ***business environmental risk***.

EEG observed minor dumping of refuse and waste tires along the access road on the south portion of the Property. Railroad ties and barbed wire were also observed on the Property. The ties appear to be old fence posts that were abandoned. This is not considered a recognized environmental condition but a ***business environmental risk*** due to the cost associated with proper cleanup and disposal.

According to the U.S. Fish and Wildlife National Wetlands Inventory Data Mapper website http://www.fws.gov/wetlands/Data/Mapper.html, wetlands are present on the Property. The wetland is illustrated as Palustrine, Unconsolidated Bottom, Permanently Flooded, Diked/Impounded (PuBHh). This designation is for the agricultural pond that was historically present on the Property, north of the farm structures. Ponds are typically considered artificial wetlands. The pond, however, is no longer present on the Property. According to documents provided by the client, approval to drain the pond was given by the Corps of Engineers. A copy of the Corps of Engineers letter is included in ***Appendix D*** of this report.

OFF-SITE CONDITIONS

No recognized environmental conditions related to off-site properties were identified.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of *Lots 1 & 5 of East End Industrial Park located in Russellville, Pope County, Arkansas*, the Property. Any exceptions to or deletions from this practice are described in *Section 1.4* of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property.

1.0 INTRODUCTION

1.1 Contract Information

On June 7, 2018, **ENVIRONMENTAL ENTERPRISE GROUP, INC. (EEG)** was retained by Ms. Suzy Griffin of River Valley Alliance for Economic Development to conduct a Phase I Environmental Site Assessment (ESA) of the Property as described in EEG Proposal P18-115 dated June 6, 2018. The assessment was to be completed and a final report delivered by July 5, 2018.

1.2 Purpose and Use

The purposes of this Phase I ESA are to identify existing or potential recognized environmental conditions (as defined by ASTM Standard E-1527, hereinafter defined) affecting the Property. The Client may use the information contained in the ESA report to:

- Assist in the evaluation of legal and financial liabilities associated with the Property
- Assist in the evaluation of the Property's overall development potential
- Assist in the determination whether any immediate actions at the Property are necessary to comply with existing environmental laws and regulations
- Constitute partial or whole appropriate inquiries for purposes of CERCLA's innocent landowner defense, all appropriate inquiries, bona fide prospective purchaser liability protection, and contiguous property owner liability protection

1.3 Scope of Work

EEG conducted this assessment in accordance with, at minimum, the requirements set forth in ASTM Standard E 1527-13 and located in ***Appendix A***. The Scope of Work is comprised of the following general substantive components:

- Review of historical records and environmental database information
- Site reconnaissance
- Conduct interviews with persons knowledgeable about the Property
- Report preparation

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with good commercial and customary principles and practices in the fields of environmental science and engineering for conducting an Environmental Site Assessment of a property for the purpose of identifying recognized environmental conditions. This warranty is in lieu of all other warranties either expressed or implied. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report. The work performed in conjunction with this assessment and the data developed are intended as a description of available information at the dates and locations given. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

It must be noted that Phase I Environmental Site Assessments are of limited scope, are noninvasive, and cannot rule out the existence of any hazardous materials or petroleum products that are present or have been released at any given site. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions. The user of this report must consider the limitations of the ASTM Standard E 1527-13 when formulating opinions as to risk associated with the site or for any other purpose. If a higher level of confidence is desired or required, a risk may be further evaluated, but not limited to, additional research or assessment. EEG will, at the request of the client, provide additional assessment options that may be available at additional cost.

1.4 Investigation Requirements Not Satisfied

Historical documents were not reasonably ascertainable to allow for the determination of Property development since at least 1940 or first developed use. This is not considered a significant data gap because chain-of-title information has determined that the Property was residential and agricultural since at least 1924, and the oldest available aerial photograph from 1976 illustrates the site as pastureland with farm and residential structures.

Not all of the investigation requirements as stated in ASTM 1527-13 have been satisfied by this assessment because site conditions prohibited comprehensive reconnaissance, and access to all areas of the Property was not possible. Due to heavy vegetative growth and pasture grasses on portions of the site, EEG was unable to visually evaluate all portions of the Property during the site reconnaissance. However, great care was taken to walk all areas where trails, roadways or footpath allowed access.

2.0 PROPERTY DESCRIPTION

2.1 Legal Description

Ms. Suzy Griffin of River Valley Alliance for Economic Development provided the legal description for the Property to EEG. In addition, EEG obtained the property tax card from the Pope County Assessor's office website. Copies of the provided documents are included in ***Appendix E***.

2.2 Property Description

Mr. Keith Zimmerman, Environmental Professional, performed a site visit on June 8, 2018. The observations noted in this section apply to the site as it appeared on that day. In addition, a review of available geologic and hydrogeologic information, aerial photographs, and 7.5-minute topographic quadrangles was performed to help verify pre-existing or natural conditions of the Property and surrounding area. Site Location Maps showing general site layout are provided in ***Appendix B.***

The Property is currently vacant undeveloped property that is zoned industrial, described as Lots 1 and 5 of East End Industrial Park, Russellville, Arkansas. The Property is located in Section 13, Township 7 North, Range 20 West, consisting of approximately 45 acres. It is comprised of two parcels of land, Parcel #858-40002-000E (34.84 acres) and Parcel #858-40001-000-E (10 acres). According to records from the Pope County Tax Assessor's Office, the Property is currently owned by City of Russellville.

The Property is bordered to the north by Industrial Boulevard then Rockline Industries; to the northeast by Engineered Rigging; to the south by Union Pacific Railroad, residential property and agricultural pastureland; to the east by Americold Logistics; and to the west by Tyler Road and beyond that agricultural pastureland zoned commercial.

2.3 Current Use of Property

The Property is currently vacant undeveloped industrial platted lots 1 and 5. According to records from the Pope County Tax Assessor's Office, the Property is currently owned by City of Russellville. The Property is currently pastureland, and City of Russellville maintains the lots by cutting the hay.

2.4 Current Use of Adjoining Properties

The area adjoining the Property consists primarily of commercial, residential and agricultural sites. Adjoining properties are currently developed as follows:

North	Commercial – Industrial Boulevard then Rockline Industries with Engineered Rigging to the Northeast
South	Commercial, Residential & Agricultural – Union Pacific Railroad, Residential Property & Pastureland
East	Commercial – Americold Logistics
West	Tyler Road & then Agricultural Property Zoned Commercial

2.5 Site Plan

The Site Plan is located in ***Appendix B***.

3.0 RECORDS REVIEW

3.1 Physical Setting

3.1.1 Topography

EEG reviewed the 2017 revised United States Geological Survey (USGS) Russellville East 7.5-minute Quadrangle series topographic map for this assessment. The topographic map was compiled from December 2015 aerial photographs. The Property elevation ranges from 470 feet to 430 feet above Mean Sea Level (MSL) and slopes gradually to the southwest. The Property is not shown as developed on the topographic map. A copy of the topographic map can be found in ***Appendix B*** of this report.

3.1.2 Soils

According to the United States Department of Agriculture's Soil Survey of Pope County, Arkansas dated April 1981, the soil classification is as follows:

- The Linker Fine Sandy Loam consists of moderately deep, well-drained soil found on a 3-8 percent slope. Linker Fine Sandy Loam soils are low in natural fertility, permeability is moderate and the available water capacity is low. The soil formed in acid sandstone bedrock. The soil is not listed as hydric based on information reviewed from the Hydric Soils of Arkansas List found at: http://soils.usda.gov/use/hydric/

3.1.3 Regional Geology

EEG reviewed data from the Geologic Map of Arkansas produced by the U.S. Geological Survey in 1993 and the State of Arkansas Geologic Survey web site. The Property lies within the Arkansas River Valley. To the north lies the Ozark Plateau and to the south the Ouachita Mountains. All of these regions are within the Interior Highlands of Arkansas. The geology of the area is mapped as Alluvium. The Alluvium consists of alluvial deposits of the Arkansas River. Sediments include gravels, sands, silts, clays, and a mixture of any or all of these clastic materials. The thickness is variable.

3.1.4 Local Hydrology

Based on local topography, groundwater should move in easterly and southeasterly directions at an estimated depth of 10-25 feet. Local features may influence groundwater flow direction; therefore, a complete hydrogeologic investigation would be required to adequately determine groundwater flow direction at the Property.

3.1.5 Flood Zone

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 05115C0390E from March 2010 obtained at the FEMA website, www.msc.fema.gov, the subject Property is not in an area subject to flooding.

3.2 Historical Use Information

The Property was historically developed since at least 1924 for residential and/or agricultural use, according to information obtained from a chain-of-title review during a previous Phase I Environmental Site Assessment performed by EEG (EEG Project #97-304). The Property was platted in 1998 as East End Industrial Park Lots 1 and 5. EEG performed Phase I Environmental Site Assessments on the subject Property in 1997 and 2005, EEG Project #97-304 and #05-0115-076. Summaries of the reports are located in **Section 3.4** of this report. The Property has remained vacant since 2005. The City of Russellville maintains the site, which is harvested for hay.

The property to the north has been developed for commercial use. The property to the south has been developed for commercial, residential and agricultural use. The property to the east has been developed for commercial use. The property to the west has been developed for agricultural use that is zoned commercial.

Details regarding specific usage of the Property and adjoining properties are presented in subsequent sections.

3.2.1 Aerial Photographs

A search was conducted locally and through a national database company for all readily available aerial photographs. Historical aerial photographs of the Property and vicinity were obtained from a previous Phase I ESA performed by EEG, AHTD GIS, Pope County Courthouse and Google, to be reviewed for indications of previous uses of the Property and potential sources of contamination in the site area. This review included aerial photographs from 1976, 1982, 1994, 1999, 2001, 2004, 2009, 2014 and 2017.

Representative copies of the 1976, 1982, 1994, 1999, 2001, 2004, 2009 and 2017 aerial photographs reviewed can be found in ***Appendix C*** of this report. A summary of the aerial photograph review is as follows:

TABLE: AERIAL PHOTOGRAPHS

Flight (Year) & Scale	Condition/Use	
1976 Unknown	PROPERTY	Residential House & Agricultural with Pond
	SURROUNDING PROPERTIES	
		North: Agricultural
		East: Agricultural
		South: Agricultural
		West: Residential & Agricultural

TABLE: AERIAL PHOTOGRAPHS		
Flight (Year) & Scale	**Condition/Use**	
1982 Unknown	PROPERTY	Residential House & Agricultural with Pond
	SURROUNDING PROPERTIES	
		North: Agricultural
		East: Agricultural
		South: Agricultural
		West: Agricultural

TABLE: AERIAL PHOTOGRAPHS		
Flight (Year) & Scale	**Condition/Use**	
1994 Unknown	PROPERTY	Residential House & Agricultural with Pond
	SURROUNDING PROPERTIES	
		North: Agricultural
		East: Agricultural
		South: Agricultural
		West: Agricultural

TABLE: AERIAL PHOTOGRAPHS		
Flight (Year) & Scale	**Condition/Use**	
1999 Unknown	PROPERTY	Industrial Lot. Industrial Boulevard is present, but not paved. Pond has been filled in.
	SURROUNDING PROPERTIES	
		North: Agricultural
		East: Commercial – Americold, Inc.
		South: Undeveloped – Wooded
		West: Agricultural

TABLE: AERIAL PHOTOGRAPHS		
Flight (Year) & Scale	**Condition/Use**	
2001 Unknown	PROPERTY	Industrial Lot. Industrial Boulevard is present, but not paved.
	SURROUNDING PROPERTIES	
		North: Commercial – Warehouse (500 Industrial Blvd.)
		South: Undeveloped – Wooded past Railroad Tracks
		East: Commercial – Americold (Cold Storage Warehouse) (203 Industrial Blvd.)
		West: Agricultural

TABLE: AERIAL PHOTOGRAPHS		
Flight (Year) & Scale	**Condition/Use**	
2004, 2009, 2014 & 2017 Unknown	PROPERTY	Industrial Lot. Industrial Boulevard is present, but not paved.
	SURROUNDING PROPERTIES	
	North:	Commercial – Warehouse (500 Industrial Blvd.)
	South:	Undeveloped, Wooded & Residential
	East:	Commercial – Americold (Cold Storage Warehouse) (203 Industrial Blvd.)
	West:	Agricultural

3.2.2 Fire Insurance Maps

Sanborn Fire Insurance Maps were historically produced for urban areas and utilized for determining fire hazards. When available, these maps are reviewed for further documentation concerning the historical use of the Property and surrounding area. Sanborn Fire Insurance Maps were not available from Environmental Data Resources, Inc. (EDR) for the Property.

3.2.3 City Directories

City Directories were not available for the Property.

3.2.4 Recorded Land Title Records/Property Tax Files

Tax records available at the Pope County Courthouse Tax Assessor's Office website were reviewed for the Property. According to these records, City of Russellville is the current owner of the Property.

No environmental easements or liens were identified during the records review.

3.2.5 Chain-of-Title Search

A 60-year chain-of-title search was not provided for this assessment. Historical use of the Property was researched utilizing other standard historical sources. However, chain-of-title was referenced in the previous Phase I ESA (EEG Project #97-304). The entire chain-of-title report can be provided on CD upon request.

3.2.6 Other Maps & Data

Solid waste illegal dump data files were reviewed on the ADEQ website. No complaints or inspections were identified for the subject Property.

3.3 Environmental Database Records Review

Environmental Data Resources, Inc. (EDR) conducted a search of available environmental records. The EDR Site Assessment Report meets the regulatory records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-13. Discrepancies may exist between EDR listings and the findings of EEG regarding sites of environmental concern. Federal and state-listed facilities may not be plotted in their correct locations or may be listed as unmapped sites due to inadequate address data that will not allow sites to be correctly geocoded. When discrepancies occur, the findings of EEG's site visit and records review will take precedence over information provided by EDR. Unless described in one or more of the following applicable sections, the unmapped State-listed facilities identified in the EDR Site Assessment Report are located beyond the prescribed search radii. The executive summary from the EDR Site Assessment Report for the Property is included in ***Appendix D*** of this report. The entire EDR report can be provided on CD upon request and can be made available for 180 days.

The following regulatory information concerning recognized environmental conditions at facilities located within the search radii was reported to EEG by EDR.

3.3.1 Federal Database Records

TABLE: FEDERAL DATABASE RECORDS

List	AMSD*	On Property	Adjoining Property	<0.125 Mile	0.125 to 0.25 Mile	0.25 to 0.5 Mile	0.5 to 1 Mile
Federal NPL Site List	1.0 mile / 1.6 km	0	0	0	0	0	0
Federal Delisted NPL Site List	0.5 mile / 0.8 km	0	0	0	0	0	
Federal SEMS List	0.5 mile / 0.8 km	0	0	0	0	0	
Federal SEMS-ARCHIVE List	0.5 mile / 0.8 km	0	0	0	0	0	
Federal RCRA CORRACTS Facilities List	1.0 mile / 1.6 km	0	0	0	0	0	0
Federal RCRA Non-CORRACTS TSD Facilities List	0.5 mile / 0.8 km	0	0	0	0	0	
Federal RCRA Generators List	Property & Adjoining Properties	0	0				
Federal Institutional/Engineering Controls Registries	Property	0					
Federal ERNS List	Property	0					
Fuels Program List	0.25 mile / 0.4 km	0	0	0	0		

**Approximate Minimum Search Distance, in miles, pursuant to ASTM E 1527-13, Section 8.2.1*

3.3.1.1 NPL List

The EPA publishes the National Priorities List (NPL) of uncontrolled or abandoned hazardous waste sites that have been identified for priority remedial actions under the Superfund Program. A review of the list indicated the Property was not identified and that no NPL sites exist within a 1-mile radius of the Property.

3.3.1.2 Delisted NPL List

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(3), sites may be deleted from the NPL where no further response is appropriate. A review of the list indicated the Property was not identified and that no delisted NPL sites exist within a 1-mile radius of the Property.

3.3.1.3 SEMS List

EEG also reviewed the EPA's list of known or potential hazardous waste sites within the zip code area of the Property. The SEMS (Superfund Enterprise Management System) list, formerly known as CERCLIS, contains sites which are either proposed to be on or are on the NPL and the sites which are in the screening and assessment phase for possible inclusion on the NPL. A site's presence on the SEMS list in no way infers a level of federal activity at that site, nor does it indicate that hazardous conditions necessarily exist at that location. No SEMS sites were listed within a 0.5-mile radius of the Property.

3.3.1.4 SEMS-ARCHIVE List

The SEMS-ARCHIVE list contains no further interest under the Federal Superfund Program based on available information. The SEMS-ARCHIVE list, formerly known as the CERCLIS-NFRAP, includes sites that have been removed and archived from the inventory of SEMS sites. SEMS-ARCHIVE status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site. No SEMS-ARCHIVE sites were listed within a 0.5-mile radius of the Property.

3.3.1.5 RCRA CORRACTS & Non-CORRACTS TSD Facilities List

EEG reviewed the list of facilities that treat, store or dispose of hazardous waste (TSDs). The EPA under the Resource Conservation and Recovery Act (RCRA) publishes the list. Neither the Property nor properties immediately adjoining the Property were listed as TSD facilities. No RCRA CORRACTS facilities were located within a 1-mile radius of the Property. No RCRA Non-CORRACTS TSD facilities were located within a 0.5-mile radius of the Property.

3.3.1.6 RCRA Generator List

In addition to RCRA TSD facilities, EEG also reviewed the RCRA Program's list of hazardous waste generators. Neither the Property nor properties immediately adjoining the Property were listed as RCRA generator facilities.

3.3.1.7 Institutional Control/Engineering Control Registries

The US Institutional Controls Registry is a listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls. The US Engineering Controls Registry is a listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. The Property was not identified on the Institutional Control/Engineering Control Registries.

3.3.1.8 Emergency Response Notification System (ERNS) List

The ERNS is a national database containing information from spill reports concerning oil and hazardous substances made to federal authorities. The Property was not identified as an ERNS facility.

3.3.1.9 Fuels Program List

The Fuels Program is a national database containing facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations. No Fuels Program sites were listed within a 0.25-mile radius of the Property.

3.3.2 State Database Records

TABLE: STATE DATABASE RECORDS

List	AMSD*	On Property	Adjoining Property	<0.125 Mile	0.125 to 0.25 Mile	0.25 to 0.5 Mile	0.5 to 1 Mile
State Lists of Hazardous Waste Sites Identified for Investigation or Remediation NPL-Equivalent	1.0 mile / 1.6 km	0	0	0	0	0	0
State Lists of Hazardous Waste Sites Identified for Investigation or Remediation SEMS-Equivalent	0.5 mile / 0.8 km	0	0	0	0	0	
Landfill and/or Solid Waste Disposal Site List	0.5 mile / 0.8 km	0	0	0	0	0	
Leaking UST List	0.5 mile / 0.8 km	0	0	0	0	0	
Registered Storage Tank List	Property & Adjoining Property	0	0				
State and Tribal Institutional/Engineering Controls Registries	Property	0					
Voluntary Cleanup Program Sites	0.5 mile / 0.8 km	0	0	0	0	0	
Brownfield Program Sites	0.5 mile / 0.8 km	0	0	0	0	0	

**Approximate Minimum Search Distance, in miles, pursuant to ASTM E 1527-13, Section 8.2.1*

3.3.2.1 State Priority List

The State lists facilities that are identified as NPL sites that have been prioritized for funding and those that are identified as State Priority List (SPL) Sites. The Priority List contains sites that have been ranked to receive funding for remedial actions and/or investigation under the Hazardous Substance Remedial Action Trust Fund. A review of the list indicated the Property was not identified and that no SPL sites exist within a 1-mile radius of the Property.

3.3.2.2 SEMS List

EEG also reviewed the State's list of known or potential hazardous waste sites within the zip code area of the Property. The SEMS (Superfund Enterprise Management System) list, formerly known as CERCLIS, contains sites which are either proposed to be on or are on the NPL and the sites which are in the screening and assessment phase for possible inclusion on the NPL. A site's presence on the SEMS list in no way infers a level of federal activity at that site, nor does it indicate that hazardous conditions necessarily exist at that location. No SEMS sites were listed within a 0.5-mile radius of the Property.

3.3.2.3 Landfill and/or Solid Waste Disposal Site List

The State maintains a list of facilities permitted as solid waste landfills, incinerators or transfer stations. No permitted landfill and/or solid waste disposal sites were identified within a 0.5-mile radius of the Property.

3.3.2.4 LUST Site List

Reported leaks from underground storage tanks are compiled by the State in a leaking underground storage tank (LUST) database. Neither the Property nor its adjoining properties are listed as LUST sites. No listed LUST sites were identified within a 0.5-mile radius of the Property.

3.3.2.5 Registered Storage Tank Site List

The State regulates and maintains a list of registered underground storage tank (UST) facilities that may include aboveground storage tanks (AST). No registered storage tanks were identified on the Property or on an adjoining Property.

3.3.2.6 Institutional Control/Engineering Control Registries

The ADEQ Institutional Controls Registry is a listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls. The ADEQ Engineering Controls Registry is a listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. The Property was not identified on the Institutional Control/Engineering Control Registries.

3.3.2.7 Voluntary Cleanup Site

Voluntary Cleanup Program Sites are compiled by the State in a voluntary cleanup program site (VCP) database. Neither the Property nor its adjoining properties are listed as VCP sites. No listed VCP sites were identified within a 0.5-mile radius of the Property.

3.3.2.8 Brownfield Site

Brownfield Projects are compiled by the State in a Brownfield database. Neither the Property nor its adjoining properties are listed as Brownfield sites. No listed Brownfield sites were identified within a 0.5-mile radius of the Property.

3.3.3 High Risk Historical Records

The following databases fall within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns but may not show up in current government records searches.

TABLE: STATE DATABASE RECORDS

List	On Property	Adjoining Property	<0.125 Mile	0.125 to 0.25 Mile	0.25 to 0.5 Mile	0.5 to 1 Mile
EDR Manufactured Gas Plant	0	0	0	0		
EDR US Historical Auto Station	0	0	0	0		
EDR US Historical Cleaners	0	0	0	0		

3.3.3.1 Historical Manufactured Gas Plant (MGP)

Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

A review of the list indicated the Property was not identified and that no Historical Manufactured Gas Plant sites exist within a 1-mile radius of the Property.

3.3.3.2 Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDFR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Neither the Property nor its adjoining properties are listed as a Historical Auto Station site. No listed Historical Auto Station sites were identified within a 0.25-mile radius of the Property.

3.3.3.3 Historical Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to, dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry, etc.

Neither the Property nor its adjoining properties are listed as a Historical Dry Cleaners site. No listed Historical Dry Cleaners sites were identified within a 0.25-mile radius of the Property.

A review of the list of unmapped sites indicated that none of the unmapped sites appeared to be within the appropriate AMSD.

3.4 Summary of Prior ESAs & Environmental Checklists

EEG performed Phase I Environmental Site Assessments on the subject site in 1997 and 2005, EEG Project #97-304 and #05-0115-076. These reports were used as a reference during the current investigation. No recognized environmental conditions were sited either on the Property or on surrounding properties. The 2005 report indicated the following notable findings and ***business environmental risk***.

- Wetlands are illustrated on the Property as Palustrine, unconsolidated bottom, Permanently Flooded, Diked/Impounded (PuBHh). This designation is for the pond that was historically present on the Property.

- EEG noted a water well on the central portion of the Property formerly utilized for potable water for the former residential home located on the site.

- EEG observed three waste tires on the southwest portion and an area of dumping on the south-central portion of the Property. Materials observed were domestic refuse, furniture, appliances, and a large pile of railroad crossties. No regulated materials were noted, with the exception of the railroad crossties that contain creosols.

4.0 PROPERTY RECONNAISSANCE & INTERVIEWS

A site visit was performed by Mr. Keith Zimmerman, Environmental Professional, on June 8, 2018. The observations noted in this report apply to the site as they appeared on that day. As part of this investigation, EEG performed a walk-through investigation of the site and visually evaluated the exterior of the properties adjoining the Property. The inspector was unaccompanied during the site investigation. The weather at the time of the site visit was partly cloudy and approximately 91 degrees Fahrenheit. EEG visually and/or physically observed all areas of the site from the adjoining property boundaries and by walking and driving the Property.

4.1 General Property Characteristics

4.1.1 Solid Waste Disposal

No solid waste is generated at the Property. No dumpsters are located on the Property.

4.1.2 Sewage Discharge & Disposal

Sanitary sewage is not generated at the Property.

4.1.3 Surface Water Drainage

Storm water collecting on the Property is absorbed into the ground and flows across the Property in a southerly direction, exiting the Property onto adjoining properties.

4.1.4 Heating & Cooling

No buildings exist on the Property.

4.1.5 Wells & Cisterns

During the 2005 site assessment, EEG noted a water well on the central portion of the Property formerly utilized for potable water for the former residential home located on the site. Due to heavy vegetative growth, EEG was unable to locate the well during this site assessment.

4.1.6 Wastewater

Industrial wastewater is not generated on the Property.

4.1.7 Additional Property Observations

EEG observed minor dumping of refuse and waste tires along the access road on the south portion of the Property. Railroad ties and barbed wire were also observed on the Property. The ties appear to be old fence posts that were abandoned.

4.2 Environmental Hazards

4.2.1 Hazardous Substances & Petroleum Products Usage

No hazardous substances or petroleum products are used or stored at the Property.

4.2.2 Containers & Drums

No containers or drums were observed on the Property.

4.2.3 Disposal Locations of Regulated/Hazardous Wastes
No hazardous or biohazardous waste was found at the Property.

4.2.4 Stained Soil or Stressed Vegetation
EEG observed no evidence of release exemplified by stained ground cover or stressed vegetation.

4.2.5 Landfills
No landfill activities were identified on the Property.

4.2.6 Pits, Lagoons, Sumps, Floor Drains, Drywells & Catch Basins
EEG did not identify any evidence of pits, sumps, drywells or catch basins on the Property.

4.2.7 On-site Storage Tanks
Historically, underground storage tanks (USTs) and aboveground storage tanks (ASTs) have been documented as being point sources for surface and subsurface contamination. Corrosion of tank materials and improper filling procedures are factors known to contribute to soil and possible groundwater contamination. Determining the presence and locations of USTs and ASTs as part of this investigation is considered essential in assessing this potential contamination source. Visual inspection of the Property included investigation of the site to identify possible indicators associated with USTs and ASTs such as leakage and vegetative distress. Review of tank registration records and visual inspection of the property are conducted to determine the possible existence of USTs and ASTs in the vicinity of the Property. It must be noted, however, that a lack of registration records and the absence of certain physical site conditions or characteristics may restrict or prevent the definite determination regarding the presence, number of and contents of USTs and ASTs possibly located at the Property.

4.2.7.1 Aboveground Storage Tanks
No ASTs were identified on the Property.

4.2.7.2 Underground Storage Tanks
No USTs were identified on the Property.

4.2.8 Polychlorinated Biphenyls (PCBs)
Environmental Protection Agency (EPA) Rule 40 CFR Part 761 states in part that the owner of equipment contaminated with polychlorinated biphenyls (PCBs), such as electrical transformers, is responsible for any environmental liabilities caused by PCB contamination of the environment through leakage, fires, etc. PCB transformer owners must register the transformers with owners of all buildings located within 30 meters of the PCB transformer. A PCB transformer is one containing 500 or more parts per million (ppm) of PCBs. However, if PCB content is unknown (untested by laboratory), the transformers must be considered PCB-contaminated (50 – 499 ppm).

Each large low-voltage capacitor, small capacitor normally used in alternating current circuits and fluorescent light ballast manufactured between July 1, 1978, and July 1, 1988, that does not contain PCBs must be marked by the manufacturer with the statement, “No PCBs.” This marking must be placed in a position on the exterior of the item so that any person inspecting or servicing the item can easily read it.

A visual inspection identified two pole-mounted transformers located on the south portion of the Property, north of the railroad tracks. The transformers were not labeled concerning their PCB content. Units not identified with the "No PCBs" label must be assumed to be PCB-containing until tested. The units appeared to be intact with no leakage, staining or discoloration noted. No other suspect PCB-containing articles were identified on the Property.

4.2.9 Additional Property Hazard Observations
No additional hazards were observed on the Property.

4.2.10 Adjoining Property Hazard Observations
No additional hazards were observed on the adjoining properties.

4.3 Interviews

EEG conducted representative interviews with Suzy Griffin and Bill Clark. The interviews were conducted to determine if the individuals were aware of any recognized environmentally related problems or concerns at the Property. Specific information obtained from the noted individuals appears in the appropriate sections of this report.

An interview was conducted on June 15, 2018, with Ms. Suzy Griffin, Executive Vice President of River Valley Economic Development. Ms. Griffin stated the City owns and maintains the Property, and River Valley Economic Development markets and shows the Property. She indicated that no work has been done on the Property since the last site assessment was performed. Ms. Griffin believes the water well still remains on the Property. According to Ms. Griffin, no known environmental problems exist currently on the Property.

An interview was conducted on June 18, 2018, with Mr. Bill Clark, Code Enforcer for City of Russellville. Mr. Clark indicated that a complaint was made two years ago regarding trash dumped on the Property. An inspection revealed minor dumping of trash on the southern portion of the Property that the owner cleaned up when notified. According to Mr. Clark, no known environmental problems exist currently on the Property.

4.4 User Provided Information

The AAI questions that require completion by the user are outlined in a User Questionnaire that was provided to the client during this Phase I ESA project. In summary, the User Questionnaire includes AAI questions pertaining to environmental cleanup liens, activity use and limitation records (AULs) such as Institutional Controls, specialized knowledge or experience of the person seeking to qualify for the LLP, relationship of the purchase price to the fair market value of the property if it were not contaminated, commonly known or reasonably ascertainable information about the property and the degree of obviousness of the presence of likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation.

The Client has not reported to EEG the presence of any environmental liens currently recorded against the Property. A User Questionnaire, as outlined in ASTM E1527 -13 X3, is included in ***Appendix G*** and was completed by Ms. Suzy Griffin of River Valley Economic Development on June 18, 2018; any information obtained from the questionnaire appears in the appropriate sections of this report.

4.5 Non-Scope Services

4.5.1 Asbestos-Containing Materials (ACM)

Asbestos is a general term applied to a wide variety of naturally occurring fibrous minerals. Historically, asbestos remained a curiosity for centuries, with negligible production until the beginning of the twentieth century when it was used as thermal insulation for steam engines and as an ingredient in building materials. Because asbestos is strong, incombustible and corrosion-resistant, it was widely used in buildings constructed prior to 1975. Asbestos was used in over 3,000 types of construction materials.

Unfortunately, the unique physical characteristics of asbestos that make it a good building material are the same characteristics that make it harmful. When inhaled in sufficient quantities, asbestos fibers can cause serious health problems. Although many substances are listed as suspected carcinogens, asbestos is one of the few substances that are a proven carcinogen. For these reasons, federal, state and local governments now regulate the use and removal of ACM.

No buildings exist on the Property; therefore, potential asbestos-containing materials were not addressed as a part of this assessment.

4.5.2 Radon

Radon is an invisible, odorless, radioactive gas produced by the decay of uranium in rock and soil. Radon gas enters a building through cracks in the foundation, areas surrounding drainage pipes, and other openings in the foundation and walls. Buildings with basements and concrete slab foundations are more susceptible to elevated radon gas levels. The radon decay products, once inside a building, may become attached to dust particles and inhaled, or the decayed radioactive particles alone may be inhaled and cause damage to lung tissue.

Radon is measured in picocuries per liter of air (pCi/L). The EPA has established the recommended safe radon level at 4 pCi/L. Long-term and short-term monitoring devices are available for radon level detection.

EEG reviewed Area Radon Information as presented in the EDR report. Pope County, Arkansas, is identified as being located within EPA Radon Zone 3, which indicates that indoor average levels in Zone 3 are less than 2.0 pCi/L. The EDR report noted that 53 sites within the Property zip code of 72801 have been tested. The average indoor levels of radon were 1.015 pCi/L on the first floor and 5.933 pCi/L in the basement.

If more information is needed regarding prevalent radon levels, further investigation will be required. Such investigation may include short-term and/or long-term testing for radon inside existing on-site structures or future construction on the subject Property.

4.5.3 Lead-Based Paint

No buildings exist on the Property. Therefore, lead-based paint was not an issue.

4.5.4 Lead in Drinking Water

According to the 2017 Annual Water Quality Report obtained from the City Corporation website (www.citycorporation.com/reports.htm), the municipal water supply in the City of Russellville is within state and federal standards regarding lead in drinking water.

4.5.5 Wetlands

According to the U.S. Fish and Wildlife National Wetlands Inventory Data Mapper website http://www.fws.gov/wetlands/Data/Mapper.html, wetlands are present on the Property. The wetland is illustrated as Palustrine, Unconsolidated Bottom, Permanently Flooded, Diked/Impounded (PuBHh). This designation is for the agricultural pond that was historically present on the Property, north of the farm structures. Ponds are typically considered artificial wetlands. The pond, however, is no longer present on the Property. According to documents provided by the client, approval to drain the pond was given by the Corps of Engineers. A copy of the Corps of Engineers letter is included in ***Appendix D*** of this report.

5.0 EVALUATION: FINDINGS, OPINIONS & CONCLUSIONS

5.1 Findings

- A water well is located on the Property.
- EEG observed minor dumping of refuse and waste tires on the Property.
- According to U.S. Fish and Wildlife National Wetlands Inventory, wetlands are present on the Property.

5.1.1 On-Site Environmental Conditions

No recognized environmental conditions were identified on the Property.

5.1.2 Off-Site Environmental Conditions

No off-site environmental conditions were identified as recognized environmental conditions in connection with the Property.

5.2 Opinions

During the 2005 site assessment, EEG noted a water well on the central portion of the Property formerly utilized for potable water for the former residential home located on the site. Due to heavy vegetative growth, EEG was unable to locate the well during this site assessment. If future plans for the Property do not include utilization of the well, some cost would be associated with proper abandonment and closure according to state regulations. EEG does not consider the well a recognized environmental condition but a ***business environmental risk***.

EEG observed minor dumping of refuse and waste tires along the access road on the south portion of the Property. Railroad ties and barbed wire were also observed on the Property. The ties appear to be old fence posts that were abandoned. This is not considered a recognized environmental condition but a ***business environmental risk*** due to the cost associated with proper cleanup and disposal.

According to the U.S. Fish and Wildlife National Wetlands Inventory Data Mapper website http://www.fws.gov/wetlands/Data/Mapper.html, wetlands are present on the Property. The wetland is illustrated as Palustrine, Unconsolidated Bottom, Permanently Flooded, Diked/Impounded (PuBHh). This designation is for the agricultural pond that was historically present on the Property, north of the farm structures. Ponds are typically considered artificial wetlands. The pond, however, is no longer present on the Property. According to documents provided by the client, approval to drain the pond was given by the Corps of Engineers. A copy of the Corps of Engineers letter is included in ***Appendix D*** of this report.

5.3 Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of Lots 1 & 5 of East End Industrial Park located in Russellville, Pope County, Arkansas, the Property. Any exceptions to or deletions from this practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property.

6.0 CONSULTANT INFORMATION

6.1 Project Personnel

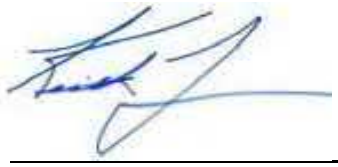
Site work and research for this Phase I ESA was conducted by the following:

Mr. Keith Zimmerman, P.G.
Environmental Professional

I declare that to the best of my professional knowledge and belief, I meet the definition of Environmental professional as defined in § 312.10 of 40 CFR 312; and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

6.2 Report Certification

I certify that this assessment was performed under my direction and supervision, that I have reviewed and approved the report, and that the methods and procedures employed in the development of the report to conform to industry standards.



Mr. Keith Zimmerman, P.G.
President/Senior Project Manager

6.3 Report Reliance

This assessment was performed at the request of the Client utilizing methods and procedures consistent with good commercial and customary practice designed to conform to acceptable industries standards. The independent conclusions represent EEG's best professional judgment based on the conditions that existed and the information and data available to us during the course of this assignment. Factual information regarding operations, conditions and test data provided by the Client, owner, or their representative has been assumed to be correct and complete. The report may be distributed and relied upon by the Client, its successors and assigns. Reliance on the information and conclusions presented in this report by any other party(ies) is not authorized by EEG.

Appendix

Appendix A
Scope of Work

ENVIRONMENTAL ENTERPRISE GROUP, INC.

PHASE I ENVIRONMENTAL SITE ASSESSMENTS

Each Phase I Environmental Site Assessment is performed in accordance with the standards set forth in ASTM Designation E 1527-13 and the following Scope of Work Summary. EEG will also perform these assessments according to specific lending institution guidelines when applicable.

Purpose and Scope of Work

The purpose of a Phase I Environmental Site Assessment is to review past and present land-use practices to identify recognized environmental conditions at the site. The qualitative assessment will be accomplished by, and limited to, a review of presently and readily available information regarding past and current land use for indications of the manufacture, generation, use, storage and/or disposal of hazardous substances at the site, and site reconnaissance to observe existing site conditions.

Specifically, the scope of work entails:

1) Performing a site visit to identify any obvious visual signs of contamination. (It is important that EEG is allowed access to all portions of the subject property, including storage area(s), and basement(s), if applicable. If access is unavailable to any portion of the subject property, EEG's ability to complete the scope of services described herein may be hindered);

2) Investigation of past and present land use. (Should past use dictate, review of previous site usage to identify the possibility of on-site release or disposal of manufacturing or other waste);

3) Investigation of adjacent land use and possible source(s) of contamination;

4) Review of pertinent readily available documents and maps regarding geologic and hydrogeologic conditions for the site;

5) Review and interpretation of available historical aerial photographs of the site and vicinity and provide representative copies of the photographs reviewed;

6) Review of existing facility for potential PCB or PCB-contained electrical equipment (if applicable);

7) Review county, state, and U.S. Environmental Protection Agency (EPA) lists of known or potential hazardous waste sites or landfills and sites currently under investigation for environmental violations;

8) Conduct inquiries to applicable municipal, county, and state regulatory agencies for information regarding building or environmental permits, environmental violations or incidents and/or status of enforcement actions at the subject property;

9) Conduct interviews, if appropriate, with subject property owner or manager and maintenance personnel, if available, to evaluate site history and operation and maintenance procedures;

10) Non-Scope Services: Review facility for potential presence of Asbestos-Containing Building Materials, Radon, Lead-Based Paint, Lead-in-Drinking-Water, and potential Wetlands; and,

11) Prepare a report of findings of the above investigation including color photographic documentation of the subject site and site maps. The report does not include a recommendation to perform a Phase II Environmental Site Assessment to evaluate environmental concerns or recognized environmental conditions disclosed during Phase I. Phase II typically includes but is not limited to, additional sampling and analysis of water, soil and electrical equipment fluid.

Appendix B
Figures

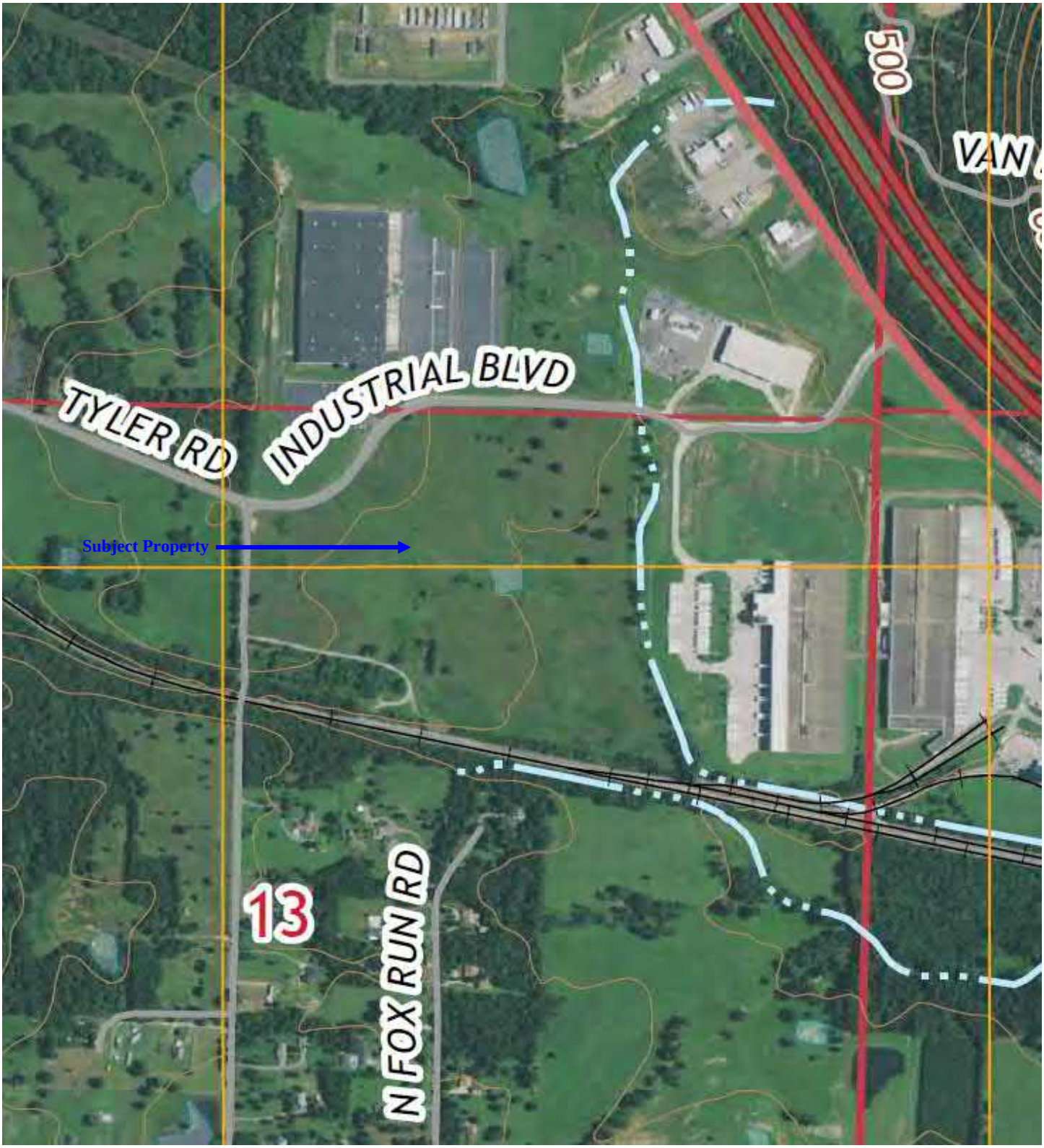


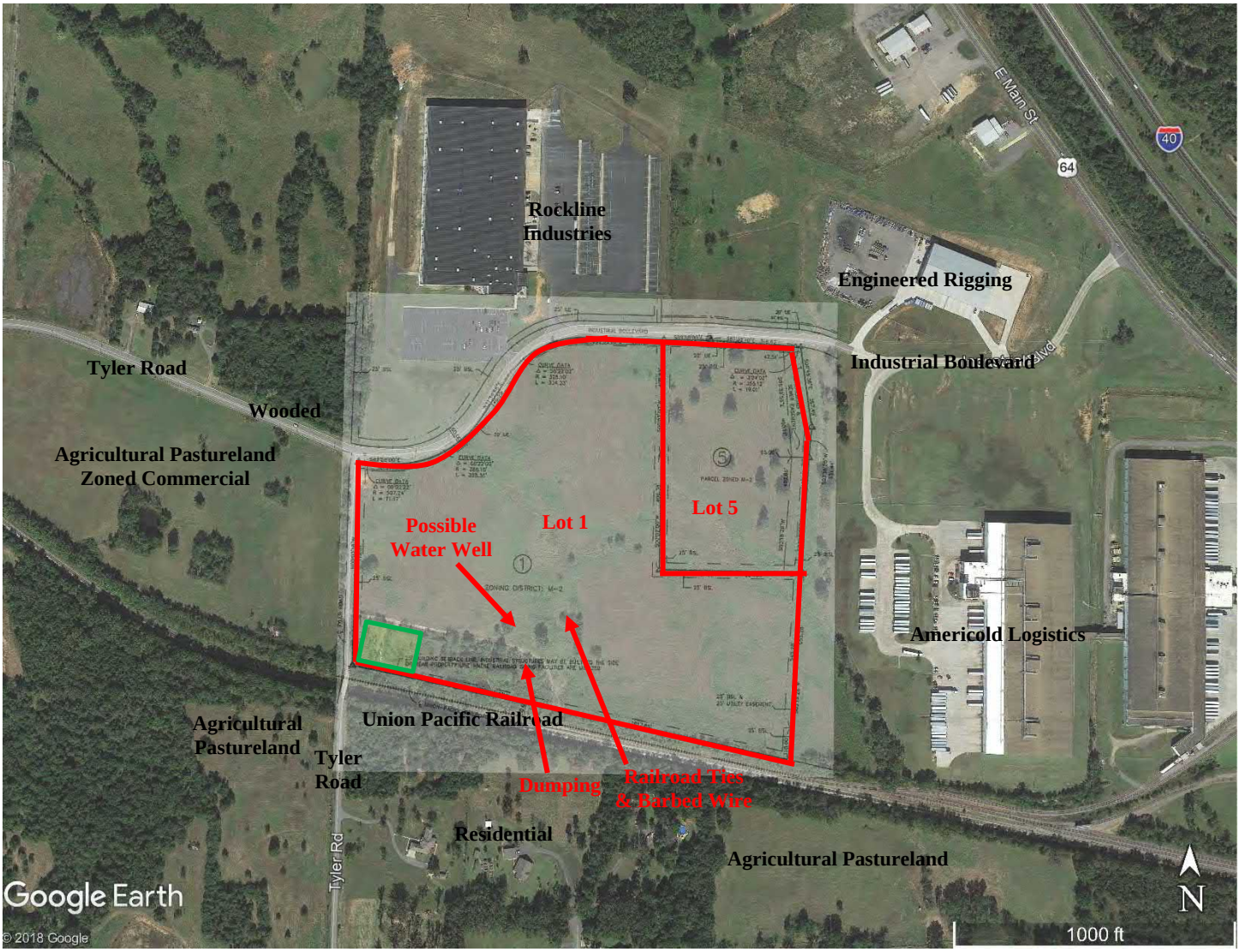
Figure 1: 2017 Russellville East Topographic Map

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

EEG Project #18-0115-018

EEG
Environmental
Enterprise Group, Inc.

www.eegonline.com



2014 Aerial Photograph

Approximate Property Boundary

Area of Observed Dumping

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Figure:*
18-0115-018	**2**

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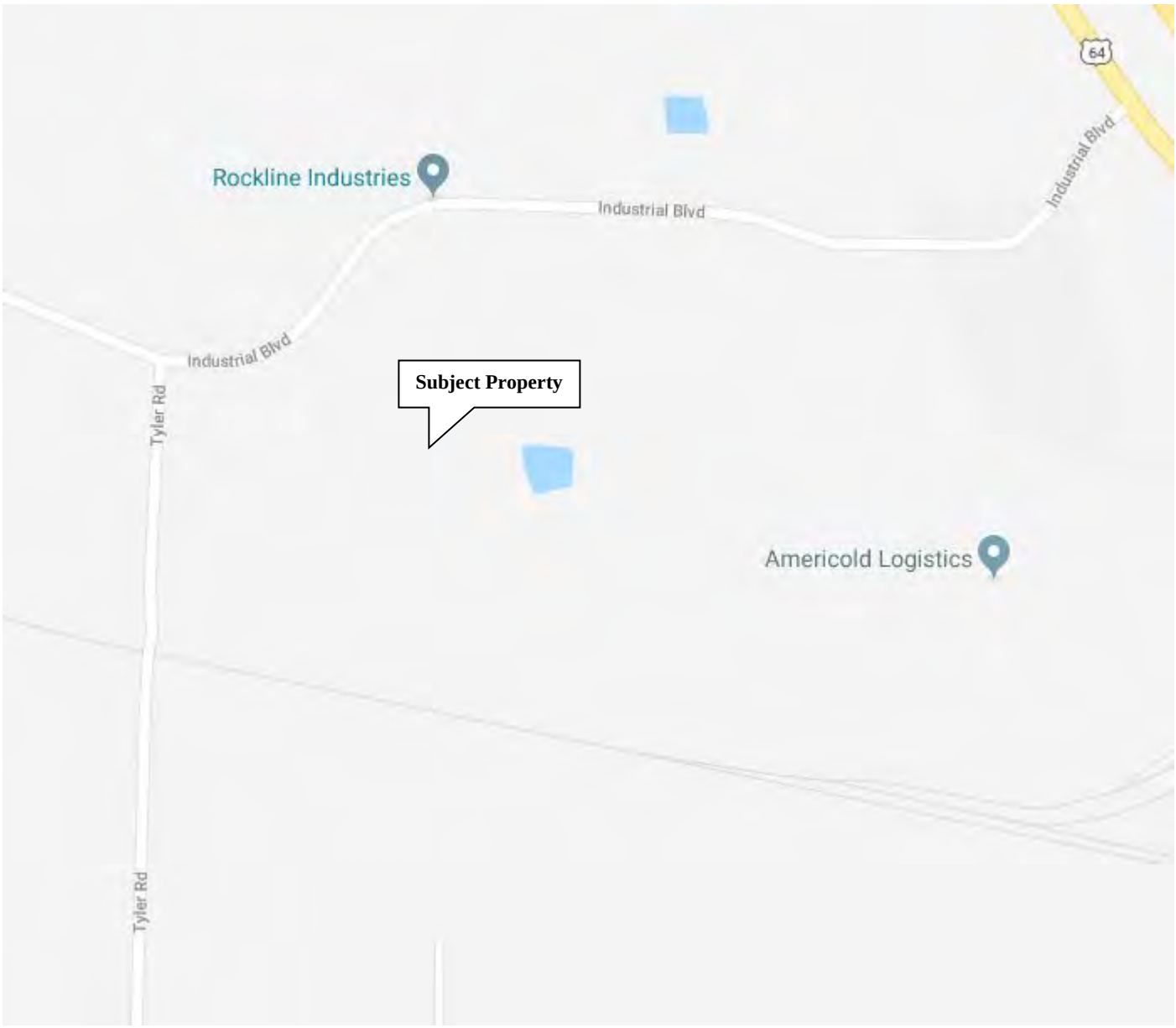

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Figure:*
18-0115-018	**3**

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Appendix C
Historical Maps and Photographs

1976 Aerial Photograph

Approximate Property Boundary

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Appendix:*
18-0115-018	**C**

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1982 Aerial Photograph

Approximate Property Boundary

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Appendix:*
18-0115-018	**C**

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1994 Aerial Photograph

Approximate Property Boundary

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Appendix:*
18-0115-018	**C**

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1999 Aerial Photograph

Approximate Property Boundary

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Appendix:*
18-0115-018	**C**

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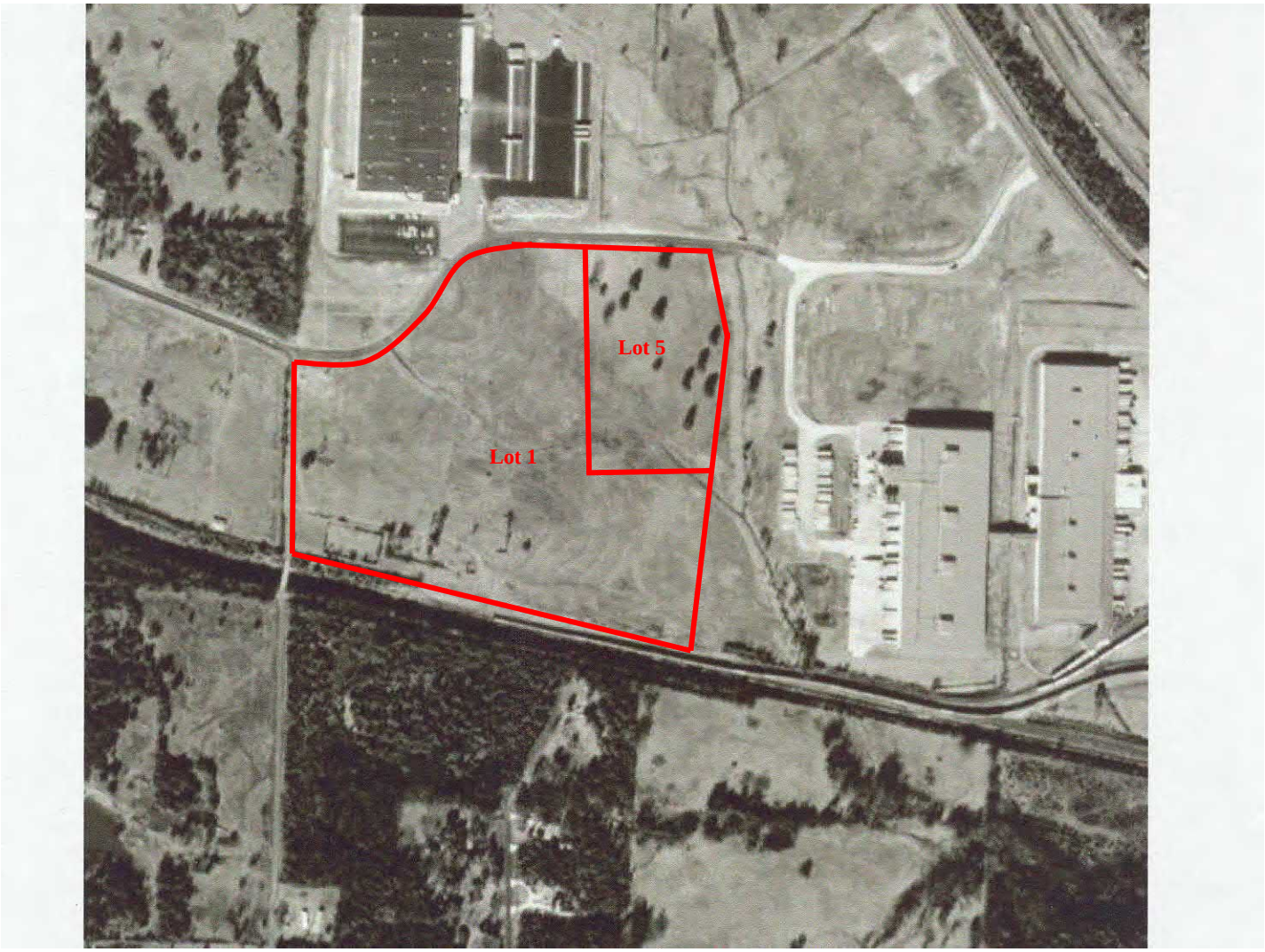

2001 Aerial Photograph

Approximate Property Boundary

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Appendix:*
18-0115-018	**C**

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2004 Aerial Photograph

Approximate Property Boundary

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Appendix:*
18-0115-018	**C**

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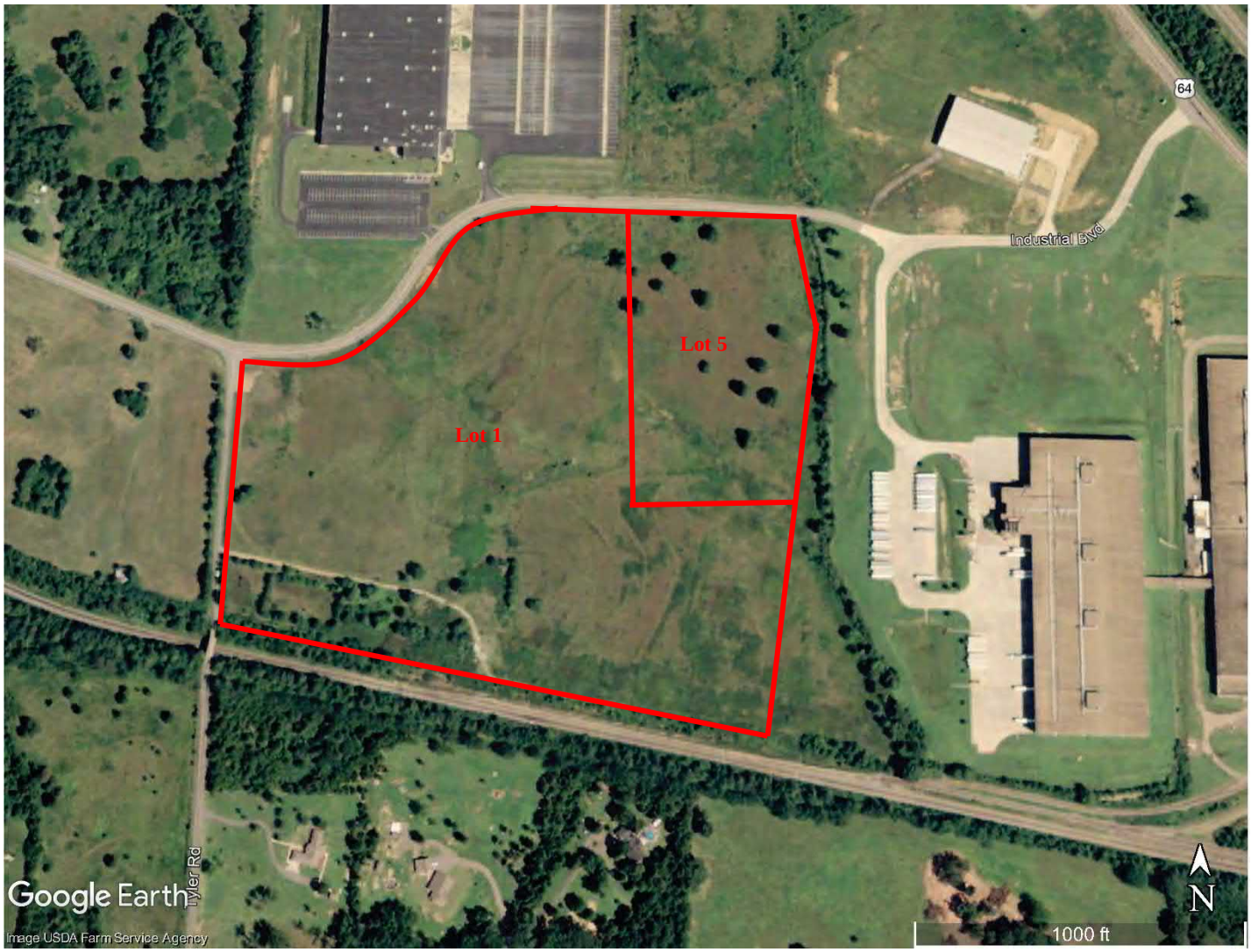

2009 Aerial Photograph

Approximate Property Boundary

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Appendix:*
18-0115-018	**C**

Environmental Enterprise Group, Inc.

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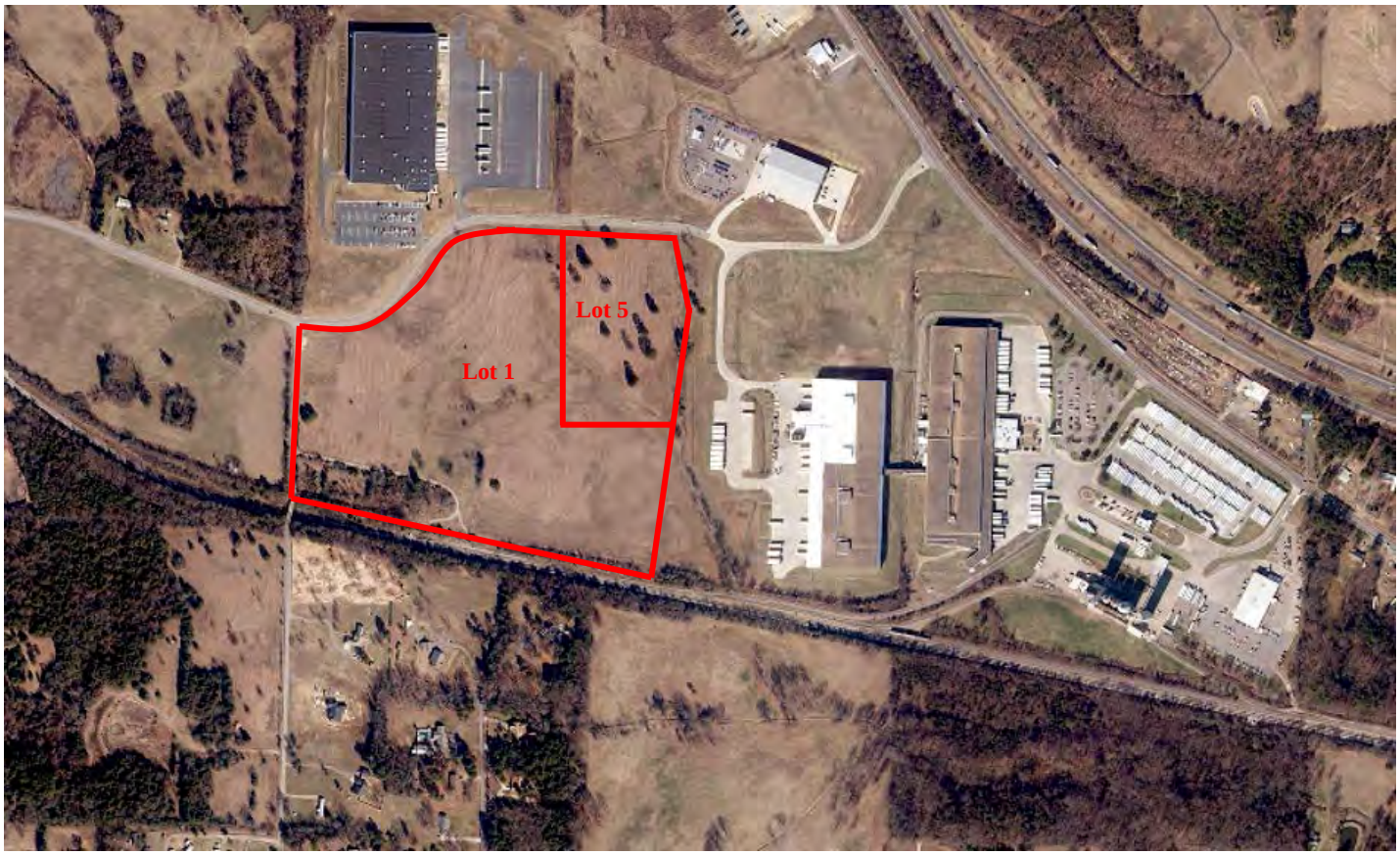

2017 Aerial Photograph

Approximate Property Boundary

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

Project Number:	*Appendix:*
18-0115-018	**C**

EEG
Environmental
Enterprise Group, Inc.

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Appendix D
Environmental Database Research

18-0115-018

Vacant Industrial Property
S13-T7N-R20W
Russellville, AR 72802

Inquiry Number: 5326371.2s
June 08, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

S13-T7N-R20W
RUSSELLVILLE, AR 72802

COORDINATES

Latitude (North):	35.2620180 - 35° 15' 43.26''
Longitude (West):	93.0765750 - 93° 4' 35.67''
Universal Tranverse Mercator:	Zone 15
UTM X (Meters):	493034.6
UTM Y (Meters):	3901904.8
Elevation:	476 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	6064095 RUSSELLVILLE EAST, AR
Version Date:	2014
South Map:	6065189 HOLLA BEND, AR
Version Date:	2014

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20151020, 20150717
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
S13-T7N-R20W
RUSSELLVILLE, AR 72802

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	ROCKLINE INDUSTRIES,	500 INDUSTRIAL BLVD	FINDS, ECHO	Lower	959, 0.182, ENE
A2	ROCKLINE INDUSTRIES,	500 INDUSTRIAL BLVD	PERMITS	Lower	959, 0.182, ENE
B3	BUBBUS MOBILE HOME P	400 BLOCK OF WAREHOS	PERMITS	Lower	2150, 0.407, NNE
B4	BUBBUS MOBILE HOME P	400 BLOCK OF WAREHOS	FINDS	Lower	2150, 0.407, NNE
C5	AMERICOLD LOGISTICS	203 INDUSTRIAL BLVD	SPILLS, TIER 2	Lower	2509, 0.475, ESE
C6		203 INDUSTRIAL BLVD	ERNS	Lower	2509, 0.475, ESE
C7	AMERICOLD, RUSSELLEV	203 INDUSTRIAL BLVD	RMP	Lower	2509, 0.475, ESE
C8	AMERICOLD, RUSSELLEV	203 INDUSTRIAL BLVD	FINDS	Lower	2509, 0.475, ESE
C9	CARMAR VALLEY	203 INDUSTRIAL BLVD	FINDS, ECHO	Lower	2509, 0.475, ESE
C10	RUSSELLEVILLE VALLEY	203 INDUSTRIAL BLVD	RMP	Lower	2509, 0.475, ESE
C11	AMERICOLD LOGISTICS	203 INDUSTRIAL BLVD	RMP	Lower	2509, 0.475, ESE
D12	RELIANT ENERGY INC	4408 E MAIN ST	EDR Hist Auto	Lower	2699, 0.511, NE
D13	ARKLA ENERGY RESOURC	HIGHWAY 64 EST & POL	UST, PERMITS	Higher	2753, 0.521, NE
14	ROAD RUNNER #49	I-40 & COVE	UST, PERMITS	Higher	3002, 0.569, NE
E15	JW ALUMINUM	777 TYLER RD	RCRA-CESQG	Lower	3302, 0.625, NW
E16	J W ALUMINUM COMPANY	777 TYLER ROAD	AST	Lower	3302, 0.625, NW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

EXECUTIVE SUMMARY

State- and tribal - equivalent NPL

SHWS ---------- Hazardous Substance Remedial Action Trust Fund Priority List

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Facility Permit Database
SWID ---------- Solid Waste Illegal Dumps Database

State and tribal leaking storage tank lists

LTANKS ---------- Leaking Storage Tank Location Listing
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST ---------- Underground Storage Tank Listing
INDIAN UST ---------- Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

ENG CONTROLS ---------- Engineering Controls Sites Listing
INST CONTROL ---------- Institutional Control/Land Use Restriction Sites

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing
VCP ---------- Voluntary Cleanup Program Sites

State and tribal Brownfields sites

BROWNFIELDS ---------- Brownfields Projects

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY ---------- Recycling Directory
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory
IHS OPEN DUMPS ---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---------- Delisted National Clandestine Laboratory Register
CDL ---------- Methamphetamine Contaminated Properties Listing
US CDL ---------- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---------- CERCLA Lien Information

EXECUTIVE SUMMARY

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
SPILLS 90	SPILLS 90 data from FirstSearch
SPILLS 80	SPILLS 80 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
AIRS	Permitted Facility Emission & Stack Data
ASBESTOS	Asbestos Notification of Intent Database
COAL ASH	Coal Ash Disposal Site Listing
ENF	Consent Administrative Order, Notice of Violation Information Database
Financial Assurance	Financial Assurance Information Listing
AR Sludge	Poultry Sludge Permit Sites
UIC	Underground Injection Wells Database Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 12/11/2017 has revealed that there is 1 RCRA-CESQG site within approximately 0.75 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
JW ALUMINUM	777 TYLER RD	NW 1/2 - 1 (0.625 mi.)	E15	61

Federal ERNS list

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 01/16/2018 has revealed that there is 1 ERNS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
Not reported	203 INDUSTRIAL BLVD	ESE 1/4 - 1/2 (0.475 mi.)	C6	27

EXECUTIVE SUMMARY

State and tribal registered storage tank lists

UST: RST Owner & Facilities.

A review of the UST list, as provided by EDR, and dated 03/19/2018 has revealed that there are 2 UST sites within approximately 0.75 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ARKLA ENERGY RESOURC	***HIGHWAY 64 EST & POL***	***NE 1/2 - 1 (0.521 mi.)***	***D13***	***50***
Tank Status: PO Facility Id: 58000005 Facility Id: 58000005 ADEQ Facility ID: 58-00501				
ROAD RUNNER #49	***I-40 & COVE***	***NE 1/2 - 1 (0.569 mi.)***	***14***	***56***
Tank Status: PO Facility Id: 58000130 Facility Id: 58000130 ADEQ Facility ID: 58-00614				

AST: Aboveground Tank Database

A review of the AST list, as provided by EDR, and dated 03/19/2018 has revealed that there is 1 AST site within approximately 0.75 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
J W ALUMINUM COMPANY Facility Id: 58001689 Facility Id: 58001689 AFIN: 5800272	777 TYLER ROAD	NW 1/2 - 1 (0.625 mi.)	E16	63

ADDITIONAL ENVIRONMENTAL RECORDS

Records of Emergency Release Reports

SPILLS: Emergency Response Incidents database.

A review of the SPILLS list, as provided by EDR, and dated 04/08/2018 has revealed that there is 1 SPILLS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
AMERICOLD LOGISTICS	***203 INDUSTRIAL BLVD***	***ESE 1/4 - 1/2 (0.475 mi.)***	***C5***	***14***

Other Ascertainable Records

RMP: When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

A review of the RMP list, as provided by EDR, and dated 11/02/2017 has revealed that there are 3 RMP sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
AMERICOLD, RUSSELLEV	203 INDUSTRIAL BLVD	ESE 1/4 - 1/2 (0.475 mi.)	C7	27
RUSSELLEVILLE VALLEY	203 INDUSTRIAL BLVD	ESE 1/4 - 1/2 (0.475 mi.)	C10	39
AMERICOLD LOGISTICS	203 INDUSTRIAL BLVD	ESE 1/4 - 1/2 (0.475 mi.)	C11	44

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 02/21/2018 has revealed that there are 4 FINDS sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ROCKLINE INDUSTRIES,	***500 INDUSTRIAL BLVD***	***ENE 1/8 - 1/4 (0.182 mi.)***	***A1***	***8***
BUBBUS MOBILE HOME P	400 BLOCK OF WAREHOS	NNE 1/4 - 1/2 (0.407 mi.)	B4	14
AMERICOLD, RUSSELLEV	203 INDUSTRIAL BLVD	ESE 1/4 - 1/2 (0.475 mi.)	C8	38
CARMAR VALLEY	***203 INDUSTRIAL BLVD***	***ESE 1/4 - 1/2 (0.475 mi.)***	***C9***	***38***

ECHO: ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

A review of the ECHO list, as provided by EDR, and dated 01/13/2018 has revealed that there are 2 ECHO sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ROCKLINE INDUSTRIES,	***500 INDUSTRIAL BLVD***	***ENE 1/8 - 1/4 (0.182 mi.)***	***A1***	***8***
CARMAR VALLEY	***203 INDUSTRIAL BLVD***	***ESE 1/4 - 1/2 (0.475 mi.)***	***C9***	***38***

EXECUTIVE SUMMARY

PERMITS: A list of sites permitted by the Department of Environmental Quality, including Air, Mining, Solid Waste and Water.

A review of the PERMITS list, as provided by EDR, and dated 03/12/2018 has revealed that there are 2 PERMITS sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ROCKLINE INDUSTRIES, Facility Status: A	500 INDUSTRIAL BLVD	ENE 1/8 - 1/4 (0.182 mi.)	A2	8
BUBBUS MOBILE HOME P Facility Status: A	400 BLOCK OF WAREHOS	NNE 1/4 - 1/2 (0.407 mi.)	B3	11

TIER 2: A listing of facilities which store or manufacture hazardous materials and submit a chemical inventory report.

A review of the TIER 2 list, as provided by EDR, and dated 12/31/2013 has revealed that there is 1 TIER 2 site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
AMERICOLD LOGISTICS Facility Record Id: FATR20128D9D9L00JP9U Facility Record Id: FATR2013932CSA002SG2	***203 INDUSTRIAL BLVD***	***ESE 1/4 - 1/2 (0.475 mi.)***	***C5***	***14***

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

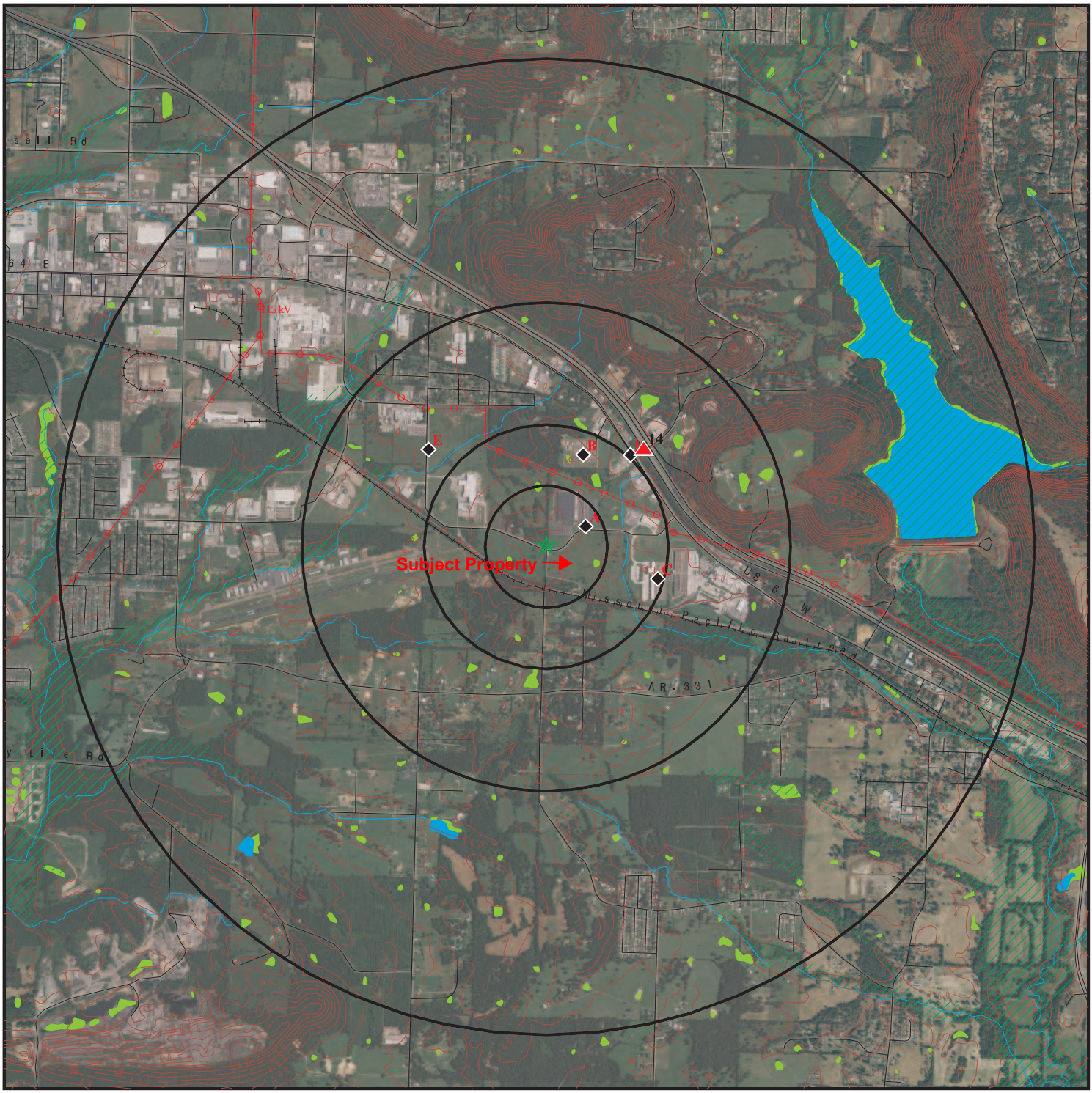
A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.625 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
RELIANT ENERGY INC	4408 E MAIN ST	NE 1/2 - 1 (0.511 mi.)	D12	50

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 5326371.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites

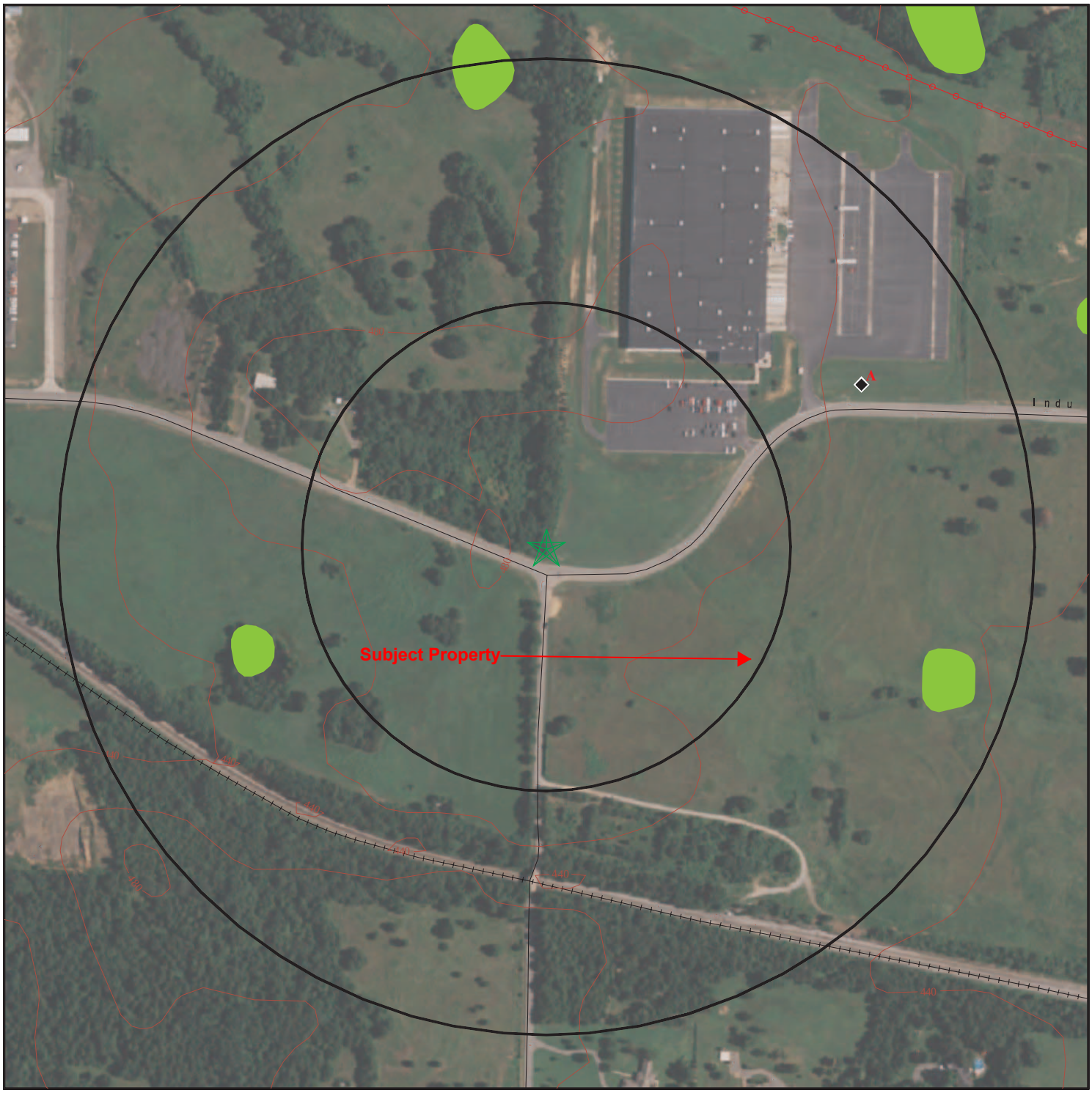
0 1/2 1 2 Miles

- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Vacant Industrial Property	CLIENT:	Environmental Enterprise Group
ADDRESS:	S13-T7N-R20W Russellville AR 72802	CONTACT:	Tara Freeman
LAT/LONG:	35.262018 / 93.076575	INQUIRY #:	5326371.2s
		DATE:	June 08, 2018 2:41 pm

DETAIL MAP - 5326371.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands

0 1/16 1/8 1/4 Miles

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Vacant Industrial Property	CLIENT:	Environmental Enterprise Group
ADDRESS:	S13-T7N-R20W Russellville AR 72802	CONTACT:	Tara Freeman
LAT/LONG:	35.262018 / 93.076575	INQUIRY #:	5326371.2s
		DATE:	June 08, 2018 2:41 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.500		0	0	0	0	0	0
Proposed NPL	1.500		0	0	0	0	0	0
NPL LIENS	0.500		0	0	0	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.500		0	0	0	0	0	0
Federal CERCLIS list								
FEDERAL FACILITY	1.000		0	0	0	0	NR	0
SEMS	1.000		0	0	0	0	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	1.000		0	0	0	0	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.500		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	1.000		0	0	0	0	NR	0
Federal RCRA generators list								
RCRA-LQG	0.750		0	0	0	0	NR	0
RCRA-SQG	0.750		0	0	0	0	NR	0
RCRA-CESQG	0.750		0	0	0	1	NR	1
Federal institutional controls / engineering controls registries								
LUCIS	1.000		0	0	0	0	NR	0
US ENG CONTROLS	1.000		0	0	0	0	NR	0
US INST CONTROL	1.000		0	0	0	0	NR	0
Federal ERNS list								
ERNS	0.500		0	0	1	NR	NR	1
State- and tribal - equivalent NPL								
SHWS	1.500		0	0	0	0	0	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	1.000		0	0	0	0	NR	0
SWID	1.000		0	0	0	0	NR	0
State and tribal leaking storage tank lists								
LTANKS	1.000		0	0	0	0	NR	0
INDIAN LUST	1.000		0	0	0	0	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.750		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.750		0	0	0	2	NR	2
AST	0.750		0	0	0	1	NR	1
INDIAN UST	0.750		0	0	0	0	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	1.000		0	0	0	0	NR	0
INST CONTROL	1.000		0	0	0	0	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	1.000		0	0	0	0	NR	0
VCP	1.000		0	0	0	0	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	1.000		0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	1.000		0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWRCY	1.000		0	0	0	0	NR	0
INDIAN ODI	1.000		0	0	0	0	NR	0
DEBRIS REGION 9	1.000		0	0	0	0	NR	0
ODI	1.000		0	0	0	0	NR	0
IHS OPEN DUMPS	1.000		0	0	0	0	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.500		0	0	0	NR	NR	0
CDL	0.500		0	0	0	NR	NR	0
US CDL	0.500		0	0	0	NR	NR	0
Local Land Records								
LIENS 2	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.500		0	0	0	NR	NR	0
SPILLS	0.500		0	0	1	NR	NR	1
SPILLS 90	0.500		0	0	0	NR	NR	0
SPILLS 80	0.500		0	0	0	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.750		0	0	0	0	NR	0
FUDS	1.500		0	0	0	0	0	0
DOD	1.500		0	0	0	0	0	0
SCRD DRYCLEANERS	1.000		0	0	0	0	NR	0
US FIN ASSUR	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
EPA WATCH LIST	0.500		0	0	0	NR	NR	0
2020 COR ACTION	0.750		0	0	0	0	NR	0
TSCA	0.500		0	0	0	NR	NR	0
TRIS	0.500		0	0	0	NR	NR	0
SSTS	0.500		0	0	0	NR	NR	0
ROD	1.500		0	0	0	0	0	0
RMP	0.500		0	0	3	NR	NR	3
RAATS	0.500		0	0	0	NR	NR	0
PRP	0.500		0	0	0	NR	NR	0
PADS	0.500		0	0	0	NR	NR	0
ICIS	0.500		0	0	0	NR	NR	0
FTTS	0.500		0	0	0	NR	NR	0
MLTS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	0.500		0	0	0	NR	NR	0
COAL ASH EPA	1.000		0	0	0	0	NR	0
PCB TRANSFORMER	0.500		0	0	0	NR	NR	0
RADINFO	0.500		0	0	0	NR	NR	0
HIST FTTS	0.500		0	0	0	NR	NR	0
DOT OPS	0.500		0	0	0	NR	NR	0
CONSENT	1.500		0	0	0	0	0	0
INDIAN RESERV	1.500		0	0	0	0	0	0
FUSRAP	1.500		0	0	0	0	0	0
UMTRA	1.000		0	0	0	0	NR	0
LEAD SMELTERS	0.500		0	0	0	NR	NR	0
US AIRS	0.500		0	0	0	NR	NR	0
US MINES	0.750		0	0	0	0	NR	0
ABANDONED MINES	0.750		0	0	0	0	NR	0
FINDS	0.500		0	1	3	NR	NR	4
UXO	1.500		0	0	0	0	0	0
ECHO	0.500		0	1	1	NR	NR	2
DOCKET HWC	0.500		0	0	0	NR	NR	0
FUELS PROGRAM	0.750		0	0	0	0	NR	0
AIRS	0.500		0	0	0	NR	NR	0
ASBESTOS	0.500		0	0	0	NR	NR	0
COAL ASH	1.000		0	0	0	0	NR	0
ENF	0.500		0	0	0	NR	NR	0
Financial Assurance	0.500		0	0	0	NR	NR	0
PERMITS	0.500		0	1	1	NR	NR	2
AR Sludge	1.000		0	0	0	0	NR	0
TIER 2	0.500		0	0	1	NR	NR	1
UIC	0.500		0	0	0	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.500		0	0	0	0	0	0
EDR Hist Auto	0.625		0	0	0	1	NR	1
EDR Hist Cleaner	0.625		0	0	0	0	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
RGA LF	0.500		0	0	0	NR	NR	0
RGA LUST	0.500		0	0	0	NR	NR	0
- Totals --		0	0	3	11	5	0	19

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

CORPS OF ENGINEERS LETTER

ARKANSAS Valley Alliance
FOR ECONOMIC DEVELOPMENT

October 14, 2005

Mr. Lee Hamann:

Please find attached the approval letter from the U.S. Army Corps of Engineers regarding the wetlands delineation on both Lots 1 & 5 in the East End Industrial Park in Russellville, AR.

You will not in the Corps letter that they did not refer to the two ponds on the property. Therefore, I ask them for another letter noting that these two ponds are not considered "jurisdictional waters of the United States".

These documents should satisfy ConAgra Foods regarding any wetland issues on the property.

Please do not hesitate to contact me if I can further assist in any way.

Sincerely,

Jeff Pipkin

Jeff Pipkin, CEcD
Director

Post-it® Fax Note 7671	Date 10-14-5	# of pages ▶ 6
To Lee Hamann	From Jeff Pipkin	
Co./Dept.	Co.	
Phone #	Phone # 479-968-2530	
Fax # 402-341-0216	Fax #	

108 W. Main, Russellville, AR 72801 • P.479-858-6555 F.479-858-6496
www.russellville.org

DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867

REPLY TO
ATTENTION OF

Planning, Environmental and Regulatory Division
Regulatory Branch

NATIONWIDE PERMIT NO. 12903-1

Gary E. Tucker PhD, PWS
FTN Associates Ltd.
3 Innwood Circle
Suite 220
Little Rock, Arkansas 72211

Dear Dr. Tucker:

Please refer to your letter dated March 10, 2000, concerning Department of the Army permit requirements pursuant to Section 404 of the Clean Water Act. This letter, on behalf of your client Russellville Economic Development Partnership, Inc., requested verification of a wetland determination and authorization for the placement of fill or dredged material in waters of the United States associated with a industrial development project. The project is located along Galla Creek, in the SE 1/4 of section 12, and the NE 1/4 of section 13, T. 7 N., R. 20 W., east of Russellville, Pope County, Arkansas.

The fill of two wetlands and a small tributary totaling less than 0.33 acres is authorized by Department of the Army Nationwide Permit (NWP) No. 26 (copy enclosed), provided that the conditions therein are met. This permit was published in the Federal Register (Part VII, Vol. 61, No. 241, pages 65874-65922) dated December 13, 1996, and became effective on February 11, 1997. You should become familiar with the conditions and maintain a copy of the permit at the worksite for ready reference. If changes are proposed in the design or location of the facilities, you should submit revised plans to this office for approval before construction of the change begins.

Please refer to NWP Condition No. 3, which stipulates that appropriate erosion and siltation controls be used during construction and all exposed soil be permanently stabilized. Erosion control measures must be implemented during and after construction of the proposed project to comply with this permit condition.

In order to fully comply with the conditions of the NWP, you must submit the enclosed compliance certification within 30 days of completion of the project. This is required pursuant to General Condition No. 14 of the permit.

This verification is valid until NWP 26 expires on June 7, 2000. If you have started this work or are under contract to start this work you would then have until June 7, 2001 to complete the work.

If you have any questions about this permit or any of its provisions, please contact me at (501) 324-5295 and refer to Permit No. 12903-1.

Sincerely,

Kenneth H. Lyon
Project Manager

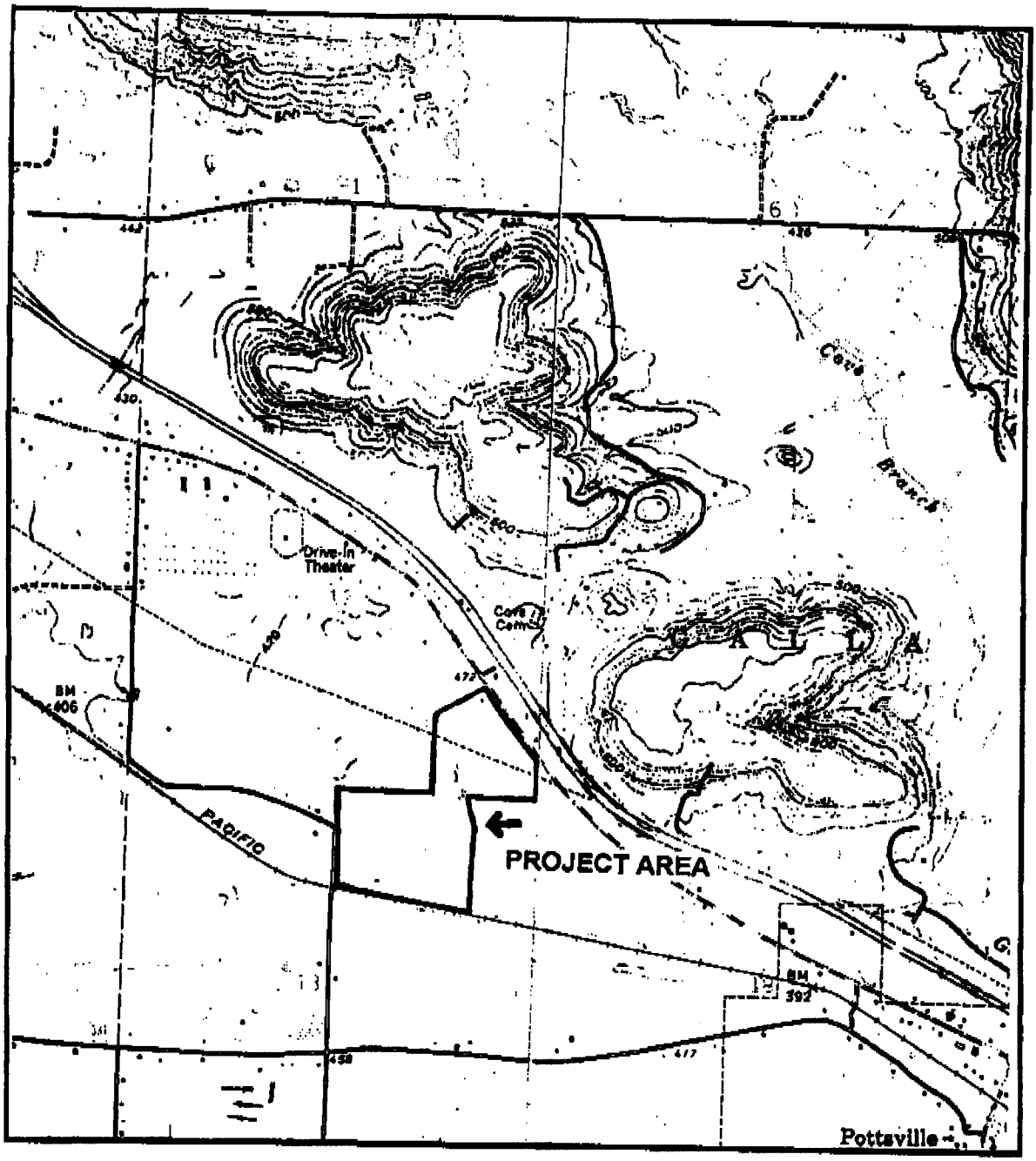
Enclosures

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Copy Furnished:
Arkansas Department of Environmental Quality,
ATTN: Water Division, P.O. Box 8913,
Little Rock, Arkansas 72219-8913, w/cy dwgs
Oper Proj Mgr, Russellville PO, w/cy dwgs
Ch, Planning, Environmental and Regulatory Division
Regulatory Enf, w/cy dwgs

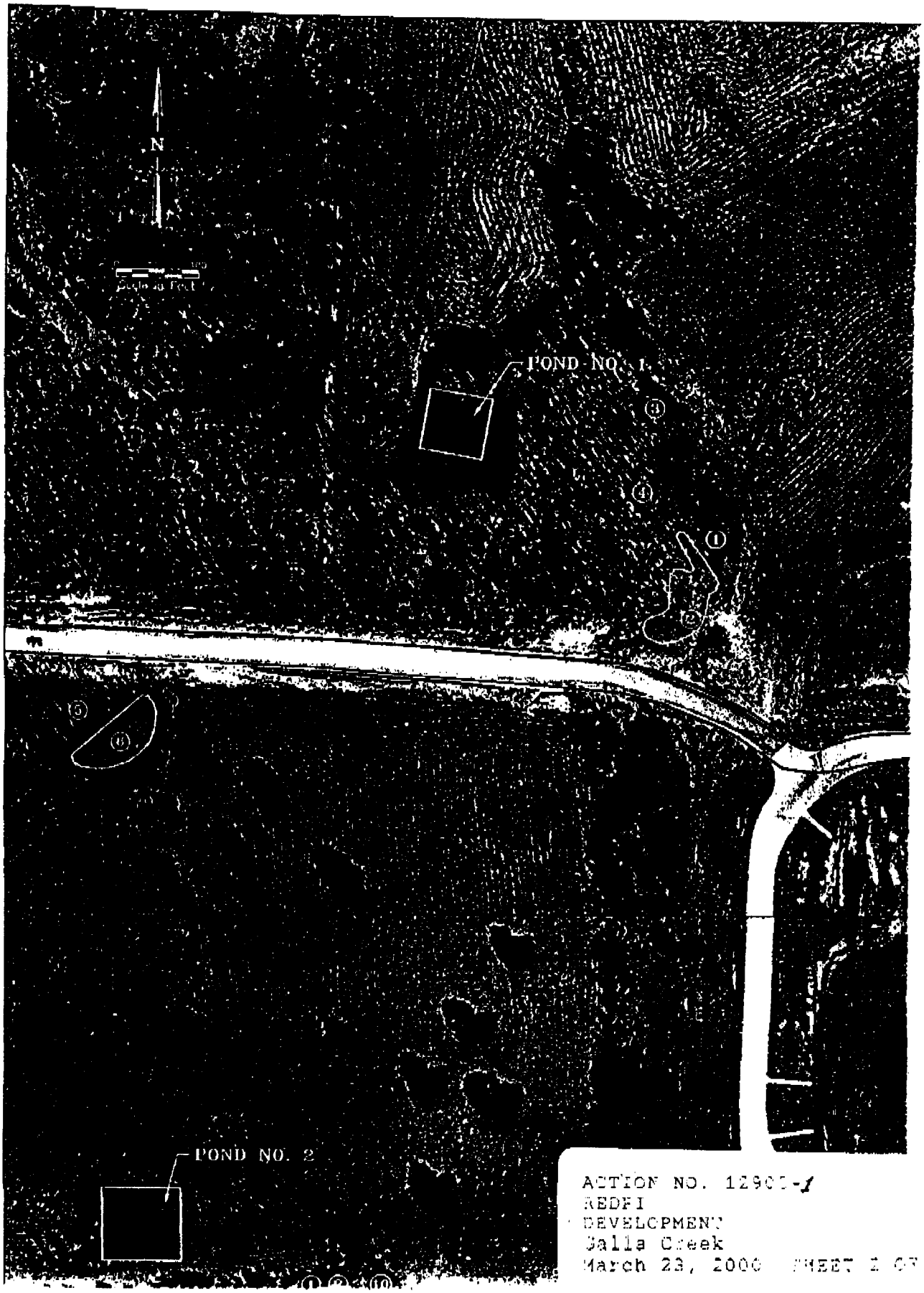
LYON
Kh/5295
12903-1/nat-per.cs
03/27/00

ENCLOSURE 1



Map of REDPI Development Project Area, which is located in parts of SE¼ of Section 12 and NE¼ of Section 13, Township 7 North, Range 20 West (USGS topographic quadrangle Russellville East, 7.5 minute series) (Corps Action ID No. 12903).

ACTION NO. 12903-1
REDPI
DEVELOPMENT
Galla Creek
March 23, 2000 SHEET 1 OF 2


N
POND NO. 1
POND NO. 2
ACTION NO. 12901-1
REDFI
DEVELOPMENT
Salla Creek
March 23, 2006 SHEET 1 OF 2

DEPARTMENT OF THE ARMY
LITTLE ROCK DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 867
LITTLE ROCK, ARKANSAS 72203-0867

REPLY TO
ATTENTION OF

From: Perser, Joyce C SWL
Sent: Friday, October 14, 2005 7:14 AM
To: 'get@ftn-assoc.com'
Subject: Action ID No. 12903-1

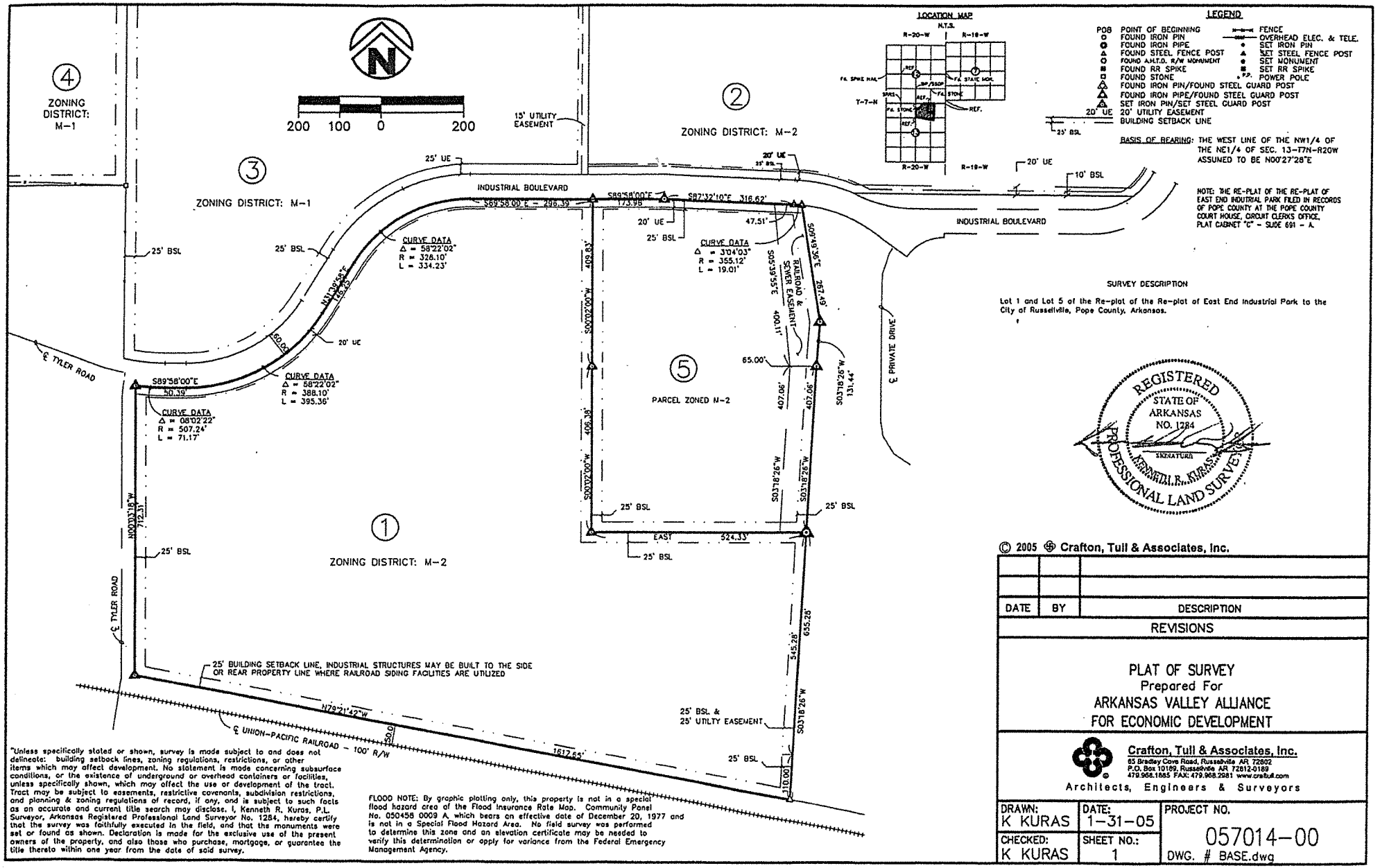
Dr. Tucker,

Based on our discussion today of the wetland delineation associated with Action ID No. 12903-1, dated March 28, 2000, Pond #2 of the subject delineation was constructed in uplands and therefore was not a jurisdictional water of the United States. A Nationwide Permit No. 26 was issued for the proposed work. The work authorized by the permit was completed as permitted, but the site was not developed. Pond #2 was filled during the project, but was not referenced in the permit letter because there was no Regulatory jurisdiction for the filling. There are no outstanding Corps issues associated with this permit or the property.

Joyce Perser
Acting Chief, Regulatory Branch
US Army Corps of Engineers
Little Rock District

(501) 324-5296

Appendix E
Legal Description



DATE	BY	DESCRIPTION

REVISIONS

PLAT OF SURVEY
Prepared For
ARKANSAS VALLEY ALLIANCE FOR ECONOMIC DEVELOPMENT

Crafton, Tull & Associates, Inc.
65 Bradley Cove Road, Russellville AR 72802
P.O. Box 10109, Russellville AR 72812-0189
479.968.1885 FAX: 479.968.2981 www.craftull.com
Architects, Engineers & Surveyors

DRAWN:	DATE:	PROJECT NO.
K KURAS	1-31-05	057014-00
CHECKED: K KURAS	SHEET NO.: 1	DWG. # BASE.dwg

"Unless specifically stated or shown, survey is made subject to and does not delineate: building setback lines, zoning regulations, restrictions, or other items which may affect development. No statement is made concerning subsurface conditions, or the existence of underground or overhead containers or facilities, unless specifically shown, which may affect the use or development of the tract. Tract may be subject to easements, restrictive covenants, subdivision restrictions, and planning & zoning regulations of record, if any, and is subject to such facts as an accurate and current title search may disclose. I, Kenneth R. Kuras, P.L. Surveyor, Arkansas Registered Professional Land Surveyor No. 1284, hereby certify that the survey was faithfully executed in the field, and that the monuments were set or found as shown. Declaration is made for the exclusive use of the present owners of the property, and also those who purchase, mortgage, or guarantee the title thereto within one year from the date of said survey.

FLOOD NOTE: By graphic plotting only, this property is not in a special flood hazard area of the Flood Insurance Rate Map. Community Panel No. 050458 0009 A, which bears an effective date of December 20, 1977 and is not in a Special Flood Hazard Area. No field survey was performed to determine this zone and an elevation certificate may be needed to verify this determination or apply for variance from the Federal Emergency Management Agency.

1 + 5 ~~40~~ .45 AC

CITY OF RUSSELLVILLE

400 GOODY'S LANE
RUSSELLVILLE, AR

Basic | Sales | Valuation | Taxes | Map View

Basic Info

Parcel Number:	858-40002-000E
County Name:	Pope County
Mailing Address:	CITY OF RUSSELLVILLE PO BOX 428 AIRPORT Russellville AR 72811-0428
Property Address:	CITY OF RUSSELLVILLE 400 GOODY'S LANE RUSSELLVILLE, AR **Map This Address**
Billing Address ❓:	CITY OF RUSSELLVILLE 203 S COMMERCE RUSSELLVILLE, AR 72801
Total Acres:	34.84
Timber Acres:	0.00
Sec-Twp-Rng:	13-07N-20W
Lot/Block:	1/
Subdivision:	EAST END IND PAR REPLAT REPLAT
Legal Description:	LOT 1 REPLAT/REPLAT CITY OF RUSSELLVILLE
School District:	61RU POTTSVILLE IN RSVL
Improvement Districts:	RUSSELLVILLE CITY FIRE DIST
Homestead Parcel?:	No
Tax Status:	EXEMPT GOVT - EG
Over 65?:	No

CITY OF RUSSELLVILLE

400 GOODY'S LANE
RUSSELLVILLE, AR

Basic | Sales | Valuation | Taxes | Map View

Sales History

Date	Price	Grantor	Grantee	Book	Page	Deed Type
1/12/2006	0	REDPI	CITY OF RUSSELLVILLE	06-3	464	CORP-D(CORPORATION DEED)
1/16/2002	0	REDPI	CARMAR	30W	289	QCD(QUITCLAIM DEED)
3/13/1998	549,000	ROBINSON	REDPI	28Q	74	WD(WARRANTY DEED)

CITY OF RUSSELLVILLE

400 GOODY'S LANE
RUSSELLVILLE, AR

Basic | Sales | Valuation | Taxes | Map View

Please Note

This map is for reference purposes only. It is not intended for use as a legal survey or document.This information has been developed from the best available sources. No guarantee of accuracy is granted, nor is any responsibility for reliance thereon assumed.

CITY OF RUSSELLVILLE
HWY 64 EAST (INDUST.
RUSSELLVILLE, AR

Basic | Sales | Valuation | Taxes | Map View

Basic Info

Parcel Number:	858-40001-000E
County Name:	Pope County
Mailing Address:	CITY OF RUSSELLVILLE PO BOX 428 RUSSELLVILLE AR 72801
Property Address:	CITY OF RUSSELLVILLE HWY 64 EAST (INDUST. RUSSELLVILLE, AR
Billing Address :	CITY OF RUSSELLVILLE 203 S COMMERCE RUSSELLVILLE, AR 72801
Total Acres:	10.00
Timber Acres:	0.00
Sec-Twp-Rng:	13-07N-20W
Lot/Block:	5/
Subdivision:	EAST END IND PAR REPLAT REPLAT
Legal Description:	LOT 5 REPLAT/REPLAT CITY OF RUSSELLVILLE
School District:	61RU POTTSVILLE IN RSVL
Improvement Districts:	RUSSELLVILLE CITY FIRE DIST
Homestead Parcel?:	No
Tax Status:	EXEMPT GOVT - EG
Over 65?:	No

CITY OF RUSSELLVILLE
HWY 64 EAST (INDUST.
RUSSELLVILLE, AR

Sales History

Date	Price	Grantor	Grantee	Book	Page	Deed Type
5/8/2008	0	CONAGRA FOODS	CITY OF RSVL	08-28	651	CORP-D(CORPORATION DEED)
10/20/2005	176,818	ARKANSAS VALLEY ALLIANCE	CONAGRO FOODS PACKAGED	05-70	553	WD(WARRANTY DEED)
3/8/2005	175,000	PEDCO	ARK VALLEY ALLIANCE	C-9	258	CD(CORRECTION DEED)

CITY OF RUSSELLVILLE

HWY 64 EAST (INDUST.
RUSSELLVILLE, AR

Basic | Sales | Valuation | Taxes | Map View

⚠ Please Note

This map is for reference purposes only. It is not intended for use as a legal survey or document.This information has been developed from the best available sources. No guarantee of accuracy is granted, nor is any responsibility for reliance thereon assumed.

Appendix F
Photographs

Northern Border of Subject Property

Southern Border of Subject Property

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

EEG Project #18-0115-018

EEG
Environmental
Enterprise Group, Inc.

www.eegonline.com

Eastern Border of Subject Property

Western Border of Subject Property

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

EEG Project #18-0115-018

EEG
Environmental
Enterprise Group, Inc.

www.eegonline.com

Overview of Subject Property

Overview of Subject Property

Overview of Subject Property

Overview of Subject Property

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

EEG Project #18-0115-018

EEG
Environmental
Enterprise Group, Inc.

www.eegonline.com

Dumping on Subject Property

Dumping on Subject Property

Railroad Ties and Barbed Wire on Subject Property

Northerly Adjoining Property

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

EEG Project #18-0115-018

EEG
Environmental
Enterprise Group, Inc.

www.eegonline.com

Southerly Adjoining Property

Easterly Adjoining Property

LOTS 1 & 5
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

EEG Project #18-0115-018

EEG
Environmental
Enterprise Group, Inc.

www.eegonline.com

Appendix G
User Questionnaire

USER PROVIDED INFORMATION – USER'S RESPONSIBILITIES

ASTM 1527-13 Section 6 describes task to be performed by the user. In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the user must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30, and 312.31. These inquiries must also be conducted by EPA Brownfield Assessment and Characterization grantees.

The user information provided can assist the environmental professional in identifying recognized environmental conditions. The User Questionnaire is to assist the user in gathering information that may be material to identifying recognized environmental conditions. The user should provide the following information to the environmental professional. Failure to conduct these inquiries could result in a determination that "all appropriate inquiries" is not complete.

USER QUESTIONNAIRE

Date Completed: June 18, 2018 P18-115

Completed By (Print Name & Title): Suzy Griffin Vice Pres. **Signature:** Suzy Griffin

Review Title and Judicial Records for Environmental liens and Activity and Use Limitations (AULs) (40 CFR 312.20 and 40 CFR 312.25).

1. Did a search of recorded land title records (or judicial records where appropriate) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law? (Chain of title reports will not normally disclose environmental liens.)

   no

2. Did a search of recorded land title records (or judicial records where appropriate) identify any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law? (Chain of title reports will not normally disclose AULs.)

   no

Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28).

3. Do you have any specialized knowledge or actual experience related to the property or nearby properties to identify conditions indicative of a release or threatened release? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

   no

Reason for Significantly Lower Purchase Price (40 CFR 312.29).

4. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

   not applicable

Commonly known or reasonably ascertainable information (40 CFR 312.30). **Commonly known or reasonably ascertainable information within the local community about the property must be taken into account by the user.**

5a. Do you know the past uses of the property?

Vacant since last Phase I Study

5b. Do you know of specific chemicals that are present or once were present at the property?

no

5c. Do you know of spills or other chemical releases that have taken place at the property?

no

5d. Do you know of any environmental cleanups that have taken place at the property?

no

The degree of obviousness (40 CFR 312.31).

6. Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of releases at the property?

   none

220 North Knoxville
Russellville, Arkansas 72801
Phone (479) 968-6767
Fax (479) 968-1956

(800) 530-7968
www.eegonline.com

2213 Hawks Landing
Fayetteville, Arkansas 72704
Phone (479) 444-0438
Fax (479) 444-6767

Appendix H
Credentials

Keith Zimmerman, P.G.

President and Senior Project Manager

Education

B.S. Geology
University of Arkansas
Fayetteville, Arkansas (1984)

M.S. Geology
University of Arkansas
Fayetteville, Arkansas (1987)

Certifications

Registered Professional
Geologist #1643 - State of Arkansas

EPA/AHERA Accredited
Asbestos Inspector
State Certified in Arkansas
State Certified in Missouri

Training Courses

Environmental Site Assessments for Commercial Real Estate, Technical and Professional Training, American Society for Testing and Materials (ASTM) E 1527-00; E 1528-00; E 1527-05; E 1528-05

OSHA 40 Hour HAZWOPER

National Institute of Occupational Safety and Health (NIOSH) 582 Certification Course

Environmental Training Corp. Quality Control for Asbestos Analysis Laboratories

Airborne Asbestos Sampling and Laboratory Analysis 582 Certification Course, Texas Engineering Extension Service, Texas A&M University System

McCrone Research Institute TEM introduction and TEM Asbestos Analysis

TSI Indoor Air Quality Training

Seminar Instruction EEG, Inc. NIOSH 582 Equivalency Course

Keith Zimmerman obtained a ***Bachelor of Science degree in Geology*** and a ***Master of Science degree in Geology*** from the University of Arkansas in Fayetteville, Arkansas. Keith is President of EEG and Senior Project Manager.

He serves as EEG's environmental consultant on issues regarding air quality, water quality, and hazardous waste. Mr. Zimmerman has worked with EEG in the environmental services field since 1989, with primary emphasis on Phase I Environmental Site Assessments, Phase II Subsurface Environmental Site Assessments involving groundwater investigations, UST removal projects and Phase III soil remediation activities. Mr. Zimmerman is listed with the Arkansas Department of Environmental Quality (ADEQ) as outlined by the Arkansas Pollution Control and Ecology Commission's Regulation 32. This Regulation requires ADEQ maintain a list of environmental professionals who meet the education and experience requirements set forth in federal regulations 40 CFR 312.10 and Regulation 32 32.301(B) Certification Criteria for Phase I Consultants.

Mr. Zimmerman supervises the quality and final review of EEG's reports. His review ensures that technical issues have been addressed in a thorough and accurate manner, and that EEG maintains its standards for the production of high-quality technical reports. Keith has been involved with the accurate and timely production of more than 10,000 environmental and analytical reports. Prior to joining EEG he was employed as a geologist for the Arkansas Department of Pollution Control and Ecology (ADPC&E) currently ADEQ and worked as a consultant geologist for Weyerhaeuser Company.

PROJECT EXPERIENCE

Environmental Site Assessments/Hazard Assessment Surveys

Arvest Bank
Centennial Bank
CenterPoint Energy
First Security Bank
Harps Food Stores
Lindsey Management Company
Martin Marietta Materials
Regions Bank
Specialized Real Estate Group
Tyson Foods
University of Arkansas Fayetteville
University of Arkansas for Medical Science
U.S. Forest Service
Veterans Healthcare System of the Ozarks

Professional Associations
Arkansas Environmental Federation

The Geological Society of America

Geological Investigations
Arkansas Department of Pollution Control & Ecology
International Paper
Weyerhaeuser Company
Chart Industries

Asbestos Investigations
University of Arkansas for Medical Sciences (UAMS)
Veterans Healthcare System of the Ozarks

Kurtis J. Jones, P.E.
Vice-President

Perkins & Associates
Architects, Engineers & Surveyors
A Division of Crafton, Tull & Associates, Inc.

February 23, 2000

Mr. Jeff Pipkin
Russellville Economic Development Partnership, Inc.
708 West Main
Russellville, AR 72801

RE: East End Industrial Park
Drainage Study – Final Report
Project No. 007011-00

Dear Jeff:

We have completed overall drainage computations for the East End Industrial Park. Specifically, we have computed stormwater runoff computations for the 2-year through the 100-year frequency storm event for both existing (undeveloped) and future (fully developed) conditions.

The property currently owned by RedPi (including the Goody's site – Lot 3) discharges into two (2) separate drainage basins. Roughly half of the property (the western basin – basin "A") drains to the west into an unnamed tributary of *Whig Creek*, and the other half of the property (the eastern basin – basin "B") drains to the south into a railroad ditch along the south side of the basin that is an unnamed tributary of *Galla Creek*. The following is a summary of those drainage areas:

BASIN	REDPI OWNED PROPERTY	OTHER PROPERTY	TOTAL AREA
A	73 acres	267 acres	340 acres
B	91 acres	199 acres	290 acres

Runoff flows for the two basins were computed using the Corps of Engineers hydrologic modeling software, HEC-1. The computation point for the western basin ("A") was the

P.O. Box 10189 / 65 Bradley Cove Road / Russellville, Arkansas 72812-0189 / (501) 968-1885 / FAX (501) 968-2981
E-Mail: kjone@craftull.com Website: http://www.craftull.com

box culvert structure under Tyler Road, and the computation point for the eastern basin ("B") was railroad ditch at the south border of the RedPi property (see the attached drainage basin map).

The following is a summary of the computed flows:

BASIN "A"

STORM FREQUENCY (years)	EXISTING RUNOFF (cfs)	PROPOSED RUNOFF (cfs)	INCREASE IN RUNOFF (cfs)
		(1)	(1)
2	251	318 / *258*	67 / *7*
10	532	619 / *542*	87 / *10*
25	695	789 / *706*	94 / *11*
50	847	945 / *858*	98 / *11*
100	981	1,083 / *993*	102 / *12*

BASIN "B"

STORM FREQUENCY (years)	EXISTING RUNOFF (cfs)	PROPOSED RUNOFF (cfs)	INCREASE IN RUNOFF (cfs)
		(1)	(1)
2	248	346 / *267*	98 / *19*
10	517	639 / *544*	122 / *27*
25	673	802 / *701*	129 / *28*
50	817	952 / *846*	135 / *29*
100	945	1,083 / *975*	138 / *30*

(1) Flows computed based on the Goody's development alone.

As indicated above, complete development of the RedPi property will result in a runoff increase of 102 cfs or 10.4% for the western basin ("A"), and 138 cfs or 14.6% for the eastern basin ("B"). The Goody's development alone will result in a runoff increase of 12 cfs or 1.2% for the western basin ("A"), and 30 cfs or 3.2% for the eastern basin ("B").

Please note that the actual runoff increases at the point of discharge from the Goody's site itself will be significantly greater than the values indicated above; however, due to differing peak times within the overall basins, the actual peaks at the points of computation are somewhat lower.

Based on our knowledge of the conditions downstream from the RedPi property, the increase caused by the development of the Goody's site will not cause any significant downstream drainage problems. However, the overall development of the area will significantly increase the downstream peak flows. Based on this data, we recommend that RedPi explore the option of requiring future developers to provide individual detention basins for their developments to limit runoff from their property to predevelopment rates.

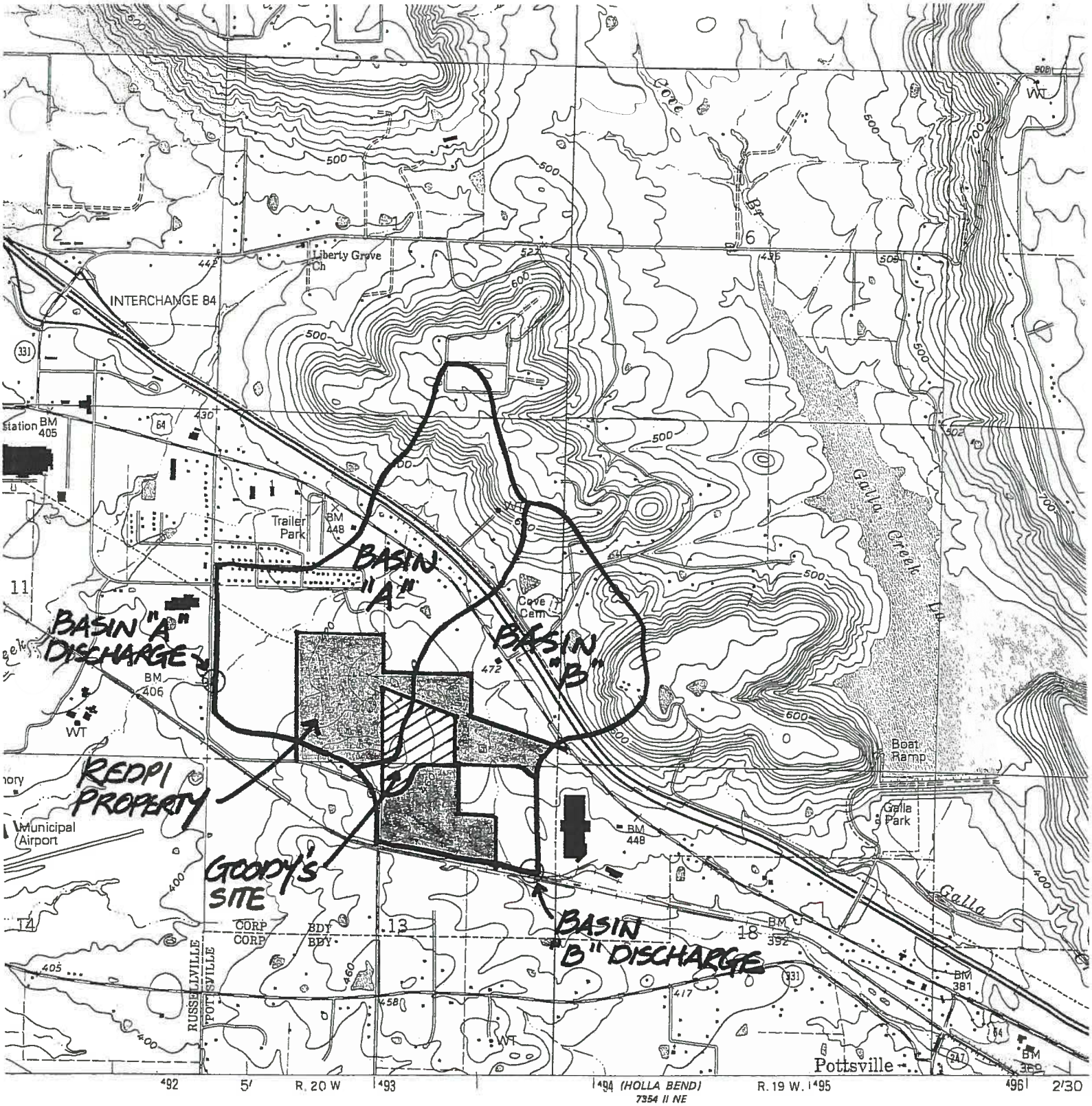
Attached is a copy of the stormwater detention policy and requirements from the City of Rogers, Arkansas Drainage Manual, which we developed for the City of Rogers a few years ago. Please review this information. It is possible that this policy (or one similar) could be adopted by RedPi with minimal alterations.

Should you have any questions regarding the information, please feel free to contact us at your convenience.

Sincerely,

PERKINS & ASSOCIATES
A DIVISION OF CRAFTON, TULL & ASSOCIATES, INC.

Kurtis J. Jones, P.E.



SCALE 1:24 000

1 MILE

7000 FEET

1 KILOMETER

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

MN
GN
0°02'
1 MIL
3½°
62 MILS

UTM GRID AND 1993 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

REDPI DRAINAGE
REDPI NA 07011-07

COMPLIES WITH U.S. GEOLOGICAL SURVEY STANDARDS FOR SPATIAL ACCURACY - CLASS 2
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND ARKANSAS GEOLOGICAL COMMISSION, LITTLE ROCK, ARKANSAS 72204
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

HEC-1 INPUT SUMMARY

PROJECT: RedPi - East End Industrial Park
JOB NUMBER: 007011-00
DATE: 2/9/00
BY: K. Jones

BASIN NO.	AREA (AC)	AREA (SQ MI)	LENGTH(L) (FT)	AVG. BASIN SLOPE (Y) (%)	(1) RCN	S	T (LAG) (HR)
Predevelopment							
A	340	0.53125	6500	3.5	80	2.500	0.7593
B	290	0.45313	5600	4.3	80	2.500	0.6080
Postdevelopment - Total development of RedPi property							
A	340	0.53125	6500	3.5	83.2	2.019	0.6847
B	290	0.45313	5600	4.3	84.7	1.806	0.5209
Postdevelopment - Development of Goody's site only							
A	340	0.53125	6500	3.5	80.4	2.438	0.7498
B	290	0.45313	5600	4.3	81.1	2.330	0.5872

(1) Predominant soil types are Mountainburg (hydrologic group D), Linker (hydrologic group C), Leadvale (hydrologic group C), Enders (hydrologic group C), and Taft (hydroligic group C).

DRAFT
May 18, 2000

STORMWATER MANAGEMENT AND DRAINAGE ORDINANCE

AN ORDINANCE ADOPTING REGULATIONS DESIGNED TO LESSEN OR AVOID HAZARDS TO PERSONS AND PROPERTY CAUSED BY INCREASED STORM WATER RUNOFF OR BY OBSTRUCTION TO DRAINAGE, AND TO OTHERWISE PROMOTE THE PUBLIC HEALTH, SAFETY AND GENERAL WELFARE.

ARTICLE I. GENERAL PROVISIONS

SECTION A. Title: purpose

1. The provisions of this ordinance shall constitute and be known as the "Stormwater Management Ordinance for the City of Russellville, AR."
2. The purpose of this Ordinance is to protect, maintain, and enhance the public health, safety, and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased stormwater runoff associated with both future land development and existing developed land within the City. Proper management of stormwater runoff will minimize damage to public and private property, ensure a functional drainage system, reduce local flooding, maintain as nearly as possible the pre-developed runoff characteristics of the area, and facilitate economic development while mitigating associated flooding and drainage impacts.
3. The application of this Ordinance and the provisions expressed herein shall be the minimum stormwater management requirements and shall not be deemed a limitation or repeal of any other powers granted by State statute. In addition, if site characteristics indicate that complying with these minimum requirements will not provide adequate designs or protection for local property or residents, it is the designer's responsibility to exceed the minimum requirements as necessary. The City Engineer or designee shall be responsible for the coordination and enforcement of the provisions of this ordinance.

SECTION B. Definitions

For the purpose of this Ordinance, the following terms, phrases and words, and their derivatives, shall have the meaning given herein:

1. As-built plan shall mean a set of engineering or site drawings that delineate the specific permitted stormwater management facility as actually constructed.
2. Best management practices shall mean a wide range of management procedures, schedules of activities, prohibitions on practices, and other management practices which have been demonstrated to effectively control the quality and/or quantity of stormwater runoff and which are compatible with the planned land use.
3. City Engineer shall mean the duly designated Head of the Engineering Department or department of public works, or his duly authorized agent.
4. City Engineering Department shall mean the department responsible for all stormwater management activities and implementation of the provisions of this ordinance.

5. Cross-drain culvert shall mean a culvert located under a roadway.
6. Design report shall mean the report that accompanies the Stormwater Management Plan and includes data used for engineering analysis, results of all analysis, design and analysis calculations (including input files and results obtained from computer programs), and other engineering data that would assist the City Engineer in evaluating proposed stormwater management facilities.
7. Designer shall mean a professional who is permitted to prepare plans and studies required by this ordinance.
8. Detention structure shall mean a permanent stormwater management structure whose primary purpose is to temporarily store stormwater runoff and release the stored runoff at controlled rates.
9. Development should generally mean any of the following actions undertaken by a public or private individual or entity:
   - the division of a lot, tract or parcel of land into two (2) or more lots, plots, sites, tracts, parcels or other divisions by plat or deed, or
   - any land change, including, without limitation, clearing, tree removal, grubbing, stripping, dredging, grading, excavating, transporting and filling of land.
10. Develop land shall mean to change the runoff characteristics of a parcel of land in conjunction with residential, commercial, industrial, or institutional construction or alteration.
11. Develop land use conditions shall mean the land use conditions according to the current City Land Use Map or proposed development plan.
12. Easement shall mean a grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.
13. Erosion shall mean the wearing away of land surface by the action of wind, water, gravity, ice, or any combination of those forces.
14. Erosion and sediment control shall mean the control of solid material, both mineral and organic, during a land disturbing activity to prevent its transport out of the disturbed area by means of wind, water, gravity, or ice.
15. Existing land use conditions shall mean the land use conditions existing at the time of the most recent official aerial photography available from the City.
16. Four percent annual chance (4%) storm shall mean a storm that is capable of producing rainfall expected to have a 4% chance of being equaled or exceeded in any given year.
17. Grading shall mean excavating, filling (including hydraulic fill), or stockpiling of earth material, or any combination thereof, including the land in its excavated or filled condition.
18. Impervious shall mean the condition of being impenetrable by water.
19. Imperviousness shall mean the degree to which a site is impervious.
20. Infiltration shall mean the passage or movement of water through the soil profile.
21. Interior culvert shall mean a culvert that is not located under a roadway.
22. Land disturbing activity shall mean any use of the land by any person that results in a change in the natural cover or topography that may cause erosion and contribute to sediment and alter the quantity of stormwater runoff.
23. Maintenance shall mean any action necessary to preserve stormwater management facilities in proper working condition, in order to serve the intended purposes set forth in Article I of this Ordinance and to prevent structural failure of such facilities. Maintenance shall not

include actions taken solely for the purpose of enhancing the aesthetics associated with stormwater management facilities.

24. Natural waterways shall mean waterways that are part of the natural topography. They usually maintain a continuous or seasonal flow during the year and are characterized as being irregular in cross-section with a meandering course. Construction channels such as drainage ditches shall not be considered natural waterways.
25. Nonerodible shall mean a material, e.g., natural rock, riprap, concrete, plastic, etc., that will not experience surface wear due to natural forces of wind, water, ice, gravity, or a combination of those forces.
26. On-site stormwater management shall mean the design and construction of a facility necessary to control stormwater runoff within and for a single development.
27. One percent annual chance (1%) storm shall mean a storm that is capable of producing rainfall expected to have a 1% chance of being equaled or exceeded in any given year.
28. Person responsible for the land disturbing activity shall mean:
    a. the person who has or represents having financial or operational control over the land disturbing activity; and/or
    b. the landowner or person in possession or control of the land who directly or indirectly allowed the land disturbing activity or has benefited from it or who has failed to comply with any provision of this ordinance.
29. Post-development conditions shall mean the conditions which exist following the completion of the land disturbing activity in terms of topography, vegetation, or land use and rate, volume, or direction of stormwater runoff.
30. Pre-developed conditions shall mean those land use conditions that existed prior to the initiation of the land disturbing activity in terms of topography, vegetation, or land use and rate, volume, or direction of stormwater runoff.
31. Preliminary plat shall mean the preliminary plat of a residential subdivision submitted pursuant to the City's Subdivision Regulations.
32. Record survey shall mean a final field survey which locates the visible surface features of a constructed stormwater facility on the ground, but without locating non-visible or subsurface features such as the actual route and elevation of buried pipe.
33. Regional stormwater management shall mean the design and construction of a facility necessary to control stormwater runoff within or outside a development and for one or more developments.
34. Registered Civil Engineer shall mean a civil engineer properly registered and licensed to conduct work within the State.
35. Registered Land Surveyor shall mean a land surveyor properly registered and licensed to conduct work within the State.
36. Registered Landscape Architect shall mean a landscape architect properly registered and licensed to conduct work within the State.
37. Responsible personnel shall mean any foreman, superintendent, or similar individual who is the on-site person in charge of land disturbing activities.
38. Retention structure shall mean a permanent structure whose primary purpose is to permanently store a given volume of stormwater runoff. Release of the given volume is by infiltration and/or evaporation.
39. Sediment shall mean solid particulate matter, both mineral and organic, that has been or is being transported by water, air, ice, or gravity from its site of origin.

40. Stabilization shall mean the installation of vegetative or structural measures to establish a soil cover to reduce soil erosion by stormwater runoff, wind, ice and gravity
41. Stage work or stage construction shall mean a plan for the staged construction of stormwater facilities where portions of the facilities will be constructed as different stages of the proposed development are started or completed.
42. Stormwater Concept Plan shall mean the overall proposal for a storm drainage system, including stormwater management structures, and supporting documentation as specified in the Stormwater Management Design Manual, for each proposed private or public development to the extent permitted by law. Also included are the supporting engineering calculations and results of any computer analysis, if necessary.
43. Stormwater drainage system shall mean any inlet structure, ditch, gutter adjacent to curb or any other means of conveying stormwater.
44. Stormwater management shall mean the collection, conveyance, storage, treatment, and disposal of stormwater runoff in a manner to minimize accelerated channel erosion and/or increased flood damage, and in a manner to enhance and ensure the public health, safety, and general welfare, which shall include a system of vegetative or structural measures, or both, that control the increased volume and rate of stormwater runoff caused by manmade changes to the land.
45. Stormwater Management Design Manual shall mean the manual of design, performance, and review criteria for stormwater management practices, prepared under the direction of the City Engineer. Copies of this manual can be obtained from the City Engineering Department.
46. Stormwater management facilities shall mean those structures and facilities that are designed for the collection, conveyance, storage, and disposal of stormwater runoff into and through the drainage system.
47. Stormwater Management Plan (SMP) shall mean the set of drawings and other documents that comprise all of the information and specifications for the drainage systems, structures, concepts and techniques that will be used to control stormwater as required by this Ordinance and the Stormwater Management Design Manual. Also included are the supporting engineering calculations and results of any computer analysis.
48. Stormwater management qualitative control shall mean a system of vegetative, structural, or other measures that reduce or eliminate pollutants that might otherwise be carried by stormwater runoff.
49. Stormwater runoff shall mean the direct response of a watershed to precipitation and includes the surface and subsurface runoff that enters a ditch, stream, storm drain or other concentrated flow during and following the precipitation.
50. Subdivision shall mean (1) The creation of one or more new streets, alleys or other public ways; or, the changing of any rights-of-way of any existing streets, alleys or other public ways. (2) Any division or redivision of lot, tract, or parcel or land, regardless of its prospective use. Such subdivision may be accomplished by platting or by description of metes and bounds or otherwise into two (2) or more lots or other divisions for sale or improvement. The following are not defined as subdivisions:
    a. The combination or recombination of portions of previously platted lots where the total

number of lots is not increased and the resultant lots are in accordance with the rules and regulations contained in the City's Subdivision Regulations and with the City's Zoning Ordinance.

b. Division or sale of land by judicial decree which shall not be deemed a division for purposes of this ordinance.
c. The acquisition of land for the purpose of widening or opening of streets when the acquisition and work is done by the City, State, or other governmental agency.
d. The division of land into parcels greater than five (5) acres where no street right-of-way dedication is involved.

50. Swale shall mean a structural measure with a lining of grass, riprap, or other materials which can function as a detention structure and convey stormwater runoff without causing erosion.
51. Variance shall mean the modification of the minimum stormwater management requirements for specific circumstances where strict adherence of the requirements would result in unnecessary hardship and not fulfill the intent of this ordinance.
52. Waiver shall mean the relinquishment from stormwater management requirements by the City Engineer for a specific land disturbing activity on a case-by-case review basis.
53. Water quality shall mean those characteristics of stormwater runoff from a land disturbing activity that relate to the physical, chemical, biological, or radiological integrity of water.
54. Water quantity shall mean those characteristics of stormwater runoff that relate to the rate and volume of the stormwater runoff to downstream areas resulting from land disturbing activities.
55. Watershed shall mean the drainage area contributing stormwater runoff to a single point.

SECTION C. Scope of Ordinance

No person shall develop any land, realign any channel, place fill or debris in the channel or in any storm drainage system, without having provided for appropriate stormwater management measures that control or manage runoff, in compliance with this Ordinance, unless exempted in Article I, Section D below.

No person shall dump debris, solid waste, yard waste, fill or any other waste material in any storm drainage system, including an open channel, ditch or a gutter adjacent to a City street.

SECTION D. Exemptions

All construction, subdivision approvals or remodeling activities shall have a stormwater management and drainage plan approved before a building permit is issued or subdivision is approved except for the following:

- One - new or existing single family structure unless the impervious areas of the development exceed 40,000 square feet.
- One - new or existing duplex family structure unless the impervious areas of the development exceed 40,000 square feet.

- One - existing commercial or industrial structure where additional structural improvements or additional impervious areas are less than 500 square feet.
- Residential subdivisions which were approved prior to the effective date of these regulations are exempt from these requirements. Development of new phases of existing subdivisions which were not previously approved shall comply with the provisions of these regulations.

SECTION E. Stormwater Management Design Manual

To assist in the design and evaluation of stormwater management facilities in the City, a Stormwater Management Design Manual will be developed. Recommended design procedures and criteria are presented for conducting hydrologic and hydraulic evaluations. Although the intention of the manual is to establish uniform design practices, it neither replaces the need for engineering judgment nor precludes the use of information not presented. Other accepted engineering procedures may be used to conduct hydrologic and hydraulic studies if approved by the City Engineer.

ARTICLE II. STORM WATER CONCEPT AND PRELIMINARY DEVELOPMENT PLANS

SECTION A. Scope of development plans

1. a. In developing plans for residential subdivisions, individual lots in a residential subdivision development shall not be considered to be separate land disturbing activities and shall not require individual permits. Instead the residential subdivision development, as a whole, shall be considered to be a single land disturbing activity. Hydrologic parameters that reflect the ultimate subdivision development shall be used in all engineering calculations.

   b. If individual lots or sections in a residential subdivision are being developed by different property owners, all land disturbing activities related to the residential subdivision shall be covered by the approved Stormwater Management Plan for the residential subdivision. Individual lot owners or developers shall sign a certificate of compliance that all activities on that lot will be carried out in accordance with the approved Stormwater Management Plan for the residential subdivision.

2. Unless otherwise deemed necessary by the City Engineer, for land disturbing activities involving two and one half (2.5) acres or less of actual land disturbance or development of less than than 40,000 square feet of impervious area which are not part of a larger common plan of development or sale, the person responsible for the land disturbing activity shall submit a simplified stormwater management control plan meeting the requirements listed below. This plan does not require preparation or certification by the designers specified in Section K of Article II unless deemed necessary by the City Engineer. The requirements for the simplified stormwater management control plan include:

   a. A narrative description of the stormwater management facilities to be used.
   b. A general description of topographic and soil conditions of the development site.

c. A general description of adjacent property and a description of existing structures, buildings, and other fixed improvements located on surrounding properties.

d. A sketch plan to accompany the narrative which shall contain:
   - a site location drawing of the proposed project, indicating the location of the proposed project in relation to roadways, jurisdictional boundaries, streams and rivers;
   - the boundary lines of the site on which the work is to be performed;
   - all areas within the site which will be included in the land disturbing activities shall be identified and the total disturbed area calculated;
   - a topographic map of the site;
   - anticipated starting and completion dates of the various stages of land disturbing activities and the expected date the final stabilization will be completed.
   - the location of temporary and permanent vegetative and structural stormwater management control measures.

e. Stormwater Management Plans shall contain certification by the persons responsible for the land disturbing activity that the land disturbing activity will be accomplished pursuant to the plan.

f. Stormwater Management Plans shall contain certification by the person responsible for the land disturbing activity of the right of the City Engineer to conduct on-site inspections.

3. For land disturbing activities disturbing more than two and one-half (2.5) acres or development of greater than 40,000 square feet of impervious area, or as deemed necessary by the City Engineer, the requirements of Article II, Sections B - K shall apply.

SECTION B. Stormwater Concept and Stormwater Management Plans

1. A Stormwater Concept Plan for each development shall be submitted for review by the City Engineer prior to submission of the Stormwater Management Plan and construction plans for the entire development, or any portion thereof.
2. All preliminary plats of the development shall be consistent with the Stormwater Concept Plan required in Paragraph 1 above.
3. Upon approval of the concept plan, the applicant shall submit a final Stormwater Management Plan (as part of the construction plans) to the City Engineer for review and approval; provided that the City Engineer may accept and submit into the review process a Stormwater Concept Plan if it identifies the location and type of facilities to be constructed in sufficient detail to accurately estimate construction costs and the City Engineer determines that a Stormwater Management Plan is not needed. If accepted under this provision, the Stormwater Concept Plan then becomes the Stormwater Management Plan for this development.
4. Should any Stormwater Management Plan involve any stormwater management facilities or land to be dedicated to public use, the same information shall also be submitted for review and approval to the department having jurisdiction over the land or other appropriate departments or agencies identified by the City Engineer for review and approval. This Stormwater Management Plan shall serve as the basis for all subsequent construction.
5. The Stormwater Concept Plan may be reviewed, if needed, with the designer, after City review, where it will be approved, approved with changes, or rejected. If rejected, changes,

additional analysis, or other information needed to approve the next submittal of the concept plan shall be identified. The City review of the Stormwater Concept Plan will be completed within ten (10) working days from and after the receipt of the plan.

6. Within fifteen (15) working days from and after the receipt of the Stormwater Management Plan, the City Engineer shall issue a decision approving, rejecting or conditionally approving the plan with modification.

SECTION C. Stormwater Management requirements

1. For purposes of obtaining approval of a Stormwater Management Plan, a plan for the site meeting the requirements established in the Stormwater Management Design Manual shall be submitted to the City Engineer for review and approval. All design criteria plan details shall be in conformance with the Stormwater Management Design Manual.
2. Construction of stormwater management facilities shall be in conformance with the approved Stormwater Management Plan for the site.
3. The Stormwater Management Plan, including on-site stormwater detention facilities, shall be reviewed and approved by the City Engineer prior to issuance of building permits for the site. The improvements shall be constructed prior to the issuance of final certificates of occupancy.
4. For sites on which privately owned and maintained stormwater detention and/or conveyance facilities are located, the property owner shall be responsible for the following:
   a. All future grading, repairs, and maintenance.
   b. Maintenance of the minimum stormwater detention volume, as approved by the City Engineer.
   c. Maintenance of the detention basin control structure(s) and discharge pipe(s) to insure the maximum theoretical stormwater release rate, as approved by the City Engineer, is not increased.
5. The property owner shall place no fill material, or erect any buildings, obstructions, or other improvements on the area reserved for stormwater detention purposes, unless otherwise approved by the City Engineer.
6. The property owner shall dedicate to the City of Russellville, by instrument or final platting, any property on which public stormwater detention basins will be located. Ingress-egress easements for maintenance of public facilities shall be provided prior to final site approval.
7. All public storm sewers shall be dedicated to the City.
8. All stormwater drainage facilities serving more than one lot which are not dedicated to the city shall be covered under a drainage easement. Such easements shall grant to the City the authority for operation, maintenance, and inspection.
9. Upon determination that a site is not in compliance with these regulations, the City Engineer may issue an order to comply. The order shall describe the problem and specify a date whereby the work must be completed, and indicate the penalties to be assessed for further noncompliance.
10. Except as provided in this Ordinance, no person shall engage in construction of stormwater management facilities, unless a Stormwater Management Plan has been reviewed and approved by the City Engineer.
11. Compliance – Compliance with this Section is achieved when:
    a. The site plan has been approved.

b. The approved stormwater drainage facilities have been implemented and are demonstrably in conformance with the approved site plan and Stormwater Management Design Manual.

12. Coordination with Building Permit – It is the intent of this Section that review of the stormwater drainage system be carried out simultaneously with the review of the request for a building permit. The site plan required under this chapter may be submitted in a form which will satisfy the site plan requirements set forth in the Building Code, the Land Subdivision and Development Code and the Zoning Ordinance.
13. Other Permits – Before starting on construction regulated by this chapter, the applicant shall comply with the requirements set forth in other applicable ordinances with respect to submission and approval of subdivision plats, plans of improvements, building permits, inspections, appeals and similar matters, as well as requirements of state statutes and the regulations of any Department of the State of Arkansas.
14. Alternatives to On-Site Detention
    a. Alternative Methods – where on-site detention is deemed inappropriate due to local topographical or other physical conditions, alternate methods for accommodating increases in stormwater runoff shall be permitted. The methods may include:
        1) Off-site detention or comparable improvements.
        2) In-lieu monetary contributions for drainage system improvements by the City. Channel improvements shall only be used if they are an integral part of a detailed watershed study.
    b. In-Lieu Contributions to Regional or Sub-Regional Detention – An owner may contribute to drainage system improvements to be constructed in lieu of constructing on-site detention. However, no in-lieu contributions are allowed when existing flooding occurs downstream from the development, or if the development will cause downstream flooding.
    c. In-Lieu Fees – The in-lieu fee contribution shall be based upon an amount of $15,000 per Acre-Foot of stormwater storage.
    d. Excess Stormwater Storage Credit – An owner may receive credit for excess stormwater storage (in Acre-Feet) created on one site that may be applied to another site within the same watershed. The transfer of storage volume credit (in Acre-Feet) shall not be allowed if the site where credited storage is proposed to be transferred has an existing flooding condition downstream or the proposed development will produce downstream flooding.
    e. Drainage System Improvements – Monies contributed by the owners as above provided shall be used for the construction of drainage improvements; facilities thereon will be financed by the City.

SECTION D. Permit requirements

1. No final occupancy permit shall be issued without the following:
    a. Recorded easements for stormwater management facilities.
    b. Receipt of an as-built plan, which includes a certification of the storm drainage system.
2. No site grading permit shall be issued or modified without the following:
    a. Right of entry for emergency maintenance if necessary.
    b. Right of entry for inspections.

c. Any off-site easements needed.

d. An approved Stormwater Concept Plan or Stormwater Management Plan, as appropriate.

3. The approved Stormwater Management Plan shall contain certification by the applicant that all land clearing, construction, development and drainage will be done according to the Stormwater Management Plan or previously approved revisions. Any and all site grading permits may be revoked at any time if the construction of stormwater management facilities is not in strict accordance with approved plans.
4. In addition to the plans and permits required from the City, applicants shall obtain all state and federal permits required for the proposed development.

SECTION E. Fees

A list of fees for plan review and other fees associated with this ordinance can be obtained from the City Engineering Department. Said fees shall be in accordance with the fees set by the Zoning Ordinance or the Land Subdivision and Development Code.

SECTION F. Permit suspension and revocation

1. A site grading permit may be suspended or revoked if one or more of the following violations have been committed:
   a. Violation(s) of the conditions of the Stormwater Management Plan approval;
   b. Construction not in accordance with the intent of the approved plans;
   c. Non-compliance with correction notice(s) or stop work orders(s); or
   d. The existence of an immediate danger in a downstream area in the judgment of the City Engineer.

   If one or more of these conditions is found, a written notice of violations shall be served upon the owner or authorized representative and an immediate stop-work order may be issued. The notice shall set forth the measures necessary to achieve compliance with the plan. Correction of these violations must be started immediately or the owner shall be deemed in violation of this Ordinance.

SECTION G. Minimum runoff control requirements

1. The minimum stormwater control requirements shall provide management measures necessary to accomplish the following:
   a. Install stormwater management facilities to limit the 4% annual chance storm developed peak discharge rates to pre-developed peak discharge rates. The design of these facilities shall be based on procedures contained in the Stormwater Management Design Manual or approved by the City Engineer.
   b. The requirements, or portions thereof, of item (a.) may be waived by the City Engineer if it can be shown by detailed engineering calculations and analysis which are acceptable to the City Engineer that one of the following exists:
      1) the installation of stormwater management facilities would have insignificant effects on reducing downstream flood peaks; or

2) stormwater management facilities are not needed to protect downstream developments and the downstream drainage system has sufficient capacity to receive any increase in runoff for the design storm; or
3) it is not necessary to install stormwater management facilities to control developed peak discharge rates at the exit to a proposed development and installing such facilities would increase flood peaks at some downstream locations; or
4) the City Engineer determines that stormwater management facilities are not needed to control developed peak discharge rates and installing such facilities would not be in the best interest of the City.

c. The requirements, or portions thereof, of item (a.) may not be waived if the City Engineer determines that not controlling downstream flood peaks would increase known flooding problems, or exceed the capacity of the downstream drainage system.
d. A waiver shall only be granted after a written request is submitted by the applicant containing descriptions, drawings, and any other information that is necessary to evaluate the proposed land disturbing activity. A separate written waiver request shall be required if there are subsequent additions, extensions, or modifications which would alter the approved stormwater runoff characteristics to a land disturbing activity receiving a waiver. The City Engineer will conduct a review of the request for a waiver within ten (10) working days. All waivers issued must be signed by the City Engineer and the Mayor or acting representative of the Mayor.
e. Discharge velocities shall be reduced to provide a nonerosive velocity flow from a structure, channel, or other control measure or the velocity of the 4 percent annual chance storm runoff in the receiving waterway prior to the land disturbing activity, whichever is greater.

2. For all stormwater management facilities, a hydrologic-hydraulic study shall be done showing how the drainage system will function with and without the proposed facilities. Existing land use data shall be taken from the most recent aerial photograph and field checked and updated. For such studies the following land use conditions shall be used:
   a. For the design of the facility outlet structure, use developed land use conditions for the area within the proposed development and existing land use conditions for upstream areas draining to the facility.
   b. For any analysis of flood flows downstream from the proposed facility, use existing land use conditions for all downstream areas.
   c. All stormwater management facilities' emergency spillways shall be checked using the 1% annual chance storm and routing flows through the facility and emergency spillways. For this analysis, developed land use conditions shall be used for all areas within the analysis.
   d. If accepted for municipal maintenance, the effects of existing upstream detention facilities can be considered in the hydrologic-hydraulic study.

SECTION H. Stormwater management facilities

1. Stormwater management facilities may include both structural and nonstructural elements. Natural swales and other natural runoff conduits shall be retained where practicable.
2. Where additional stormwater management facilities are required to satisfy the minimum control requirements, the following measures are examples of what may be used:

a. Stormwater detention structures (dry basins);
b. Stormwater retention structures (wet ponds);
c. Facilities designed to encourage overland flow, slow velocities of flow, and flow through buffer zones;
d. Infiltration practices.

3. Where detention and retention structures are used, designs which consolidate these facilities into a limited number of large structures will be preferred over designs which utilize a large number of small structures.
4. Stormwater Management Plans can be rejected by the City Engineer if they incorporate structures and facilities that will demand considerable maintenance, will be difficult to maintain, or utilize numerous small structures if other alternatives are physically possible.
5. The drainage system and all stormwater management structures within the City (including both public and private portions) will be designed to the same engineering and technical criteria and standards. The City Engineering Department's review will be the same whether the portion of the drainage system will be under public or private control or ownership.
6. All stormwater management measures shall be designed in accordance with the design criteria contained in the Stormwater Management Design Manual using procedures contained in this manual or procedures approved by the City Engineer.

SECTION I. Plan requirements

Stormwater Management Plans shall include as a minimum the following.

1. A vicinity map indicating a north arrow, scale, boundary lines of the site, and other information necessary to locate the development site.
2. The existing and proposed topography of the development site except for individual lot grading plans in single family subdivisions.
3. Physical improvements on the site, including present development and proposed development.
4. Location, dimensions, elevations, and characteristics of all stormwater management facilities.
5. All areas within the site which will be included in the land disturbing activities shall be identified and the total disturbed area calculated.
6. The location of temporary and permanent vegetative and structural stormwater management control measures.
7. An anticipated starting and completion date of the various stages of land disturbing activities and the expected date the final stabilization will be completed.
8. Stormwater Management Plans shall include designation of all easements needed for inspection and maintenance of the drainage system and stormwater management facilities. As a minimum, easements shall have the following characteristics:
   a. Provide adequate access to all portions of the drainage system and structures.
   b. Provide sufficient land area for maintenance equipment and personnel to adequately and efficiently maintain the system with a minimum of ten (10) feet along both sides of all drainage ways, streams, channels, etc., and around the perimeter of all detention and retention facilities, or sufficient land area for equipment access for maintenance of all stormwater management facilities. This distance shall be measured from the top of the bank or toe of the downstream side of the dam whichever is applicable.

c. Restriction on easements shall include prohibiting all fences and structures which would interfere with access to the easement areas and/or the maintenance function of the drainage system.

9. To improve the aesthetic aspects of the drainage system, a landscape plan for all portions of the drainage system shall be part of the Stormwater Management Plan. This landscape plan shall address the following:
   a. Tree saving and planting plan.
   b. Types of vegetation that will be used for stream bank, stabilization, erosion control, sediment control, aesthetics, and water quality improvement.
   c. Any special requirements related to the landscaping of the drainage system and efforts necessary to preserve the natural aspects of the drainage system.
   d. All plans shall be submitted in a scale of 1" = 100' or larger. (Example 1" = 60', 50', 40' etc.)

SECTION J. Plan hydrologic criteria

The hydrologic criteria to be used for the Stormwater Concept And Stormwater Management Plans shall be as follows:

1. Four percent (4%) annual chance design storm for all cross-drain culverts and drainage designs.
2. Ten percent (10%) annual chance design storm for drainage design for all interior culverts.
3. Four percent (4%) annual design storm for all detention and retention basins using procedures contained in the Stormwater Management Design Manual or approved by the City Engineer.
4. All hydrologic analysis will be based on land use conditions as specified in Article II Section G 2.
5. For the design of storage facilities, a secondary outlet device or emergency spillway shall be provided to discharge the excess runoff in such a way that no danger of loss of life or facility failure is created. The size of the outlet device or emergency spillway shall be designed to pass the one percent (1%) chance storm as a minimum requirement.
6. All storms listed above are to be analyzed assuming a 24-hour duration.

SECTION K. Professional registration requirements

Stormwater concept and Stormwater Management Plans and design reports that are incidental to the overall or ongoing site design shall be prepared, certified, and stamped/sealed by a qualified registered Professional Engineer, Land Surveyor, or Landscape Architect, as applicable, using acceptable engineering standards and practices. All other stormwater concept and Stormwater Management Plans and design reports shall be prepared, certified, and stamped/sealed by a qualified registered Professional Engineer, using acceptable engineering standards and practices.

The engineer, surveyor, or landscape architect shall perform services only in areas of his/her competence, and shall undertake to perform engineering or land surveying assignments only when qualified by education and/or experience in the specific technical field. In addition, the engineer, surveyor, or landscape architect must verify that the plans have been designed in

accordance with this ordinance and the standards and criteria stated or referred to in this ordinance.

ARTICLE III. OWNERSHIP AND CITY PARTICIPATION

SECTION A. Ownership of stormwater management facilities

1. All stormwater management facilities shall be privately owned and maintained unless the City accepts the facility for City ownership and maintenance. The owner of all private facilities shall grant to the City, a perpetual, non-exclusive easement which allows for public inspection and emergency repair.
2. All stormwater management measures relying on designated vegetated areas or special site features shall be privately owned and maintained as defined on the Stormwater Management Plan.
3. Regional stormwater management facilities will be publicly owned and/or maintained.
4. The dedication of any property and/or facilities to the City for public use and maintenance must be approved by the City Council in ordinance form and shall be filed with the Pope County Circuit Clerk.

SECTION B. City participation

When the City Engineer determines that additional storage capacity beyond that required by the applicant for on-site stormwater management is necessary in order to enhance or provide for the public health, safety and general welfare, to correct unacceptable or undesirable existing conditions or to provide protection in a more desirable fashion for future development, the City Engineer may:

a. Require that the applicant grant any necessary easements over, through or under the applicant's property to provide access to or drainage for such a facility;
b. Require that the applicant attempt to obtain from the owners of property over, through or under where the stormwater management facility is to be located, any easements necessary for the construction and maintenance of same (and failing the obtaining of such easement the City may, at its option, assist in such matter by purchase, condemnation, dedication or otherwise, and subject to (c) below, with any cost incurred thereby to be paid by the City); and/or
c. Participate financially in the construction of such facility to the extent that such facility exceeds the required on-site stormwater management as determined by the City Engineer. To implement this provision both the City and developer must be in agreement with the proposed facility that includes the additional storage capacity and jointly develop a cost sharing plan which is agreeable to all parties.

ARTICLE IV. MAINTENANCE, CONSTRUCTION AND INSPECTION

SECTION A. Maintenance

1. Any stormwater discharge control facility which services a single lot or commercial and

industrial development shall be privately owned and maintained; provided, however, the owner thereof shall grant to the City, a perpetual, non-exclusive easement which allows for public inspection and emergency repair, in accordance with the terms of the maintenance agreement set forth in Article IV, Section B, below.

2. All regional stormwater discharge control facilities, identified on municipal stormwater discharge control masterplans, shall be publicly owned and/or maintained.
3. All other stormwater discharge control facilities shall be publicly owned and/or maintained only if accepted for maintenance by the City.
4. Private maintenance requirements shall be a part of the deed to the affected property.

SECTION B. Maintenance agreement (privately owned facilities only)

1. A proposed inspection and maintenance agreement shall be submitted to the City Engineer for all private on-site stormwater discharge control facilities prior to the approval of the Stormwater Management Plan. Such agreement shall be in form and content acceptable to the City Engineer and shall be the responsibility of the private owner. Such agreement shall provide for access to the facility by virtue of a non-exclusive perpetual easement in favor of the City at reasonable times for regular inspection by the City Engineer. The agreement will identify who will have the maintenance responsibility. Possible arrangements for this maintenance responsibility might include the following:
   - Use of homeowner associations,
   - Private maintenance by development owner(s), or
   - Contracts with private maintenance companies.

   All maintenance agreements shall contain without limitation the following provisions:
   a. A description of the property on which the stormwater management facility is located and all easements from the site to the facility;
   b. Size and configuration of the facility;
   c. A statement that properties which will be served by the facility are granted rights to construct, use, reconstruct, repair, and maintain access to the facility;
   d. A statement that each lot served by the facility is responsible for repairs and maintenance of the facility and any unpaid ad valorem taxes, public assessments for improvements, and unsafe building and public nuisance abatement liens charged against the facility, including all interest charges together with attorney fees, cost and expenses of collection. If an association is delegated these responsibilities, then membership into the association shall be mandatory for each parcel served by the facility and any successive buyer, the association shall have the power to levy assessments for these obligations, and that all unpaid assessments levied by the association shall become a lien on the individual parcel; and
   e. A statement that no amendments to the agreement will become effective unless approved by the City.
2. The agreement shall provide that preventive maintenance inspections of stormwater management facilities may be made by the City Engineer, at his option. Without limiting the generality of the foregoing, the City Engineer's inspection schedule may include an inspection during the first year of operation and once every year thereafter, and after major storm events.
3. Inspection reports shall be maintained by the City Engineer.

4. The agreement shall provide that if, after an inspection, the condition of a facility presents an immediate danger to the public health, safety or general welfare because of unsafe conditions or improper maintenance, the City shall have the right, but not the duty, to take such action as may be necessary to protect the public and make the facility safe. Any cost incurred by the City shall be paid by the owner.
5. The agreement shall be recorded by the owner in the Register of Deeds prior to the final inspection and approval.
6. The agreement shall provide that the City Engineer shall notify the owner(s) of the facility of any violation, deficiency, or failure to comply with this Ordinance. The agreement shall also provide that upon a failure to correct violations requiring maintenance work, within ten (10) days after notice thereof, the City Engineer may provide for all necessary work to place the facility in proper working condition. The owner(s) of the facility shall be assessed the costs of the work performed by the City Engineer pursuant to this subsection and subsection 4 above and there shall be a lien on all property of the owner which property utilizes or will utilize such facility in achieving discharge control, which lien, when filed in the Register of Deeds, shall have the same status and priority as liens for ad valorem taxes. Should such a lien be filed, portions of the affected property may be released by the City following the payments by the owner of such owner's pro-rata share of the lien amount based upon the acreage to be released with such release amount to be determined by the City Engineer, in his reasonable discretion.
7. All agreements must be signed by the property owner, the engineer that prepared the plans for the facility, the City Engineer and the Mayor.
8. Failure to comply with the terms of this agreement shall be a violation of this ordinance.

SECTION C. Construction and inspection

1. Prior to the approval of the Stormwater Management Plan, the applicant shall submit a proposed staged construction and inspection control schedule. This plan shall indicate a phase line for approval; otherwise the construction and inspection control schedule will be for the entire drainage system.
2. No stage work, related to the construction of stormwater management facilities, shall proceed until the next preceding stage of work, according to the sequence specified in the approved staged construction and inspection control schedule, is inspected and approved.
3. Any portion of the work that does not comply with the Stormwater Management Plan shall be promptly corrected by the permittee.
4. The permittee shall notify the City Engineer before commencing any work to implement the Stormwater Management Plan and upon completion of the work.
5. The permittee shall provide an "as-built" plan certified by a registered professional (as outlined in Article II, Section J) to be submitted upon completing of the stormwater management facilities included in the Stormwater Management Plan. The registered professional shall certify that:
   a. The facilities have been constructed as shown on the "as-built" plan, and
   b. The facilities meet the approved Stormwater Management Plan and specifications or achieves the function for which they were designed.

6. A final inspection shall be conducted by the City Engineer upon completion of the work included in the approved Stormwater Management Plan to determine if the completed work is constructed in accordance with the plan.
7. The City Engineer shall maintain a file of inspection reports and provide copies of all inspection reports to the permittee that include the following:
   a. The date and location of the site inspection.
   b. Whether the approved plan has been properly implemented.
   c. Any approved plan deficiencies and any actions taken.
8. The City Engineer will notify the person responsible for the land disturbing activity in writing when violations are observed describing the following:
   a. Nature of the violation.
   b. Required corrective actions.
   c. The time period for violation correction.

ARTICLE V. MISCELLANEOUS PROVISIONS

SECTION A. Variances from requirements

1. The City Engineer may grant a variance from the requirements of this Ordinance if there are exceptional circumstances applicable to the site such that strict adherence to the provisions of the Ordinance will result in unnecessary hardship and not fulfill the intent of the Ordinance.
2. A written request for a variance shall be required and shall state the specific variance sought and the reasons, with supporting data, for their granting. The request shall include descriptions, drawings, calculations, and any other information that is necessary to evaluate the proposed variance.
3. Any substantial variance from the Stormwater Management Plan or concept plan shall be referred to all agencies that reviewed the original plan.
4. The City Engineer will conduct a review of the request for a variance within ten (10) working days. Any variance granted must contain the signature of the City Engineer and the Mayor.

SECTION B. Appeals

Any person aggrieved by a decision of the City Engineer (including any decision with reference to the granting or denial of a variance from the terms of this Ordinance) may appeal same by filing a written notice of appeal with the City Engineer within thirty (30) calendar days of the issuance of said decision by the City Engineer. The City Engineer can then reverse his/her decision or send this notice to the Appeals Board with comments.

The Appeals Board shall consist of five (5) members: the Mayor (Chairman), two Aldermen (chosen annually at the January City Council meeting), and two lay person members, residents of the City, appointed by the Mayor for a term of two years.

A notice of appeal shall state the specific reasons why the decision of the City Engineer is alleged to be in error and the City Engineer shall prepare and send to the Appeals Board and Appellant, within fifteen (15) days of receipt of the notice of appeal, a written response to said notice of appeal.

All such appeals shall be heard by the Appeals Board that is hereby granted specific authority to hear and determine such appeals in a quasi-judicial capacity. Said appeal shall be heard by the Appeals Board at its next regularly scheduled meeting date, not to exceed thirty (30) days after receipt of the notice of appeal, or at such other time as may be mutually agreed upon in writing by the Appellant and the Chairperson of the Appeals Board. The Appeals Board will then render a written decision within fifteen (15) days after the appeal has been heard.

Each party to the appeal shall be entitled to a hearing before the Appeals Board under judicial forms of procedure, at which hearing each party shall have the right to present evidence and sworn testimony of witnesses, to cross-examine witnesses, and to cause a transcription of the proceedings to be prepared.

Appeals Board deliberations shall be open to the public.

Should either party be dissatisfied with the decision of the Appeals Board, any appeal of said decision may be appealed to the Pope County Circuit Court.

SECTION C. Penalties

1. Upon determination that a violation of this ordinance has occurred the owner shall be given a written notice of the violations and the time in which to correct the deficiencies. The notice shall be prepared by the City Engineer or his designee, or the City Attorney.
2. If construction violations of the approved plan are occurring, an immediate stop-work order may be issued by the City Engineer. If the City issues a stop work order, the City must deliver a written list of reasons/deficiencies within 3 working days of the stop-work order.
3. Any person violating this ordinance or any part thereof, including failing to stop work upon order, shall upon conviction thereof, be fined not less than three hundred dollars nor more than five hundred dollars for each offense. Each separate interval of 24 hours, or every day, such violations shall be continued, committed or existing, shall constitute a new and separate offense and be punished, as aforesaid, for each separate period of violation.
4. The City Attorney may institute injunctive, mandamus, or other appropriate action or proceedings at law or equity for the enforcement of this Ordinance or to correct violations of this Ordinance, and any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.

SECTION D. Grandfather clause

Any applicant or owner of a parcel of land within the jurisdiction of the City who has constructed the required stormwater management facility or who is in the process of meeting the stormwater management requirements of the law at the time of the effective date of this

Ordinance may elect to apply to the City Engineer for reconsideration under the provisions of this ordinance.

SECTION E. Conflict with other laws

Whenever the provisions of this ordinance impose more restrictive standards than are required in or under any other ordinance, the regulations herein contained shall prevail. Whenever the provisions of any other ordinance require more restrictive standards than are required herein, the requirements of such shall prevail.

SECTION F. Severability

If any term, requirement or provision of this Ordinance or the application thereof to any person or circumstance shall, to any extent, be invalid or unenforceable, the remainder of this Ordinance or the application of such terms, requirements, and provisions to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby and each term, requirement, or provision of this Ordinance shall be valid and be enforced to the fullest extent permitted by law.

SECTION G. Amendments

This ordinance may be amended in the manner as prescribed by law for its original adoption.

SECTION H. Liability

Neither the approval of a plan under the provisions of this Ordinance nor the compliance with the provisions of this Ordinance shall relieve any person from the responsibility for damage to any person or property otherwise imposed by law nor shall it impose any liability upon the City for damage to any person or property.

SECTION I. Effective date

The Ordinance shall be effective immediately after adoption of this Ordinance by the City.

Geotechnical

Soils Report: See attachment GT-1 for detail. Includes Terracon report from 2019 on a property 0.5 miles away and a Grubbs, Barner & Hoskyn, Inc. report from 1997.

Seismic Rating: According to the National Seismic Hazard map this site is in low risk short term, and moderate risk long term. See attachment GT-2.

Geotechnical Engineering Report

Russellville Substation Cut In
Russellville, Pope County, Arkansas
December 12, 2018
Terracon Project No. 35185126

Prepared for:
Entergy Services, Inc.
New Orleans, Louisiana

Prepared by:
Terracon Consultants, Inc.
Little Rock, Arkansas

December 12, 2018

Terracon GeoReport

Entergy Services, Inc.
639 Loyola Avenue
L-ENT-8D
New Orleans, Louisiana 70113

Attn: Mr. Justin Richard, E.I.
Transmission Line Design, Engineer I
P: (504) 576 7221
E: jrich18@entergy.com

Re: Proposal for Geotechnical Engineering Services
Russellville Substation Cut In
Russellville, Pope County, Arkansas
Terracon Proposal No. P35185108

Dear Mr. Richard:

We have completed the Geotechnical Engineering services for the above-referenced project. This study was performed in general accordance with Terracon Proposal No. P35185108 dated October 18, 2018. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.
Certificate of Authorization #223, Expires 12/31/2019

Kimberly A. Daggitt, P.E.
Project Engineer

for Christopher S. Handley, P.E.
Geotechnical Department Manager

Greg J. Klein, P.E.
National Director

STATE OF ARKANSAS
12/13/18
LICENSED PROFESSIONAL ENGINEER
No.16398
KIMBERLY A. DAGGITT

REPORT TOPICS

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the ***GeoReport*** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report

Russellville Substation Cut In
Tyler Road and East 6th Street
Russellville, Pope County, Arkansas

Terracon Project No. 35185126
December 12, 2018

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed substation to be located near the southeast corner of the Tyler Road and East 6th Street intersection in Russellville, Pope County, Arkansas. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Foundation design and construction
- Seismic site classification per IBC
- Lateral earth resistance

The geotechnical engineering Scope of Services for this project included the advancement of six test borings to varying depths of about 9.5 to 16 feet below existing site grades.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and/or as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The site is located near the southeast corner of the Tyler Road and East 6th Street intersection in Russellville, Arkansas. See **Site Location**
Existing Improvements	The site is currently on an undeveloped parcel of land. Overhead transmission lines and tower structures are present along the northern edge of the project site.

Item	Description
Current Ground Cover	Exposed soil and grass in the proposed substation and transmission line easement
Existing Topography	The ground surface appeared to be relatively level across the site.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Proposed Structures	Transmission line structures supported on drilled shaft foundations or direct-embedded poles The substation structures could consist of bus supports, switch supports, small equipment pads, transformers and dead-end structures. Substation foundation types are not known at this time but are expected to include shallow footings, mat foundations, and deep foundations which could include drilled shafts.
Maximum Loads	Typical reactions for bus and switch supports ■ 1 to 6 kips vertical ■ 1 to 6 kips shear ■ 10 to 120 kip-ft ground line moment due primarily wind Typical reactions for small equipment pads ■ 5 to 25 kips in compression Typical reactions for control house and transformer foundations ■ 50 to 400 kips in compression Typical reactions for dead-end structures ■ 10 to 30 kips shear ■ 50 to 200 kips compression ■ 50 to 200 kips uplift ■ 200 to 600 kip-ft ground line moment
Grading/Slopes	We expect final grade will remain at or near existing grade for the proposed substation and transmission line structures
Below-Grade Structures	None anticipated
Free-Standing Retaining Walls	None anticipated
Pavements	None anticipated
Estimated Start of Construction	2019

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** section and the GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Overburden Soils**	Lean clay with varying amounts of sand and shale fragments
2	**Weak Rock**	Highly weathered and soft shale bedrock
3	**Moderately Hard Rock**	Moderately hard shale bedrock

GEOTECHNICAL OVERVIEW

The soil stratigraphy at this site generally consisted of stiff to hard lean clay soils with varying amounts of sand and shale fragments overlying shale bedrock. Upper portions of the shale bedrock in some borings were classified as highly weathered or soft. Moderately hard shale bedrock was typically observed underlying the soft strata at depths of about 5 feet to 11 feet below the existing ground surface. All of the borings terminated in the moderately hard shale layer at depths varying between 9.5 feet and 16 feet below the existing surface.

The results of our study indicate that the sites can be developed for the planned substation and transmission line structures. We understand that the substation structures are typically supported on shallow foundations, mat foundations, and deep foundations which could include drilled shafts or driven piles. Transmission line structures are typically supported on deep foundations. During our study, the following geotechnical conditions were identified:

- Moisture-sensitive soils
- Presence of bedrock

The following discussion addresses these items and provides the basis for design recommendations presented in the subsequent report sections. Additional construction-related concepts are provided in the following sections of this report.

Moisture-Sensitive Soils

The lean clay soils observed at the project site are moisture-sensitive and prone to strength loss with increased moisture content. These soils could become unstable with typical earthwork and construction traffic, especially after precipitation events; therefore, effective drainage should be completed early in the construction sequence and maintained after construction. If possible, the grading should be performed during the warmer and drier times of the year. If grading or construction is performed during the winter months, an increased risk for possible treatment of unstable subgrade will persist.

Presence of Bedrock

Highly weathered to unweathered shale was observed in all of the borings, typically from 3 to 7.5 feet below the ground surface and extended to the termination depth of each respective boring. Highly weathered shale was observed at ground surface in Boring Sub-1. Borings were terminated after 5 to 10 feet of rock coring was performed in each boring. Rock excavation considerations are discussed in the **Deep Foundations** section.

The **Shallow Foundations** section addresses support of the substation structures bearing on native soils or bedrock. The **Deep Foundations** section of the report addresses the support of substation and transmission line structures on drilled shaft foundations. The design soil parameters, allowable bearing pressures for footing and mat foundations, and associated settlement were estimated based on the results of the field and laboratory testing. The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

Earthwork is anticipated to include clearing and grubbing, excavations, and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations and equipment slabs.

Site Preparation

Surface vegetation and topsoil should be removed from the construction areas. Close observation and testing should be performed by Terracon after clearing to evaluate the exposed soils and to provide recommendations if subgrade improvement is needed.

After stripping the surface materials and completing required cuts for grading, but prior to placing new fill, the subgrade should be proof-rolled to aid in locating soft areas. A Terracon geotechnical engineer or a qualified senior technician should observe each site to confirm that the site has been effectively stripped of unsuitable materials. They should also monitor proof-rolling

procedures to evaluate and approve the stability of the exposed subgrade materials. Proof-rolling can be performed with a rubber-tired construction vehicle weighing at least 25 tons, such as a loaded scraper or tandem-axle dump truck. If proof-rolling is not practical, the subgrade should be evaluated by Terracon using other methods.

Unstable soils identified by proof-rolling or evaluation should be scarified, moisture conditioned, and compacted or removed and replaced full-depth with new structural fill. The appropriate method of improvement, if required, would depend on factors such as schedule, weather, the size of the area to be improved, and the nature of the instability.

After proof-rolling and improving any unstable soils, and just prior to placing fill in areas below design grade, the top 9 inches of the subgrade should be scarified, moisture conditioned and compacted to the density recommended in the **Compaction Requirements** table below.

Close monitoring of the site preparation operations outlined herein will be critical in providing proper subgrade support for fill placement. We therefore recommend that the geotechnical engineer be retained to monitor this portion of the work. Furthermore, it may be prudent to have the geotechnical engineer at the site during initial critical phases of the earthwork to observe the actual site conditions and make necessary recommendations.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below or within 10 feet of structures. General fill is material used to achieve grade outside of these areas. Earthen materials used for structural and general fill should meet the following material property requirements:

Soil Type [1]	USCS Classification	Acceptable Location for Placement
Imported structural fill material	CL, GC, SC LL ≤ 45 and PI ≤ 20	All locations and elevations
On site soils [2]	CL	General fill outside of structural areas
Well-graded granular	GW/GM [3]	Beneath foundations or equipment slabs

1. Structural and general fill should consist of approved materials free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on this site.
2. The on-site lean clay soils have a PI greater than 20; therefore they are not recommended for use as engineered fill.

Fill Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill	General Fill
Maximum Lift Thickness	8 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used	Same as Structural fill
Minimum Compaction Requirements [1, 2]	95 percent of material's standard Proctor maximum dry density (ASTM D 698)	92 percent of material's standard Proctor maximum dry density (ASTM D 698).
Water Content Range [1]	Cohesive soils: Between 1 percentage point below and 3 percentage points above the material's optimum moisture content value as determined by the standard Proctor test at the time of placement and compaction Granular: workable moisture levels	As required to achieve min. compaction requirements

1. Maximum density and optimum water content as determined by the standard Proctor test (ASTM D 698).
2. High plasticity cohesive fill should not be compacted to more than 100% of standard Proctor maximum dry density.

Utility Trench Backfill

All trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction.

Grading and Drainage

Effective surface drainage during construction will be necessary to control and divert the surface runoff away from the substation structures and pads. Finished exterior grades should be sloped to provide effective drainage away from the equipment structures and any buildings to reduce surface water infiltration into the foundation subgrade materials.

Earthwork Construction Considerations

Unstable subgrade conditions are may develop during general construction operations, particularly where the soils are wetted and/or subjected to repetitive construction traffic. Unstable soils, where encountered, should be improved in-place prior to placing new structural fill. In some areas, it may be necessary to strip and/or undercut the rutted and wet surface soils prior to performing ground improvement. Subgrade improvement techniques should be discussed with our Geotechnical Engineer at the time of construction for appropriate recommendations.

Terracon should be retained during construction to observe earthwork and to perform necessary tests and observations during subgrade preparation; proof-rolling; placement and compaction of Structural fills; and just prior to construction of building floor slabs and foundations.

Excavations

We anticipate the soils will be excavatable using conventional back-hoes, front-end loaders and motorized scrapers. Temporary excavations will likely be required during grading and site development operations. The contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope or bench the sides of the excavations as required to maintain stability of the excavation sides and bottom. All excavations should comply with applicable local, state and federal safety regulations, including the current Occupational Safety and Health Administration (OSHA) Excavation and Trench Safety Standards.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of vegetation and topsoil, proofrolling, and mitigation of areas delineated by the proof-roll to require mitigation.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in structure areas. One density and water content test should be performed for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

Design Parameters – Compressive Loads

Description	Columns	Continuous
Recommended bearing stratum	Native undisturbed soil or weathered shale Bearing stratum to be verified by Terracon	
Maximum net allowable bearing pressure [1] ■ Native lean clay soils ■ Weathered shale bedrock	 2,000 psf 4,000 psf	 2,000 psf 4,000 psf
Minimum width **Minimum embedment below finished grade for frost protection** [2]	30 inches 24 inches	16 inches 24 inches
Approximate total movement [3] ■ Native lean clay soils ■ Weathered shale bedrock	 1 inch ½ inch	 1 inch ½ inch
Estimated differential movement [3] ■ Native lean clay soils ■ Weathered shale bedrock	 <1 inch between columns < ½ inch	 <1 inch over 40 feet < ½ inch
Allowable passive pressure [4] ■ Native lean clay soils ■ Weathered shale bedrock	 1,000 psf 3,000 psf	
Coefficient of sliding friction [4] ■ Native lean clay soils ■ Weathered shale bedrock	 0.3 (ultimate) 0.4 (ultimate)	

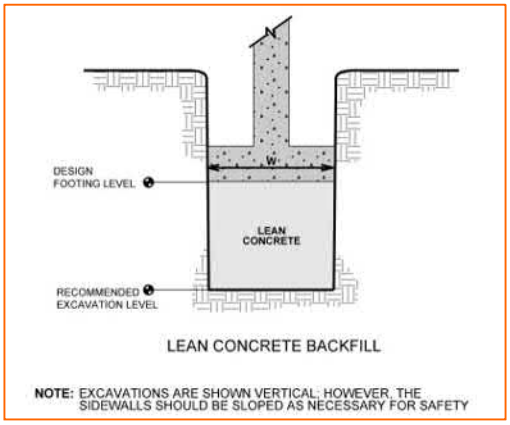
Description	Columns	Continuous

1. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation based on a maximum 5-foot by 5-foot foundation. Assumes any unsuitable or soft soils observed will be undercut and replaced with structural fill.
2. For perimeter footings.
3. Actual foundation settlement will depend upon variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of compacted fill and the quality of earthwork operations.
4. The sides of the footing excavation must be nearly vertical and the concrete should be placed neat against the excavation sides for the passive earth pressure value to be valid. The allowable passive pressure is also applicable for backfill placed adjacent to formed foundations and constructed as discussed in the **Compaction Requirements** table. Passive resistance for exterior footings should be neglected in the upper 2 feet of the soil profile. If passive resistance is used to resist lateral loads, then base friction should be neglected. No factor of safety has been applied to the coefficient of sliding friction.

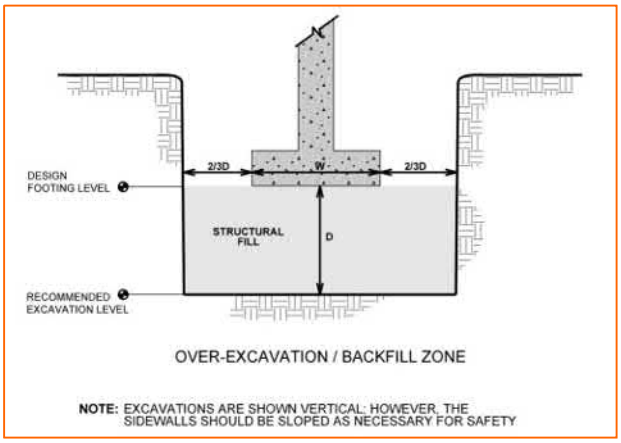
Shallow Foundation Construction Considerations

As noted in **Earthwork**, the footing and mat foundation excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the foundation excavations should be removed/reconditioned before foundation concrete is placed.

If unsuitable bearing soils are encountered at the base of the planned foundation excavation, the excavation should be extended deeper to suitable soils, and the foundations could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. This is illustrated on the sketch below.



Over-excavation for structural fill placement below foundations should be conducted as shown below. The over-excavation should be backfilled up to the footing base elevation, with structural fill placed, as recommended in the **Earthwork** section.



DEEP FOUNDATIONS

Based on the subsurface conditions observed in the borings, the substation structures could be supported on straight-shaft drilled shaft foundations. Design soil parameters for drilled shaft foundations, representing the subsurface conditions observed at the borings, are presented on the Drilled Concrete Shaft Design Soil Parameters table included at the end of this section. The values given in the table are based on conditions observed in the borings, limited laboratory data, published values, and our experience. These values should therefore be considered approximate.

Lateral Capacity

Axial compression or tension loads will most likely not control the depth or diameter of the shaft; lateral loads from overturning moments on the shaft typically control the design length of the drilled shafts for these structures. Recommended soil parameters (total strength parameters for

soil and effective strength parameters for the rock mass) for performing shaft capacity analyses using MFAD 5.0 are presented in the Drilled Concrete Shaft Design Soil Parameters tables included at the end of this section. The MFAD parameters were developed from the subsurface conditions encountered at the individual borings. Due to construction disturbance and other seasonal factors, we recommend that the lateral resistance obtained from the top 2 feet of soil be ignored. A reduction in the lateral resistance of the shadowed shaft in a foundation designed with a shaft group (the lead shaft is not affected) should be considered when the shaft spacing in the direction of loading is less than eight shaft diameters.

Settlement

Shafts properly designed using the recommended soil parameters installed into undisturbed soil, and constructed as recommended in this report should experience axial compression and uplift movements of less than 1 inch. These movements are associated with the loading from the structure. The quality of drilled shaft construction can also have a significant influence on the total movement that an individual shaft can experience.

Drilled Shaft Construction Considerations

The drilling contractor should be experienced in the subsurface conditions observed at the site, and the excavations should be performed with equipment capable of providing a clean bearing area. The drilled straight-shaft foundation should be installed in general accordance with the procedures presented in “Standard Specification for the Construction of Drilled Piers,” ACI Publication No. 336.1.

Highly weathered to slightly weathered shale was observed in all the borings typically at depths ranging from about 3 to 7.5 feet below the existing ground surface. Highly weathered shale was observed at the surface in Boring Sub-1. We expect that rock auger and or/coring bit will be required to penetrate the shale or interbedded sandstone and shale bedrock. Auger refusal was encountered in our borings at depths ranging from 4.5 feet to 7.5 feet below the existing ground surface in the substation footprint and at a depth of about 7 feet in the transmission line boring. We expect a core barrel will be needed to extend the pier foundation excavation into rock below this depth. Difficult rock excavation for drilled piers and challenging pier construction conditions should be expected.

Groundwater was not observed in any of the borings during the subsurface investigation, but this does not necessarily mean that groundwater will not be encountered when constructing drilled pier foundations, especially at the soil-rock interface. Casing should be available at the time of construction to seal into the rock. Care should be taken that the sides and bottom of the pier excavation are not disturbed during construction. The bottom of the shaft should be free of soft or loose material prior to reinforcing steel and concrete placement.

For construction consideration, where the spacing between adjacent shafts is less than a center-to-center distance of three times the larger shaft diameter, we recommend waiting at least 24 hours after placing concrete in a shaft before starting to drill an adjacent shaft.

Because the subsurface conditions could likely vary away from the boring locations, we recommend that the geotechnical engineer or his representative observe the shaft installations to evaluate the intended bearing material is observed and sufficiently penetrated.

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC). Based on the soil properties encountered at the site and as described on the exploration logs and results, it is our professional opinion that the **Seismic Site Classification is C**. Subsurface explorations at this site were extended to a maximum depth of 16 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and

are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

PRELIMINARY DRILLED CONCRETE SHAFT DESIGN SOIL PARAMETERS

Generalized Substation Boring (Sub-1, Sub-3. Sub-4, and Sub-5)

Layer type	USCS	Consistency / Rock Hardness	Bottom Depth[1] (ft)	Total Unit Weight (pcf)	Modulus of Deformation (ksi)	Friction Angle[2] Φ' (degrees)	Undrained shear Strength or Rock Cohesion (psf)	Rock Bond Strength (ksf)
Sandy lean clay / highly weathered shale	CL	Very stiff to hard / soft rock	3	120	1.3	0	2,000	N/A
Sandy lean clay / highly weathered shale	CL	Hard / soft rock	6	120	2.6	0	4,000	N/A
Shale	--	Moderately hard rock	10.5	125	735	35	3,000	7

1. Approximate depth is below the existing ground surface
2. Soil cohesion and angle of internal friction values are based on SPT N_{60}-values and laboratory test results averaged over the layer thickness. For shale bedrock effective parameters are presented, c' and φ'.
3. Free water was not observed in the borings after completion of drilling by dry auger. Water was injected during the rock coring process, so groundwater levels could not be obtained after completion of rock coring.

PRELIMINARY DRILLED CONCRETE SHAFT DESIGN SOIL PARAMETERS

Substation Boring Sub-2

Layer type	USCS	Consistency / Rock Hardness	Bottom Depth[1] (ft)	Total Unit Weight (pcf)	Modulus of Deformation (ksi)	Friction Angle[2] Φ' (degrees)	Undrained shear Strength or Rock Cohesion (psf)	Rock Bond Strength (ksf)
Sandy lean clay	CL	Stiff to very stiff	3	120	1.0	0	1,500	N/A
Sandy lean clay with shale pieces	CL	Hard	6	120	2.6	0	4,000	N/A
Highly weathered shale	--	Soft rock	11	125	100	0	2,000	7
Shale	--	Moderately hard rock	16	125	1,500	36	3,200	7

1. Approximate depth is below the existing ground surface
2. Soil cohesion and angle of internal friction values are based on SPT N_{60}-values and laboratory test results averaged over the layer thickness. For shale bedrock effective parameters are presented, c' and φ'.
3. Free water was not observed in the borings after completion of drilling by dry auger. Water was injected during the rock coring process, so groundwater levels could not be obtained after completion of rock coring.

PRELIMINARY DRILLED CONCRETE SHAFT DESIGN SOIL PARAMETERS

Transmission Line Boring TL-1

Layer type	USCS	Consistency / Rock Hardness	Bottom Depth[1] (ft)	Total Unit Weight (pcf)	Modulus of Deformation (ksi)	Friction Angle[2] Φ' (degrees)	Undrained shear Strength or Rock Cohesion (psf)	Rock Bond Strength (ksf)
Lean clay	CL	Medium stiff to very stiff	3	120	0.7	0	1,000	N/A
Highly weathered shale	--	Soft rock	7	125	2.6	0	4,000	N/A
Interbedded sandstone and shale	--	Moderately hard rock	11	125	595	34	2,800	7
Shale	--	Moderately hard rock	16	125	735	36	3,000	7

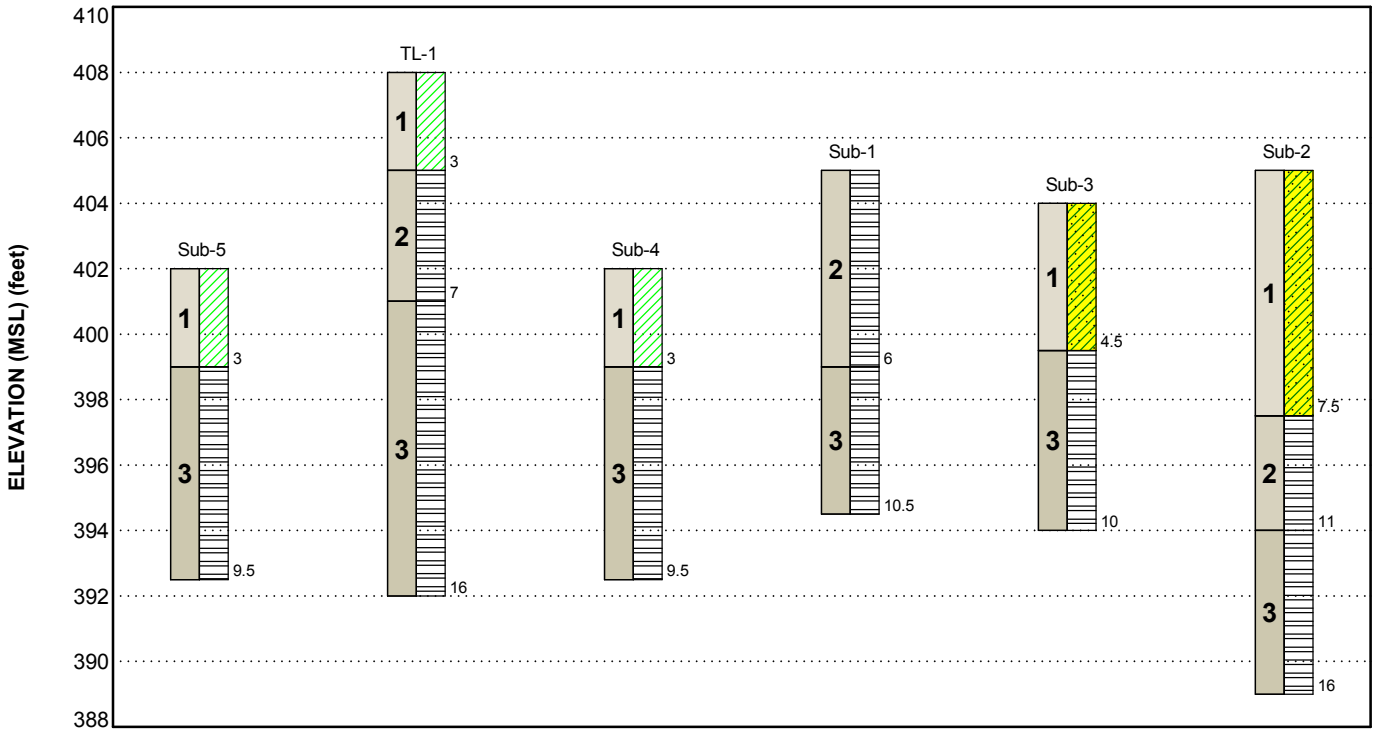
1. Approximate depth is below the existing ground surface
2. Soil cohesion and angle of internal friction values are based on SPT N_{60}-values and laboratory test results averaged over the layer thickness. For shale bedrock effective parameters are presented, c' and φ'.
3. Free water was not observed in the borings after completion of drilling by dry auger. Water was injected during the rock coring process, so groundwater levels could not be obtained after completion of rock coring.

FIGURES

Contents:

GEOMODEL

Russleville Substation Cut In ■ Russleville, Arkansas
12/6/2018 ■ Terracon Project No. 35185126



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	**overburden soils**	lean clay with varying amounts of sand and shale fragments
2	**Weak Rock**	Highly weathered and soft shale bedrock
3	**Moderately Hard Rock**	Moderately hard shale bedrock

LEGEND

- Shale
- Sandy Lean Clay
- Lean Clay

- First Water Observation
- Second Water Observation
- Final Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

ATTACHMENTS

SITE LOCATION PLAN

Russellville Substation Cut In ■ Russellville, Arkansas
December 7, 2018 ■ Terracon Project No. 35185126

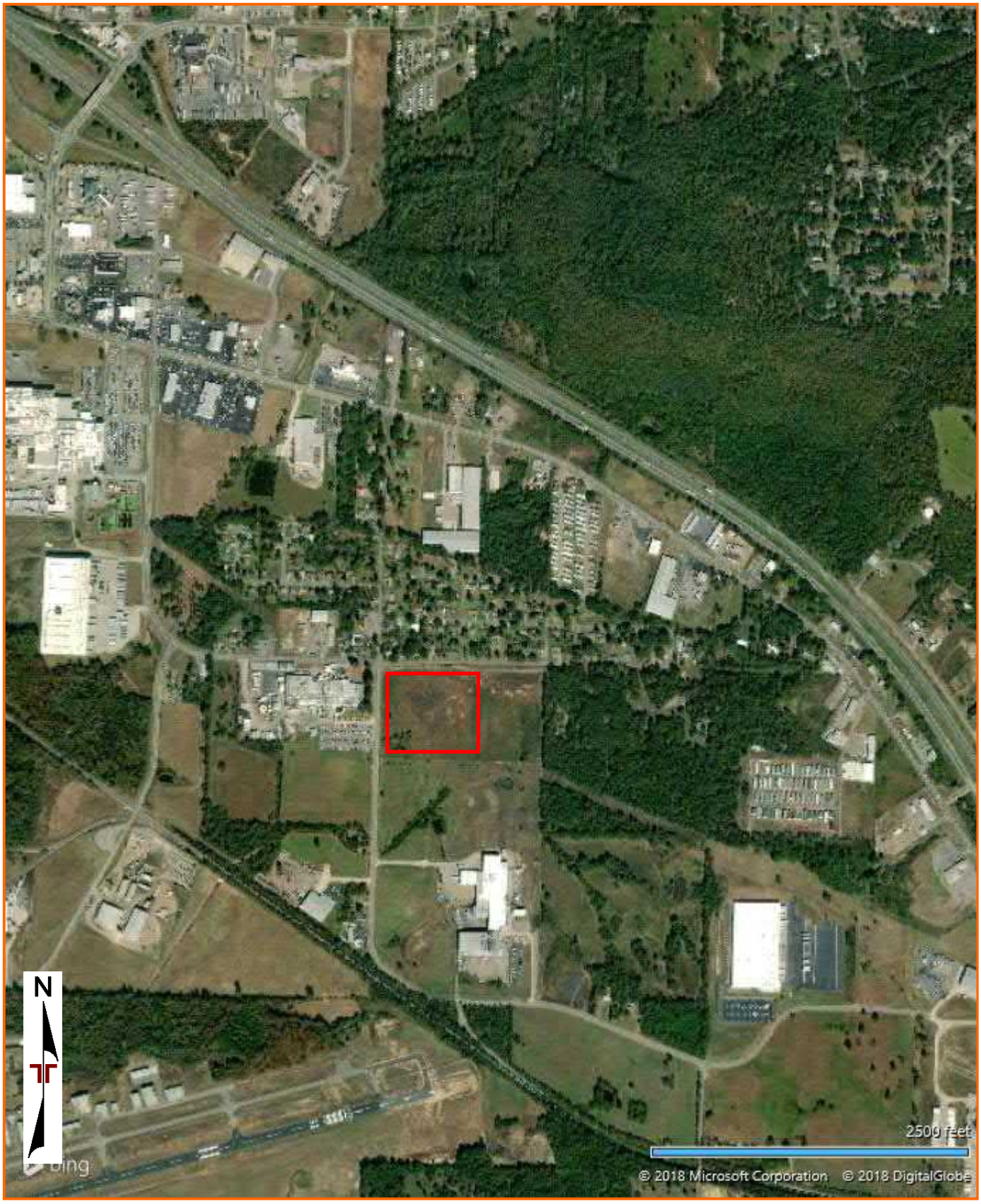


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

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AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Borings	Boring Depth (feet)	Planned Location
5	9.5 to 16	Substation
1	16	Transmission Line

Boring Layout and Elevations: The location of the field exploration points (borings) were established in the field by Terracon's exploration team using a measuring tape and a hand-held GPS unit to measure the boring locations with reference to known points. The accuracy of the exploration point is usually within about 10 feet of the noted location when using the GPS.

Subsurface Exploration Procedures: We advanced the borings with a track-mounted, ATV-mounted rotary drill rig using continuous flight augers (solid stem and/or hollow stem) and rock coring techniques. Samples were obtained continuously until auger refusal. We obtained representative samples primarily by the split-barrel sampling procedure. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. We observed and recorded groundwater levels during drilling and sampling.

Upon encountering bedrock or refusal-to-drilling conditions, rock coring (using NQ rock core barrel) was performed at the borings. Rock coring was performed at each boring to depths of 5 to 10 feet beyond auger refusal. Water was used as a drilling fluid for rock coring and the spent water was discharged onsite.

We backfilled the borings with auger cuttings, bentonite chips and a plastic "spider plug: upon completion. Excess auger cuttings were dispersed in the general vicinity of the borehole. Because backfill material often settles below the surface after a period, we recommend boreholes to be periodically checked and backfilled, if necessary. We can provide this service or grout the boreholes for additional fees, at your request.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the

Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

As requested, an electrical earth resistivity survey (EERS) was performed at the substation using the 4-point Wenner array method. The “a” spacing was 5, 10, 20, 30, 40, 60, 80 and 100 feet or as accessible to the testing equipment and permitted by site boundaries.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- Laboratory Determination of Water (moisture) Content of Soil by Mass
- Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- Particle-Size Analysis of Soils
- Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing

The laboratory testing program often included examination of soil and rock samples by an engineer. Based on the material’s texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System. Rock classification was conducted using locally accepted practices for engineering purposes.

EXPLORATION RESULTS

Contents:

Boring Logs (Sub-1 through Sub-5 and TL-1 through TL-4)
Earth Electrical Resistivity Results (EERs)

Note: All attachments are one page unless noted above.

BORING LOG NO. Sub-1

PROJECT: Russellville Substation Cut In

CLIENT: Entergy Services, Inc.
New Orleans, Louisiana

SITE: Tyler Rd and E 6th Street
Russleville, Arkansas

LOCATION See Exhibit A-2

Latitude: 35.2696° Longitude: -93.0833°

GRAPHIC LOG	DEPTH	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	HIGHLY WEATHERED SHALE, with sandstone fragments, brown and gray, soft rock					5-8-17 N=25	13			
						27-39-29 N=68	16			
						11-23-29 N=52	10			
			5			25-50/3"	10			
	6.0									
	SHALE, dark gray, slightly fractured, slightly weathered, moderately hard, laminated					REC: 98% RQD: 76%				
	10.5		10							
	Boring Terminated at 10.5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0 to 6 feet: Solid-stem auger
6 to 10.5 feet: Diamond-bit NQ core barrel

Abandonment Method:
Borings backfilled with auger cuttings, bentonite chips, and plastic spider plug

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed while drilling by dry auger

Terracon
25809 I 30
Bryant, AR

Boring Started: 10-22-2018 | Boring Completed: 10-22-2018
Drill Rig: Acker #679 | Driller: TF
Project No.: 35185126 | Exhibit: A-1

BORING LOG NO. Sub-2

PROJECT: Russellville Substation Cut In

CLIENT: Entergy Services, Inc.
New Orleans, Louisiana

SITE: Tyler Rd and E 6th Street
Russleville, Arkansas

LOCATION See Exhibit A-2
Latitude: 35.2692° Longitude: -93.0831°

GRAPHIC LOG	DEPTH	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY LEAN CLAY (CL), brown, stiff to hard					3-5-6 N=11	21			
						4-5-18 N=23	18		45-21-24	65
	- with shale fragments at about 3 feet					40-50/4"	8			
			5			24-26-50/6"	13			
	7.5									
	HIGHLY WEATHERED SHALE, brown and dark gray, extremely fractured, highly weathered, soft rock, laminated					REC: 50% RQD: 19%				
	11.0		10							
	SHALE, gray, slightly fractured, slightly weathered, moderately hard rock, laminated					REC: 100% RQD: 93%				
	16.0		15							
	Boring Terminated at 16 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0 to 7.5 feet: Solid-stem auger
7.5 to 16 feet: Diamond-bit NQ core barrel

Abandonment Method:
Borings backfilled with auger cuttings, bentonite chips, and plastic spider plug

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed while drilling by dry auger

Terracon
25809 I 30
Bryant, AR

Boring Started: 10-23-2018	Boring Completed: 10-23-2018
Drill Rig: Acker #679	Driller: TF
Project No.: 35185126	Exhibit: A-2

BORING LOG NO. Sub-3

PROJECT: Russellville Substation Cut In

CLIENT: Entergy Services, Inc.
New Orleans, Louisiana

SITE: Tyler Rd and E 6th Street
Russleville, Arkansas

LOCATION See Exhibit A-2

Latitude: 35.2693° Longitude: -93.0834°

GRAPHIC LOG	DEPTH	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY LEAN CLAY (CL), with shale fragments, brown and gray, very stiff to hard					4-6-11 N=17	12		47-19-28	64
						12-17-32 N=49	10			
						26-44-50/1"	9			
	4.5									
	SHALE, dark gray, slightly fractured, slightly weathered, moderately hard rock, laminated		5			50/4"	4			
						REC: 98% RQD: 90%				
	10.0		10							
	Boring Terminated at 10 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0 to 6 feet: Solid-stem auger
6 to 10 feet: Diamond-bit NQ core barrel

Abandonment Method:
Borings backfilled with auger cuttings, bentonite chips, and plastic spider plug

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed while drilling by dry auger

Terracon
25809 I 30
Bryant, AR

Boring Started: 10-23-2018 | Boring Completed: 10-23-2018
Drill Rig: Acker #679 | Driller: TF
Project No.: 35185126 | Exhibit: A-3

BORING LOG NO. Sub-4

PROJECT: Russellville Substation Cut In

CLIENT: Entergy Services, Inc.
New Orleans, Louisiana

SITE: Tyler Rd and E 6th Street
Russleville, Arkansas

LOCATION See Exhibit A-2

Latitude: 35.2693° Longitude: -93.0838°

GRAPHIC LOG	DEPTH	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL), with shale fragments, brown and gray, very stiff to hard					5-11-14 N=25	12			
						15-50/6"	9			
	3.0 **SHALE**, gray, slightly fractured, slightly weathered, soft to moderately hard rock, laminated					50/5"	8			
			5			REC: 100% RQD: 76%				
	9.5 ***Boring Terminated at 9.5 Feet***									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0 to 4.5 feet: Solid-stem auger
4.5 to 9.5 feet: Diamond-bit NQ core barrel

Abandonment Method:
Borings backfilled with auger cuttings, bentonite chips, and plastic spider plug

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed while drilling by dry auger

Terracon
25809 I 30
Bryant, AR

Boring Started: 10-23-2018 | Boring Completed: 10-23-2018
Drill Rig: Acker #679 | Driller: TF
Project No.: 35185126 | Exhibit: A-4

BORING LOG NO. Sub-5

PROJECT: Russellville Substation Cut In

CLIENT: Entergy Services, Inc.
New Orleans, Louisiana

SITE: Tyler Rd and E 6th Street
Russleville, Arkansas

LOCATION See Exhibit A-2

Latitude: 35.2696° Longitude: -93.0839°

DEPTH	GRAPHIC LOG		INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		LEAN CLAY (CL), with shale fragments, brown and gray, very stiff to hard					4-11-17 N=28	9			
							26-24-27 N=51	14			
3.0		**SHALE**, dark gray and reddish-brown, slightly fractured, slightly weathered, moderately hard rock, laminated					50/5"	7			
				5			REC: 100% RQD: 68%				
9.5		***Boring Terminated at 9.5 Feet***									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0 to 4.5 feet: Solid-stem auger
4.5 to 9.5 feet: Diamond-bit NQ core barrel

Abandonment Method:
Borings backfilled with auger cuttings, bentonite chips, and plastic spider plug

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed while drilling by dry auger

Terracon
25809 I 30
Bryant, AR

Boring Started: 10-23-2018	Boring Completed: 10-23-2018
Drill Rig: Acker #679	Driller: TF
Project No.: 35185126	Exhibit: A-5

BORING LOG NO. TL-1

PROJECT: Russellville Substation Cut In

CLIENT: Entergy Services, Inc.
New Orleans, Louisiana

SITE: Tyler Rd and E 6th Street
Russleville, Arkansas

LOCATION See Exhibit A-2
Latitude: 35.2703° Longitude: -93.0836°

DEPTH	Description	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.0	**LEAN CLAY (CL)**, with shale fragments, reddish-brown, medium stiff to very stiff	1-3-3 N=6	24		42-19-23	91
		7-7-10 N=17	21			
3.0	**HIGHLY WEATHERED SHALE**, gray, soft rock	21-33-44 N=77	10			
5		10-29-50/4"	8			
7.0		40-50/6"	15			
	INTERBEDDED SANDSTONE AND SHALE, light gray and dark gray, slightly fractured, slightly weathered, moderately hard rock, laminated	REC: 77% RQD: 54%				
10						
11.0	**SHALE**, with sandstone seams, light gray, slightly fractured, unweathered, moderately hard rock	REC: 99% RQD: 85%				
15						
16.0	***Boring Terminated at 16 Feet***					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
0 to 7 feet: Solid-stem auger
7 to 16 feet: Diamond-bit NQ core barrel

Abandonment Method:
Borings backfilled with auger cuttings, bentonite chips, and plastic spider plug

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

No free water observed while drilling by dry auger

Terracon
25809 I 30
Bryant, AR

Boring Started: 10-22-2018 | Boring Completed: 10-22-2018
Drill Rig: Acker #679 | Driller: TF
Project No.: 35185126 | Exhibit: A-6

ELECTRICAL EARTH RESISTIVITY SURVEY
Russellville Substation Cut In
Russellville Arkansas
Terracon Project No. 35185126
TEST NO. 1 (North-South Line)

STATION NAME: Russellville Substation Cut In

STATION LOCATION: 35.2694, -93.0836

DATE: 11/8/2018

TEMPERATURE: 50°

SOIL MOISTURE: Wet

SURFACE SOIL TYPE: Lean clay with shale

TEST INSTRUMENT TYPE: Wenner 4 Electrode

TESTED BY: DT

TEST NO.	ELECTRODE SPACING "C" (FEET)	TEST PROBE DEPTH (INCHES)	METER READING, "C" TEST (OHMS)	MULTIPLIER	EARTH RESISTIVITY (OHM-CM)
1	5	12	5.06	958	4,846
2	10	12	3.08	1,916	5,900
3	20	12	1.58	3,831	6,053
4	30	12	1.23	5,747	7,068
5	40	12	1.02	7,662	7,815
6	60	12	0.67	11,490	7,701
7	80	12	0.47	15,320	7,202
8	100	12	0.37	19,160	7,088

Notes:

Terracon
Consulting Engineers & Scientists

ELECTRICAL EARTH RESISTIVITY SURVEY
Russellville Substation Cut In
Russellville Arkansas
Terracon Project No. 35185126
TEST NO. 2 (East - West Line)

STATION NAME: Russellville Substation Cut In

STATION LOCATION: 35.2694, -93.0836

DATE: 11/8/2018

TEMPERATURE: 50°

SOIL MOISTURE: Wet

SURFACE SOIL TYPE: Lean clay with shale

TEST INSTRUMENT TYPE: Wenner 4 Electrode

TESTED BY: DT

TEST NO.	ELECTRODE SPACING "C" (FEET)	TEST PROBE DEPTH (INCHES)	METER READING, "C" TEST (OHMS)	MULTIPLIER	EARTH RESISTIVITY (OHM-CM)
1	5	12	2.05	958	1,963
2	10	12	0.92	1,916	1,762
3	20	12	0.54	3,831	2,069
4	30	12	0.42	5,747	2,414
5	40	12	0.34	7,662	2,605
6	60	12	0.26	11,490	2,988
7	80	12	0.21	15,320	3,218
8	100	12	0.16	19,160	3,065

Notes:

Terracon
Consulting Engineers & Scientists

SUPPORTING INFORMATION

Contents:

Note: All attachments are one page unless noted above.

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING

WATER LEVEL

Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

N	**Standard Penetration Test Resistance (Blows/Ft.)**
(HP)	**Hand Penetrometer**
(T)	**Torvane**
(DCP)	**Dynamic Cone Penetrometer**
(PID)	**Photo-Ionization Detector**
(OVA)	**Organic Vapor Analyzer**

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		**CONSISTENCY OF FINE-GRAINED SOILS** (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (psf)**	**Standard Penetration or N-Value Blows/Ft.**
Very Loose	0 - 3	Very Soft	less than 500	0 - 1
Loose	4 - 9	Soft	500 to 1,000	2 - 4
Medium Dense	10 - 29	Medium Stiff	1,000 to 2,000	4 - 8
Dense	30 - 50	Stiff	2,000 to 4,000	8 - 15
Very Dense	> 50	Very Stiff	4,000 to 8,000	15 - 30
		Hard	> 8,000	> 30

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

Terracon

Exhibit: C-1

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or [$Cc<1$ or $Cc>3.0$] [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or [$Cc<1$ or $Cc>3.0$] [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A"		CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K, L, M]
			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
			Liquid limit - not dried			Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

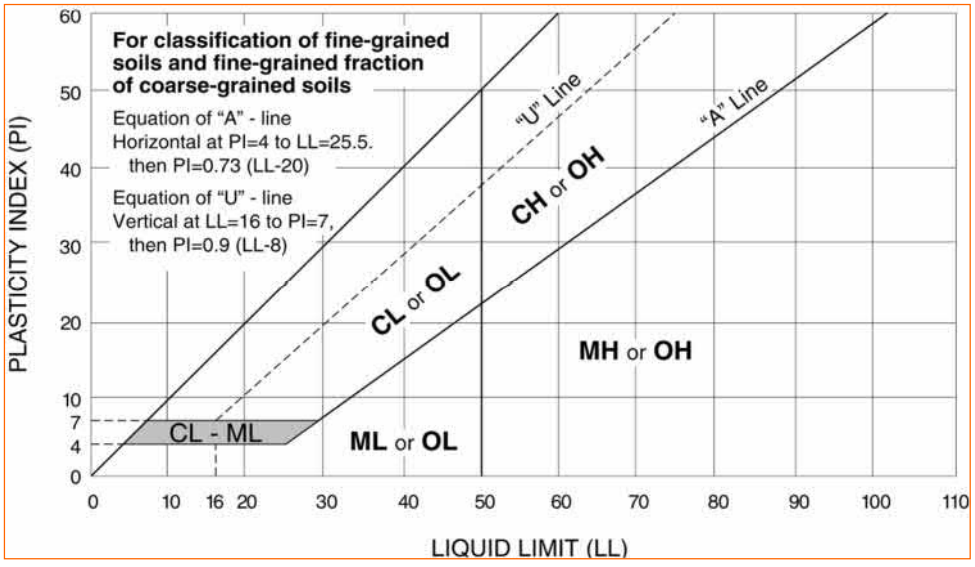
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



Grubbs, Garner & Hoskyn, Inc.,
Consulting Engineers

10501 Stagecoach Road P.O. Box 55105 Little Rock, AR 72215-5105 (501) 455-2536 Fax: (501) 455-4137

July 10, 1997
Job No. 97-408

Russellville Economic Development Partnership, Inc.
Jeff Pipkin, Director
708 West Main
Russellville, Arkansas 72801

REF: PRECONSTRUCTION SOIL EVALUATION
40A TRACT - ROBINSON
EAST END INDUSTRIAL PARK
RUSSELLVILLE, ARKANSAS

As requested by Mr. Robby Robinson, we have prepared a Preconstruction Soil Evaluation for the referenced tract in the East End Industrial Park. Our evaluation was based on prior geotechnical studies in the Industrial Park and on contiguous properties.

The primary purposes of this study were to:

a) Establish basic soil and rock stratigraphy and review engineering properties and characteristics of the foundation strata; and

b) Prepare preliminary conclusions regarding potential foundation types, site grading conditions, and other geotechnical factors of consequence to design development and control cost estimates.

This evaluation is not intended to present final design criteria for foundations, pavements, or site grading for a specific facility. Rather, final design should be based on a geotechnical study planned on the basis of the intended building siting, structural characteristics, and grading requirements. This evaluation may, however, be utilized in the comprehension study.

GENERAL SUBSURFACE CONDITIONS

The tract is a gently to moderately sloping site. Existing vegetation consists primarily of pasture with some scattered trees mostly along fence rows. The site is bounded by Tyler Road on the west and abuts CARMAR, Inc. facility on the east. The Union Pacific Railroad forms the south boundary and Industrial Boulevard crosses the north side (see Plate 1).

Geologically, the site is underlain primarily by overburden soils consisting of silty clays and clayey silts. The near surface soils are comprised of moisture sensitive clayey silts with organic matter. These surficial soils extend to about 1.5 to 2.5 ft but may be locally deeper in swales and/or natural drainage.

These surficial soils are underlain by residual silty clays which extend to depths of about 5 to 7 ft below existing grades. The silty clays exhibit moderate stability and strength properties and generally low plasticity.

The overburden soils are underlain by parent shale units of the Atoka Formation. The shale units grade from soft highly weathered tan and gray clayey shale to moderately hard dark gray shale. The highly weathered intervals of the nearly flat bedded shale generally comprise the upper 4 to 6 ft of formation. Although locally variable, the harder dark gray shale is generally present below depths of 8 to 12 ft.

The basic properties and characteristics of the soil and rock strata underlying the tract considered of primary consequence to individual facility siting and foundation design are summarized below:

- . . . The presence of 1.5 to 2.5 ft of moisture sensitive silty soils and the inherent potential for strength loss during wetter seasons.
- . . . The moderate shear strength and typically low plasticity of the residual silty clay soils found from about 2 ft to 5 to 7 ft below present grades.
- . . . The higher strengths of the weathered shale and increasing strengths with penetration into the fresh dark gray shale typically found below depths of 8 to 12 ft.

These factors were considered in subsequent comments and conclusions relative to preliminary design and site planning.

CONCLUSIONS

The construction of an individual facility on the 40 A tract will likely require some cut and fill to establish finished grades. Site development cost will be impacted by site grading requirements. Foundation type, depths, and allowable bearing pressures will be impacted by building type and structural features, as well as, cut and fill requirements. Preliminary foundation design and site grading conclusions are presented in subsequent sections.

FOUNDATION CONSIDERATIONS

The surficial clay silts and silts provide low strength and are typically subject to loss of strength and increased compressibility with saturation. Foundations should be supported below these surficial soil types. Typically, these soils are undercut due to instability under construction equipment when wet and/or as a result of poor support properties for structural elements or pavement sections.

Light foundation loads and floor slabs may be supported on the stiff residual silty clay soils. For individual and continuous spread footings founded at depths of 3 to 4 ft, allowable soil bearing pressures of 2500 to 3500 may be anticipated. Slab-on-grade floor systems may be supported on the silty clays. Typically subgrade modulus values on the order of 100 to 120 pci can be obtained with proper subgrade preparation.

The foundations for heavy structural loads may consist of straight drilled piers founded in either the weathered shale or deeper competent moderately hard dark gray shales. Allowable end bearing values on the order of 10 to 15 kips per sq ft may be appropriate for the weathered shale intervals. Final bearing values of 30 to 60 kips per sq ft may be obtained in the dark gray shale. Penetrations of 3 to 15 ft into the dark gray shale may be anticipated to obtain the capacities noted.

Straight drilled pier foundation systems can generally be installed with medium to heavy-duty drilling equipment. However, the shale contains some thin hard sandstone/siltstone interbedding which can require use of rock teeth or other heavy-duty tools. The dark gray shale is subject to development of seepage and down-hole pumping could be warranted at greater penetration depths. Seepage may also be encountered in the weathered shale during wetter seasons.

SITE GRADING CONSIDERATIONS

Site grading activities involving cuts of up to 8 to 10 ft can typically be performed by medium to heavy-duty equipment. On the other hands deeper cuts into the harder dark gray shale may require heavy ripping due, in part, to the presence of sandstone interbedding.

During wetter seasons, the near surface silty soils typically become unstable and are subject to rutting/pumping. Consequently, undercutting to depths of 2 to 3 ft may be required in wet periods. Perched water seepage may also develop in the surficial silt during wet seasons.

The residual silty clays exhibit lower sensitivity and undercutting should not typically be required. However, during extended wet periods saturation and perched seepage can create instability under construction activity. It is prudent to perform site grading during normally drier summer and fall months to reduce undercut potential.

The residual silty clays and weathered shale strata generally provide satisfactory fill for building foundations, floor slabs, and pavement sections. The upper silts should not be used for structure or pavement support.

As noted the potential exists for seasonal perched groundwater development. As a consequence, the installation of French drains may be warranted to intercept downgradient flow into building or pavement areas. The potential for seepage is particularly high when the weathered shale interval is intercepted in cuts or present at or is slightly below subgrade.

PAVEMENT CONSIDERATIONS

While specific criteria for pavement design cannot be prepared without site grading criteria and traffic data, the use of either flexible (asphalt) or rigid (PCCP) paving systems should be possible. CBR values of 4 to 8 and subgrade modulus values of 80 to 120 pci should be obtainable in the residual silty clay and weathered shales. The upper silts should not be used for subgrade below pavement sections.

Improvement in subgrade support by cement and lime modification has historically not been cost effective due primarily to the rather reasonable cost of undercutting and replacement with select fill. Some drying by flyash incorporation has been effective during wetter seasons. The use of geotextile support fabric may also have application locally or seasonally.

We appreciate the opportunity to be of assistance in preparation of this Preconstruction Soil Evaluation for the Industrial site. If there are any questions or as we may be of service in comprehensive geotechnical services for the tract, please contact us.

Very truly yours,

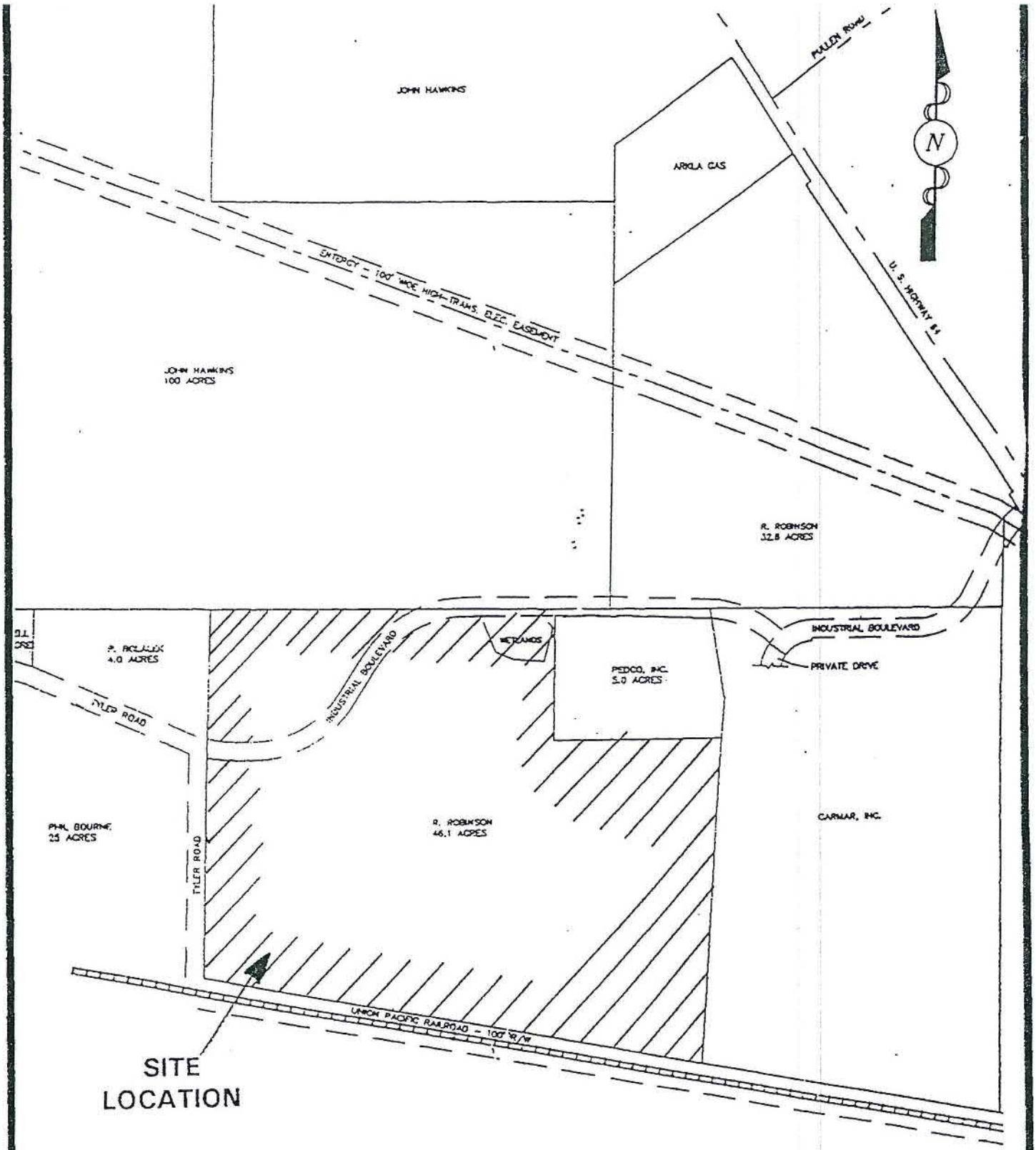
GRUBBS, GARNER & HOSKYN, INC.

Carl W. Garner, P.E.
Vice President

CWG/caa

Copies Submitted: Russellville Economic Development Partnership, Inc.
Attn: Mr. Jeff Pipkin (2 + fax)

Robinson, Inc.
Attn: Mr. Robby Robinson (2 + fax)



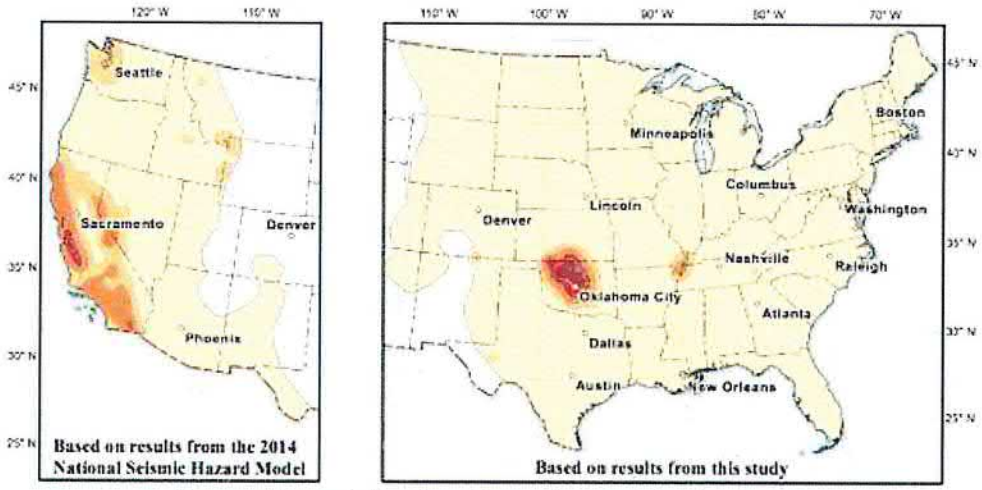
40-ACRE TRACT - ROBINSON

East End Industrial Park

Russellville, Arkansas - Job No. 97-408

Grubbs, Garner & Hoskyn, Inc.,
Consulting Engineers

PLATE 1



* equivalent to Modified Mercalli Intensity VI, which is defined as: "Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight."

USGS
science for a changing world

Earthquake Hazards

2018 United States (Lower 48) Seismic Hazard Long-term Model

The 2018 Update of the U.S. National Seismic Hazard Model defines the potential for earthquake ground shaking for various probability levels across the conterminous United States and is applied in seismic provisions of building codes, insurance rate structures, risk assessments, and other public policy. The updated model represents an assessment of the best available science in earthquake hazards and incorporates new findings on earthquake ground shaking, seismicity, and long-period amplification over deep sedimentary basins. The new model represents an update of the seismic hazard model; previous versions were developed in 1996, 2002, 2008, and 2014.

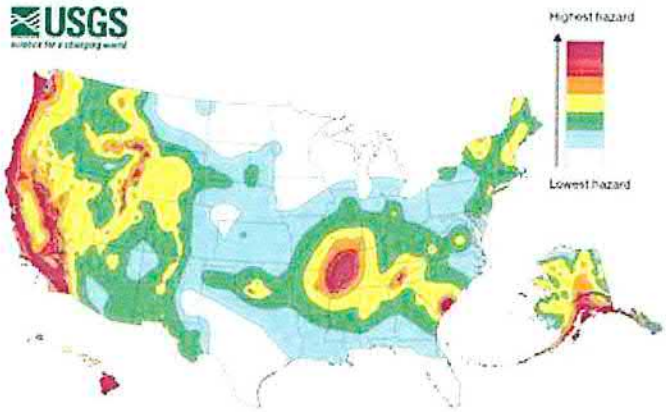
Status - Completed

Contacts

Explore More Science:

Earthquake Hazards
Earthquakes
Natural Hazards

The output from the National Seismic Hazard Model is a suite of seismic hazard curves calculated on a grid of latitude/longitude locations across the conterminous United States that describe the annual frequency of exceeding a set of ground motions. Hazard curves and probabilistic hazard data and maps for V_{S30} equal to 760 m/s and 260 m/s (NEHRP site class B/C and D), for 0.2, 1.0, and 5.0 second periods, as well as PGA, are available for download below, in the Child Items. Maps depict probabilistic ground motions with a 2 percent, 5 percent, and 10 percent probability of exceedance in 50 years. Spectral accelerations are calculated for 5 percent damped linear elastic oscillators. Additional maps and data portraying the chance of damaging earthquake shaking, probabilistic Modified Mercalli Intensity, and the seismicity catalog used in the hazard model are also available for download.



2018 Long-term National Seismic Hazard Map (Public domain.)

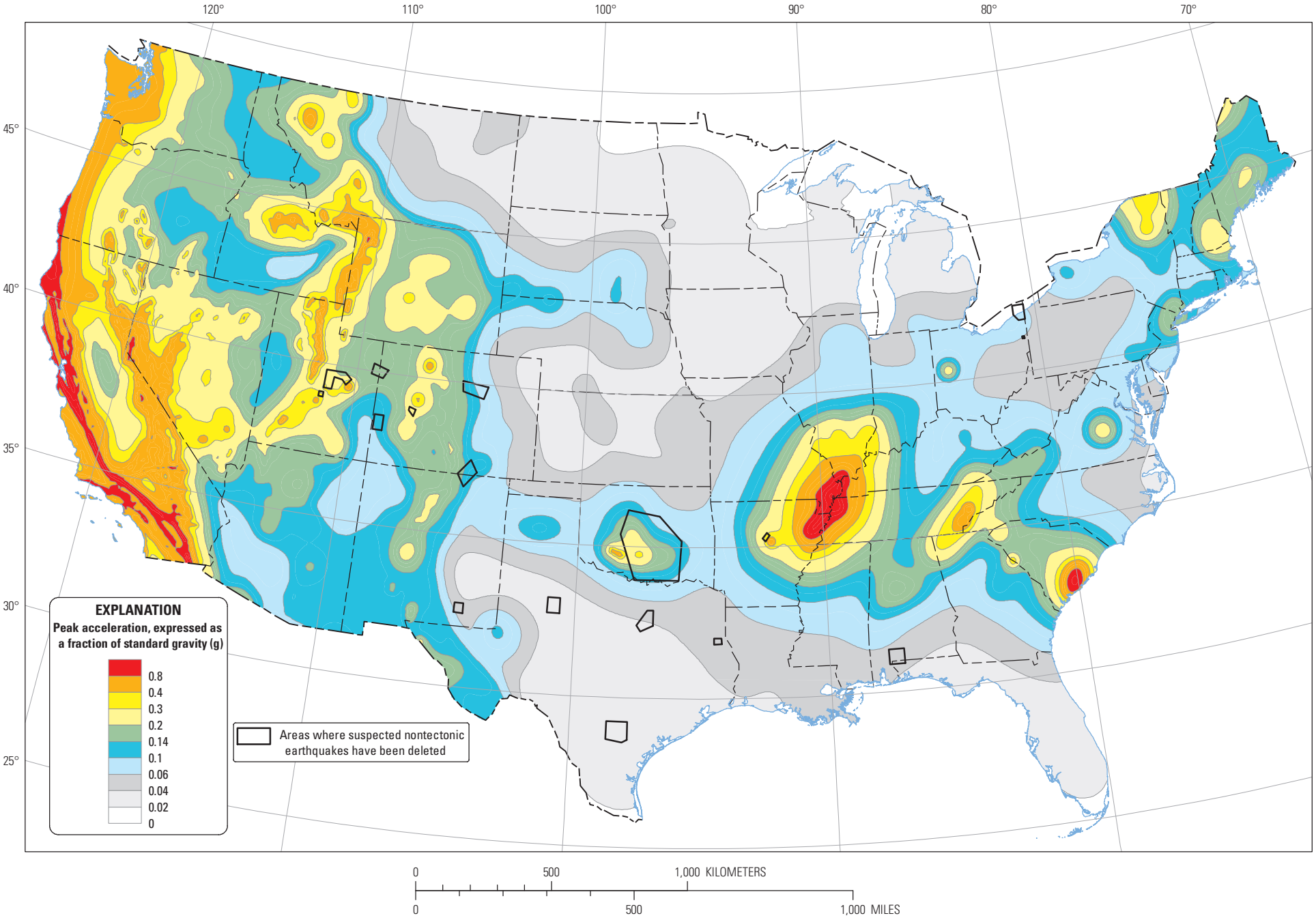
Documentation: Petersen, M. D., Shumway, A. M., Powers, P. M., Mueller, C. S., Moschetti, M. P., Frankel, A. D., … Zeng, Y. (2019). The 2018 update of the US National Seismic Hazard Model: Overview of model and implications. Earthquake Spectra.

Maps for Media: Click on image to access hi-reslolution version.

Scientific Data:

- hazard curves and ground motion data, hazard maps, MMI maps, catalogs, basin data
- additional period and site class hazard curves and ground motion data
- Source Code
- Source Model

Note: The 2018 NSHM data will be available in our online web tool (Unified Hazard Tool) in early 2020.



Two-percent probability of exceedance in 50 years map of peak ground acceleration

Zoning/Permitting

Copy of Restrictive Covenants:

The current Height Zoning Ordinance (No. 2336) for the Russellville Regional Airport, which includes the FAA Part 77 maps is provided as attachment Z-1. Generally speaking, the 45-acre site has a height limit of forty feet. The Airport Height Zoning Ordinance requires that any structure being built in the runway departure or approach zones be evaluated by the FAA for any obstruction concerns for aircraft. This is done by filing an Obstruction Evaluation/Airport Airspace Analysis which can be found at oeaaa.faa.gov.

Current Classification and Proposed Zoning (if different) to Conform with Intended Use:

This site is zoned M-2 Heavy Industrial. See attachment Z-2.

Copy of Zoning Ordinance:

See attachment Z-2 for detail regarding applicable manufacturing district zoning codes. A complete copy of the Zoning Code can be found at https://www.russellvillearkansas.org/DocumentCenter/View/1041/Russellville-Zoning-Code-PDF?bidId=

Explanation of Process to Change Zoning:

Company would submit a zoning change request to the City of Russellville Public Works Department. After review and the 30-day public comment period as required by law, the request would then be considered by the Russellville Planning Commission. Request would then ultimately be approved by the Russellville City Council. The Alliance will guide the company through the process the entire way. The entire re-zoning process will be completed within 60 days of receipt of the zoning change request.

This Instrument Prepared by:

William F. Smith
203 South Commerce Ave.
Russellville, AR 72801

SEAL OF THE CIRCUIT COURT POPE COUNTY ARKANSAS

CERTIFICATE OF RECORD
DOCUMENT NUMBER: 2019-08486
FILED: 10/21/2019 08:51 AM
POPE COUNTY, ARKANSAS
RACHEL L. OERTLING
TRACY LUSK, D.C.
PAGES: 14
FEE: $ 80.00

Ordinance

INSTRUMENT TYPE

City of Russellville

GRANTOR

Ordinance #2336

GRANTEE

Tx#4042837

Prepared by:
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City Attorney
203 South Commerce Street
Russellville, AR 72801
Sponsor: Airport Dept.
OB#1

ORDINANCE NO. 2336

AN ORDINANCE TO MODERNIZE THE CURRENT AIRPORT ZONING TO CORRELATE TO THE CHANGES AT THE RUSSELLVILLE MUNICIPAL AIRPORT SINCE THE ORIGINAL AIRPORT ZONING IN 1987; REPEALING ORDINANCE NOS. 1243, 1264 AND 1272 AND FOR OTHER PURPOSES

WHEREAS, it is hereby found that obstructions have the potential for endangering the lives and property of users of Russellville Municipal Airport, and property or occupants of land in its vicinity; and,

WHEREAS, any obstruction may affect existing and future approach minimums of Russellville Municipal Airport; and that any obstruction may reduce the size of areas available for the landing, takeoff, and maneuvering of aircraft, thus tending to destroy or impair the utility of Russellville Airport and the public investment therein. Accordingly, it is declared:

(1) That the creation or establishment of any obstruction has the potential of being a public nuisance and may injure the region served by Russellville Airport;

(2) That it is necessary in the interest of the public health, public safety, and general welfare that the creation or establishment of obstructions that are a hazard to air navigation be prevented; and

(3) That the prevention of these obstructions should be accomplished, to the extent legally possible, by the exercise of the police power without compensation.

WHEREAS, it is further declared that the prevention of the creation or establishment of hazards to air navigation, the elimination, removal, alteration or mitigation of hazards to air navigation, or marking and lighting of obstructions are public purposes for which a political subdivision may raise and expend public funds and acquire land or interests in land; and

WHEREAS, Ordinance Nos. 1243, 1264 and 1272 were passed in 1987 and circumstances have changed to the extent that portions of those ordinances no longer reflect the current conditions at Russellville Municipal Airport and that a new ordinance is needed to bring the regulations as outlined in those ordinances to match the current circumstances at Russellville Municipal Airport; and

WHEREAS, this Ordinance is adopted pursuant to the authority conferred by the Airport Zoning Enabling Act, Act 116 of 1941, of the laws of the State of Arkansas.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF RUSSELLVILLE, ARKANSAS, OF THE FOLLOWING:

SECTION 1: SHORT TITLE. This Ordinance shall be known and may be cited as the Russellville Municipal Airport Zoning Ordinance.

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OB#1

SECTION 2: INCORPORATION OF PREAMBLE. The preamble is incorporated herein as fully set forth above.

SECTION 3: DEFINITIONS. As used in this Ordinance, unless the context otherwise requires:

(a) AIRPORT – means Russellville Municipal Airport.
(b) AIRPORT ELEVATION – Established at 403.6 feet above mean sea level.
(c) AIRPORT REFERENCE POINT – The airport reference point is established at the midpoint of the centerline of the runway pavement and is more particularly described as follows: Beginning at the northeast corner of the northeast ¼ of Section 14, T-7-N, R-20-W, thence west along the north boundary line of the said Section 14 a distance of 2,462.93 feet, thence south 1,572.05 feet to the midpoint of the centerline of the runway pavement, said midpoint also being the airport reference point.
(d) APPROACH SURFACE – A surface longitudinally centered on the extended runway centerline, extending outward and upward from the end of the primary surface and at the same slope as the approach zone height limitation slope set forth in Section 5 of this Ordinance. In plan the perimeter of the approach surface coincides with the perimeter of the approach zone.
(e) APPROACH, TRANSITIONAL, HORIZONTAL, AND CONICAL ZONES – These zones are set forth in Section 4 of this Ordinance.
~~(f) BOARD OF ADJUSTMENT-A board established by the current City Zoning Code~~
(g) CONICAL SURFACE – A surface extending outward and upward from the outer perimeter of the horizontal surface at a slope of thirty-four (34) feet horizontal for each one (1) foot vertical for a horizontal distance of 4,000 feet.
(h) FEDERAL AVIATION ADMINISTRATION ("FAA") – An agency of the United States Department of Transportation responsible for the regulation and oversight of civil aviation within the U.S., as well as operation and development of the National Airspace System. Its primary mission is to ensure safety of civil aviation.
(i) HAZARD TO AIR NAVIGATION – An obstruction determined to have a substantial adverse effect on the safe and efficient utilization of the navigable airspace.
(j) HEIGHT – For the purpose of determining the height limits in all zones set forth in this Ordinance and shown on the zoning map, the datum shall be mean sea level elevation unless otherwise specified.
(k) HORIZONTAL SURFACE – A horizontal plane 150 feet above the established airport elevation. The outer perimeter of which in plan coincides with the outer perimeter of the horizontal zone.
(l) NONCONFORMING USE – Any pre-existing structure, object of natural growth, or use of land which is inconsistent with the provisions of this Ordinance or an amendment thereto.

(m) OBSTRUCTION – Any structure, growth, or other object, including a mobile object, which exceeds a limiting height set forth in Section 5 of this Ordinance.

(n) PERSON – An individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity; includes a trustee, a receiver, an assignee, or a similar representative of any of them.

(o) PRIMARY SURFACE – a surface longitudinally centered on the runway. When the runway has a specially prepared hard surface, the primary surface extends 200 feet beyond each end of that runway, or when the runway has no specially prepared hard surface or planned hard surface, the primary surface ends at each end of that runway. The width of the primary surface is set forth in Section 4 of this Ordinance. The elevation at any point on the primary surface is the same as the elevation of the nearest point on the runway centerline.

(p) RUSSELLVILLE MUNICIPAL AIRPORT – A complex of runways, hangars and buildings for the takeoff, landing, and maintenance of civil aircraft, with facilities for passengers located at 1759 Airport Rd, Russellville, AR, or approximately there to, organized and operating under A.C.A. §14-360-101 *et seq.* and A.C.A. §14-360-301 *et seq.*, and is a department of the City of Russellville, Arkansas, and an instrumentality thereof.

(q) RUNWAY - A defined area on an airport prepared for landing and takeoff of aircraft along its length.

(r) STRUCTURE – An object, including a mobile object, constructed or installed by man, including but without limitation, buildings, towers, cranes, smokestacks, earth formation, and overhead transmission lines.

(s) TRANSITIONAL SURFACES – These surfaces extend outward at ninety degree (90°) angles to the runway centerline and the runway centerline extended at a slope of seven (7) feet horizontally for each one (1) foot vertically from the sides of the primary and approach surfaces to where they intersect the horizontal and conical surfaces.

(t) TREE – Any object of natural growth.

(u) VISUAL RUNWAY – A runway intended solely for the operation of aircraft using visual approach procedures.

SECTION 4: AUTHORITY TO ENACT. This Ordinance is enacted under the authority granted to the City of Russellville by the State of Arkansas under A.C.A. §14-363-201 *et seq*.

SECTION 5: AIRPORT ZONES. In order to carry out the provisions of this Ordinance, there are hereby created and established certain zones which include all of the land lying beneath the approach surfaces, transitional surfaces, horizontal surface, and conical surface as they apply to the Russellville Airport. Such zones are shown on the Russellville Airport Zoning Map consisting of two (2) sheets of the same map with the second sheet is an enlargement of the first sheet which are attached to this Ordinance as Exhibit A and made a part hereof. An area located in more than one (1) of the following zones is considered to be only in the zone with the more restrictive height limitation. The various zones are hereby established and defined as follows:

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OB#1

(a) Utility Runway Visual Approach Zone – The inner edge of the approach zone coincides with the width of the primary surface and is 250 feet wide. The approach zone expands outward uniformly to a width of 1,250 feet at a horizontal distance of 10,000 feet from the primary surface. Its centerline is the continuation of the centerline of the runway.

(b) Transitional Zones – The transitional zones are the areas beneath the transitional surfaces.

(c) Horizontal Zone – The horizontal zone is established by swinging arcs of 10,000 feet radii from the center of each end of the primary surface of each runway and connecting the adjacent arcs by drawing lines tangent to those arcs. The horizontal zone does not include the approach and transitional zones.

(d) Conical Zone – The conical zone is established as the area that commences at the periphery of the horizontal zone and extends outwardly therefrom a horizontal distance of 4,000 feet.

SECTION 6: AIRPORT ZONE HEIGHT LIMITATIONS. Except as otherwise provided in this Ordinance, no structure shall be erected, altered, or maintained, and no tree shall be allowed to grow in any zone created by this Ordinance to a height in excess of the applicable height limit herein established for such zone. Such applicable height limitations are hereby established for each of the zones in question as follows:

(a) Utility Runway Visual Approach Zone – Slopes thirty-four (34) feet horizontal for each one (1) foot vertical beginning at each end of and at the same elevation as the primary surface and extending a horizontal distance of 5,000 feet along the extended runway centerline, on both runway ends.

(b) Transitional Zone – Slop seven (7) feet horizontal for each one (1) foot vertical beginning at the sides of and at the same elevations as the primary surface and the approach surfaces and extending to an elevation of 557 feet above mean sea level, which is a height of 150 feet above the established airport elevation.

(c) Horizontal Zone – Established at 150 feet above the established airport elevation or at an elevation of 557 feet above mean sea level.

(d) Conical Zone – Slopes thirty-four (34) feet horizontal for each one (1) foot vertical beginning at the outer perimeter of the horizontal zone and extending to an elevation of 757 feet above mean sea level which is a height of 350 feet above the established airport elevation.

(e) Excepted Height Limitations – Nothing in this Ordinance shall be construed as prohibiting the construction or maintenance of any structure, or growth of any tree to a height up to 50 feet above the surface of the land.

SECTION 7: USE RESTRICTIONS. Notwithstanding any other provisions of this Ordinance, no use may be made of land or water within any zone established by this Ordinance in such a manner as to create electrical interference with navigational signals or radio communication between the airport and aircraft, make it difficult for pilots to distinguish between airport lights and others, result in glare in the eyes of pilots using the airport, impair visibility in the vicinity of the airport, create bird strike hazards, or otherwise in any way endanger or interfere with the landing, takeoff, or maneuvering of aircraft intending to use the airport.

SECTION 8: NONCONFORMING USES

(a) Regulations Not Retroactive – The regulations prescribed by this Ordinance shall not be construed to require the removal, lowering, or other change or alteration of any structure or tree not conforming to the regulations as of the effective date of this Ordinance, or otherwise interfere with the continuance of a nonconforming use. Nothing contained herein shall require any change in the construction, alteration, or intended use of any structure, the construction or alteration of which was begun prior to the effective date of this Ordinance, and is diligently prosecuted.

(b) Marking and Lighting – Notwithstanding the preceding provision of this Section, the owner of any existing nonconforming structure or tree is hereby required to permit the installation, operation, and maintenance thereon of such markers and lights as shall be deemed necessary by the Russellville Municipal Airport, to indicate to the operators of aircraft in the vicinity of the airport the presence of such airport obstruction. Such markers and lights shall installed, operated, and maintained at the expenses of the Russellville Municipal Airport.

SECTION 9: PERMITS

(a) Future Uses – Except as specifically provided in paragraphs (a) and (b) hereunder, no material change shall be made in the use of land, no structure shall be erected or otherwise established, and no tree shall be planted in any zone hereby created unless a permit therefor shall have been applied for and granted. Each application for a permit shall indicate the purpose for which the permit is desired, with sufficient particularity to permit it to be determined whether the resulting use, structure, or tree would conform to the regulations herein prescribed. Each permit shall have contained with it an OE/AAA determination from the FAA. If such determination is in the affirmative, the permit shall be granted. ~~No permit for a use inconsistent with the provisions of this Ordinance shall be granted unless a variance has been approved in accordance with Section 8(d).~~

(i) In the area lying within the limits of the horizontal zone and conical zone, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when, because of terrain, land

contour, or topographic features, such tree or structure would extend above the height limits prescribed for such zones.

(ii) In areas lying within the limits of the approach zones, but at a horizontal distance of not less than 4,200 feet from each end of the runway, no permit shall be required for any tree or structure less than seventy-five feet of vertical height above the ground, except when such tree or structure would extend above the height prescribed for such approach zones.

Nothing contained in any of the foregoing exceptions shall be construed as permitting or intending to permit any construction, or alteration of any structure, or growth of any tree in excess of any of the height limits established by this Ordinance except as set forth in Section 5(e).

(b) Existing Uses – No permit shall be granted that would allow the establishment or creation of an obstruction or permit a nonconforming use, structure, or tree to become a greater hazard to air navigation than it was on the effective date of this Ordinance or any amendments thereto or than it is when the application for a permit is made. Except as indicated, all applications for such a permit shall be granted.

(c) Nonconforming Uses Abandoned or Destroyed – Whenever the Russellville Municipal Airport determines that a nonconforming tree or structure has been abandoned or more than eighty percent (80%) torn down, physically deteriorated, or decayed, no permit shall be granted that would allow such structure or tree to exceed the applicable height limit or otherwise deviate from the zoning regulations.

~~(d) Variances – Any person desiring to erect or increase the height of any structure, or permit the growth of any tree, or use property, not in accordance with the regulations prescribed in this Ordinance, may apply to the Russellville Municipal Airport for a variance from such regulations. The application for variance shall be accompanied by an OE/AAA determination from the Federal Aviation Administration as to the effect of the proposal on the operation of air navigation facilities and the safe, efficient use of navigable airspace. Such variances shall be allowed where it is duly found that a literal application or enforcement of the regulations will result in unnecessary hardship and, relief granted, will not be contrary to the public interest, will not create a hazard to air navigation, will do substantial justice, and will be in accordance with the spirit of this Ordinance.~~

(e) Obstruction Marking And Lighting – Any permit ~~or variance~~ granted may, if such action is deemed advisable to effectuate the purpose of this ordinance and be reasonable in the circumstances, be so conditioned as to require the owner of the structure or tree in question to install, operate and maintain, at the owner's expense, such markings and lights as may be necessary. If deemed proper by City of Russellville, this condition may be modified to require the owner to permit the

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OB#1

Russellville Municipal Airport, at its own expense, to install, operate, and maintain the necessary markings and lights.

SECTION 10: APPEALS. Any person may appeal a denial from the Russellville Municipal Airport of their permit application by submitting to the FAA under the OE/AAA for a re-evaluation. If the FAA approves the Applicant's submission, then the Russellville Municipal Airport shall grant the Applicant a permit.

SECTION 11: ENFORCEMENT. It shall be the duty of the City of Russellville, Arkansas, thru its department, the Russellville Municipal Airport to administer and enforce the regulations prescribed herein. Applications for permits ~~and variances~~ shall be made to the Airport Department upon a form published for that purpose. Applications required by this Ordinance to be submitted shall be promptly considered and granted or denied.

~~**SECTION 10: BOARD OF ADJUSTMENT.** (a) The Board of Adjustment established by the City Zoning Code currently in effect shall be empowered by the City of Russellville under the authority of this Ordinance to have and exercise the following powers in addition to those already bestowed to it by the Zoning Code and other ordinances of the City:~~

~~(i) To hear and decide appeals from any order, requirement, decision or determination made by the Airport Department in the enforcement of this Ordinance;~~

~~(ii) To hear and decide special exceptions to the terms of this Ordinance upon which such Board of Adjustment under such regulations may be required to pass;~~

~~(iii)To hear and decide specific variances.~~

~~(b) All notice, time and application requirements for filing an appeal, special exception or variance with the Board of Adjustment over the provisions of this Ordinance shall be the same requirements as in the current Zoning Code.~~

~~(c) The Board of Adjustment shall make written findings of facts upon which it acted and its legal conclusions when reversing, affirming, or modifying any order, requirement, decision or determination which comes before it under the provisions of this Ordinance.~~

~~(d) A majority of the whole number of the Board of Adjustment is needed to approve any vote taken by the Board of Adjustment.~~

~~**SECTION 11: APPEALS.**~~

~~(a) Any person aggrieved or any taxpayer affected by any decision of the Airport Department made in the administration of this Ordinance, may appeal to the Board of Adjustment~~

~~(b) Any party may appear at the Board of Adjustment meeting in person, by agent or by attorney.~~

~~(c) The Airport Department shall file with the Board of Adjustment any documents constituting the record upon action the action appealed from was taken. The party appealing the decision may also file with the Board of Adjustment any documents they believe are pertinent to the appeal of the action taken.~~

(d) ~~An appeal filed with the Board of Adjustment shall stay all proceedings in furtherance of the action appealed from unless the Airport Department, certifies to the Board of Adjustment, after notice of appeal has been filed with it, that by reason of the facts stated in the certificate a stay would in the opinion of the Airport Department cause imminent peril to life or property. In such case, proceedings shall not be stayed except by order of the Board of Adjustment or notice to the Airport Department and on due cause shown.~~

SECTION 12: JUDICIAL REVIEW. Any person aggrieved, or any taxpayer affected, by any decision of the Board of Adjustment may appeal to the Circuit Court of the appropriate jurisdiction.

SECTION 13: LIABILITY FOR DAMAGES. The degree of protection provided by this Code relative to aircraft operation, aircraft overflights, and compatible land uses is considered reasonable for regulatory purposes and is based on Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5300-13, Airport Design Standards, Federal Aviation regulations (FAR) Part 77, Objects Affecting Navigable Airspace; FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports; FAA Advisory Circular 150/5190-4A, A Model Zoning Ordinance to Limit Height of Objects Around Airports; FAA Advisory Circular 150/5020-1 Noise Control and Compatibility Planning for Airports; and FAA Land Use Compatibility and Airports, A Guide for Effective Land Use Planning. Therefore, this Ordinance does not apply that structures or land uses within the vicinity of the Russellville Municipal Airport will be totally free from aircraft noise impacts, aircraft operations, and aircraft overflights. Nor does this Ordinance create liability on the part of, or a cause of action against, the Russellville Municipal Airport, City of Russellville, Arkansas, or any officer or employee thereof, for incidents that may result from reliance on this Ordinance. This Ordinance shall not be construed to hold City of Russellville or its authorized representatives responsible for any damage to persons or property by reason of the inspection or re-inspection authorized in this Ordinance.

SECTION 14. PENALTIES. Violating any provisions of this Ordinance shall incur the following penalties:

(a) Any person, business, or corporation who shall violate any of the provisions of this Ordinance or fail to comply thereafter with any of the requirements thereof, shall be guilty of a misdemeanor and shall be liable to a fine of not more than $100.00 up to, but not exceeding:

(i) One thousand dollars ($1,000.00) for the first offense;
(ii) Two thousand dollars ($2,000.00) for the second offense;
(iii) Four thousand dollars ($4,000.00) for each subsequent offense after the second offense;
(iv) Plus court costs and applicable fees.

(b) Each day such violation is permitted to exist shall constitute a separate offense.

(c) If it is found that any violation of this Ordinance is found to be continuous in respect to time, the fine or penalty for allowing the continuous thereof, in violation of this Ordinance, shall not exceed five hundred dollars ($500.00) for each day that it is unlawfully continued, plus court costs and applicable fees.

SECTION 15: CONFLICTING REGULATIONS. Where there exists a conflict between any of the regulations or limitations prescribed in this Ordinance and any other regulations applicable to the same area, whether the conflict be with respect to the height of structures or trees, and the use of land, or any other matter, the more stringent limitation or requirement shall govern and prevail.

SECTION 16: ATTACHMENTS. Appended to this Ordinance under the heading "Exhibit B" are forms which set out the additions requirements and regulations for the Russellville Municipal Airport. They are:

Airport Design Dimensional Criteria and 49 CFR Part 77 Surfaces
Table C8 - Runway End Sitting Criteria, In Feet
Figure A5 - Generalized Existing Zoning
Figure C3 - Existing Runway Protection Zones
Figure C4 - Runway 7 Threshold Sitting Surface Analysis
Figure C5 - Runway 25 Threshold Sitting Surface Analysis
Figure C6 - Runway 7 Departure Surface Analysis
Figure C7 - Expanded Runway 7 Departure Surface Analysis
Figure C8 - Runway 25 Departure Surface Analysis

They are all incorporated in this Ordinance by reference and have the same legal authority as any other provision contained in this Ordinance.

SECTION 17: REFERENCE IN ZONING CODE. The City Planner or their designee is authorized to amend the current Zoning Code adopted by Ordinance No. 1966, Subsection 1.6 titled "Runway Protection Zone" to delete the Ordinance Nos. 1243, 1264 and 1272 and replace them with the Ordinance No. assigned to this Ordinance.

SECTION 18: SEVERABILITY. If any of the provisions of this Ordinance or the application thereof to any person or circumstances are held invalid, such invalidity shall not affect other provisions or applications of the Ordinance which can be given effect without the

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OB#1

invalid provision or application, and to this end, the provisions of this Ordinance are declared to be severable.

SECTION 19: REPEALER. Ordinance Nos. 1243, 1264, 1272 and any other ordinance in conflict with this Ordinance is hereby repealed.

ORDAINED, this 17th day of October, 2019.

OFFICE OF CITY CLERK
RUSSELLVILLE, ARKANSAS

RICHARD HARRIS, MAYOR

ATTEST:

GINA SKELTON, CITY CLERK-TREASURER

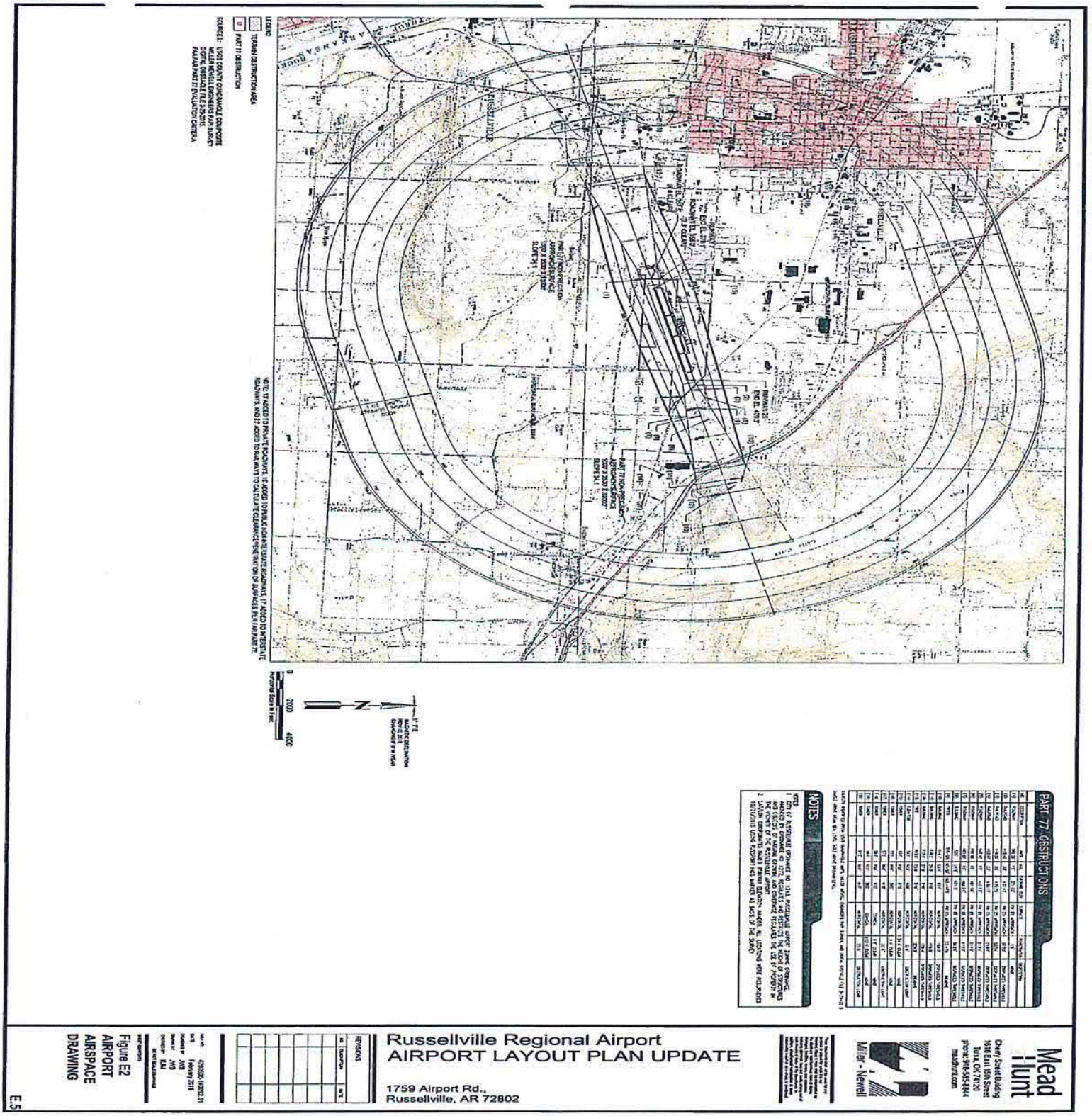
I, Gina Skelton, City Clerk-Treasurer of the City of Russellville, Arkansas, hereby certify that the above and foregoing is a true and correct copy of Ordinance No. **2336** passed by the City Council of the City of Russellville, Pope County, Arkansas, on the 17th day of October, 2019.

APPROVED AS TO LEGAL FORM:

WILLIAM F. SMITH III, CITY ATTORNEY

Prepared by:
William F. Smith III
City Attorney
203 South Commerce Street
Russellville, AR 72801
Sponsor: Airport Dept.
OB#1

EXHIBIT A



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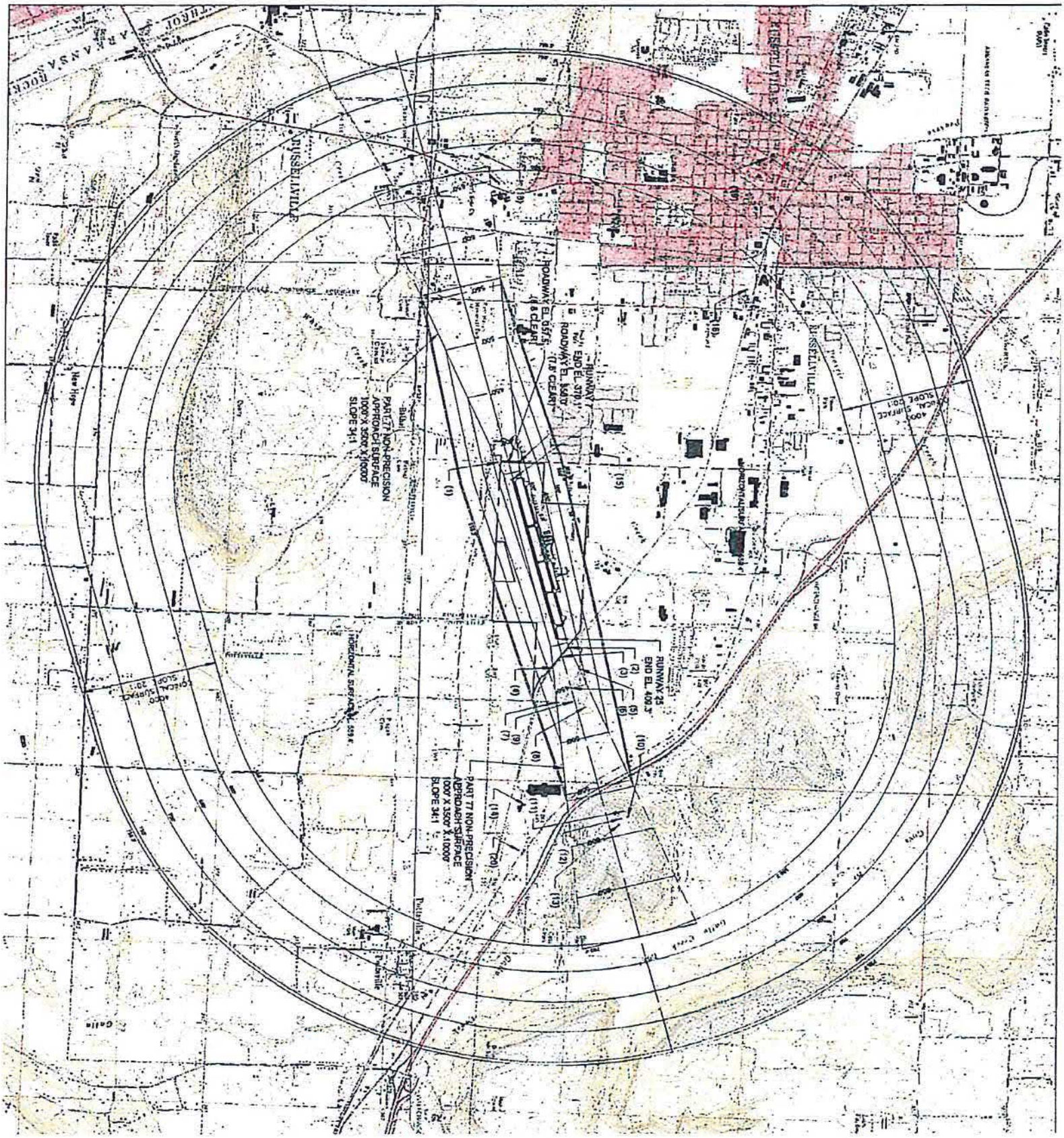

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OB#1

EXHIBIT B

FAA Central Region

Airport Design Dimensional Criteria and 49 CFR Part 77 Surfaces

Revision Date: 05/30/13

Dimensional Criteria from Advisory Circular (AC) 150/5300-13A

		Visual, Not Lower than 1-mile, and Not Lower than 3/4-Mile Visibility											Lower Than 3/4-Mile Visibility										
Airplane Design Group (ADG)		A & B					C, D & E						A & B					C, D & E					
Aircraft Approach Category (AAC)		I(small)	I	II	III	IV	I	II	III	IV	V	VI	I(small)	I	II	III	IV	I	II	III	IV	V	VI
Runway:	DIM[1]																						
Width	B	60	60	75	100	150	100	100	150[13]	150	150	200	75	100	100	100	150	100	100	150[13]	150	150	200
Shoulder Width		10	10	10	20	25	10	10	25[13]	25	35	40	10	10	10	20	25	10	10	25[13]	25	35	40
Blast Pad Width		80	80	95	140	200	120	120	200[13]	200	220	280	95	120	120	140	200	120	120	200[13]	200	220	280
Blast Pad Length		60	100	150	200	200	100	150	200	200	400	400	60	100	150	200	200	100	150	200	200	400	400
Crosswind Component (knots)		10.5	10.5	13	16	20	16	16	16	20	20	20	10.5	10.5	13	16	20	16	16	16	20	20	20
Safety Area (RSA) Width	C	120	120	150	300	500	500[14]	500[14]	500	500	500	500	300	300	300	400	500	500[14]	500[14]	500	500	500	500
Safety Area Length Beyond RW End[10,11]	R,P	240	240	300	600	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	600	600	600	800[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]
Object Free Area (ROFA) Width	Q	250	400	500	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800
Object Free Area Length Beyond RW End	R,P	240	240	300	600	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	600	600	600	800[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]	1000[12]
Precision Obstacle Free Zone (200'x800')		-	-	-	-	-	-	-	-	-	-	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Crops from RW End[17]		300	300	400	600	1000	1000	1000	1000	1000	1000	1000	600	600	600	800	1000	1000	1000	1000	1000	1000	1000
Runway Centerline to:																							
Holding Position Marking[9]		125[15]	200	200	200	250	250	250	250[7]	250[8]	250[8]	280[8]	175[15]	250	250	250	250	250	250	250[7]	250[8]	280[8]	280[8]
Parallel Taxiway/Taxilane Centerline[2,4]	D	150	225	240	300	400	300	300	400	400	400[3]	500	200	275	300	350	400	400	400	400	400	-[3,5]	500[6]
Aircraft Parking Area	G	125	200	250	400	500	400	400	500	500	500	500	400	400	400	400	500	500	500	500	500	500	500
Crops[17]		125[16]	200	250	400	400	530	530	530	530	530	530	400	400	400	400	400	575	575	575	575	575	575

Taxiway and Taxilane		Airplane Design Group (ADG)					
		I	II	III	IV	V	VI
Taxiway Centerline to:							
Parallel Taxiway/Taxilane Centerline	J	70	105	152	215	267	324
Fixed or Movable Object	K	44.5	65.5	93	129.5	160	193
Crops[17]		45	66	93	130	160	193
Taxilane Centerline to:							
Taxilane Centerline		64	97	140	198	245	298
Fixed or Movable Object		39.5	57.5	81	112.5	138	167
Safety Area Width	E	49	79	118	171	214	262
Object Free Area Width		89	131	186	259	320	386
Wingtip Clearance		20	26	34	44	53	62
Taxilane:							
Taxilane Object Free Area Width		79	115	162	225	276	334
Wingtip Clearance		15	18	23	27	31	36

Taxiway:	Taxiway Design Group (TDG)						
	1	2	3	4	5	6	7
Width	25	35	50	50[7]	75	75	82
Edge Safety Margin	5	7.5	10	10[7]	15	15	15
Shoulder Width	10	10	20	20	25	35	40
Parallel Taxiway/Taxilane Centerline	70	70	160	160	240	350	350

Fillet Dimensions: See Tables 4-3, 4-4, 4-5, 4-6, 4-7, and 4-8

Runway Protection Zone (RPZ) Dimensions

(This table correlates RPZ dimensions with the Part 77 imaginary approach surface dimensions table located in upper right.)

Part 77 Imaginary Surfaces (See Table in upper right)	Approach by Approach Category		Length	Inner Width	Outer Width
	Visual and not lower than 1 mile (>3/4 mile):				
A(V), A(NP)		A & B small aircraft exclusively	1000	250	450
B(V), C(NP)		A & B	1000	500	700
		C & D	1700	500	1010
D(NP)	Not lower than 3/4 mile (3/4 mile) - All aircraft		1700	1000	1510
PiR	Lower than 3/4 mile (1/2 mile) - All aircraft		2500	1000	1750

Departure by Approach Category		Length	Inner Width	Outer Width
Visual and not lower than 1 mile (>3/4 mile):				
	A & B small aircraft exclusively	1000	250	450
	A & B	1000	500	700
	C & D	1700	500	1010
Not lower than 3/4 mile (3/4 mile) - All aircraft		1700	500	1010
Lower than 3/4 mile (1/2 mile) - All aircraft		1700	500	1010

Approach Category (Vref)	
A	< 91 knots
B	91-<121 knots
C	121-<141 knots
D	141-<166 knots
E	≥ 166 knots

Design Group (Wingspan)	
I	< 49'
II	49'-<79'
III	79'-<118'
IV	118'-<171'
V	171'-<214'
VI	214'-<262'

Visibility Category (RVR)	
4000	≥ 3/4 but <1-mile
2400	≥ 1/2 but <3/4-mile
1600	≥ 1/4 but <1/2-mile
1200	< 1/4-mile

Footnotes:

1. Letters correspond to the dimensions in Figure 3-26 AC 150/5300-13A.
2. The runway to taxiway/taxilane centerline separation standards are for sea level. At higher elevations, an increase to these separation distances may be required to keep taxiing and holding aircraft clear of the inner-transitional Object Free Zone (refer to paragraph 308.c). Using this standard to justify a decrease in runway to taxiway/taxilane separation is not permitted.
3. For ADG-V, the standard runway centerline to parallel taxiway centerline separation distance is 400 feet for airports at or below an elevation of 1,345 feet; 450 feet for airports between elevations of 1,345 feet and 6,560 feet; and 500 feet for airports above an elevation of 6,560 feet.
4. For aircraft approach categories A/B, approaches with visibility less than ½-statute miles, runway centerline to taxiway/taxilane centerline separation increases to 400 feet.
5. For ADG-V, approaches with visibility less than ½-statute mile, the separation distance increases to 500 feet. See footnote 7.
6. For ADG-VI, approaches with visibility less than 3/4 statute mile, the separation distance increases to 500 feet plus elevation adjustment. For approaches with visibility less than ½-statute mile, the separation distance increases to 550 feet. See footnote 7.
7. For ADG-III, this distance is increased 1 foot for each 100 feet above 5,100 feet above sea level.
8. For ADG-IV, V, and VI, this distance is increased 1 foot for each 100 feet above sea level.
9. For all ADGs that are aircraft approach categories D and E, this distance is increased 1 foot for each 100 feet
10. The Runway Safety Area (RSA) length beyond the runway end begins at the runway end when a stopway is not provided. When a stopway is provided, the length begins at the stopway end.
11. The RSA length beyond the runway end may be reduced to that required to install an Engineered Materials Arresting System (EMAS) (the designed set-back of the EMAS included) designed to stop the design aircraft exiting the runway end at 70 knots.
12. RSA Length prior to approach threshold is 600' if that runway end is equipped with electronic or visual vertical guidance. If visual guidance is not provided, use the value for "length beyond departure end."
13. For ADG-III airplanes with maximum certificated takeoff weight of 150,000 lbs or less and approach visibility minimums of not less than 3/4 mile, the standard runway width is 100 feet, the shoulder width is 20 feet, and the runway blast pad width is 140 feet.
14. For Runway Design Code (RDC) C-I and C-II, a RSA width of 400 feet is permissible.
15. The holding position dimension standards pertain to facilities for small airplanes exclusively, including airplane design groups I and II.
16. This dimension increased where necessary to accommodate visual navaids.
17. Minimum distance between airport features and ANY on-airport crops. The Runway Visual Zone (RVZ) must be clear of ANY crops. See Appendix 17 of Design AC for separation distances between edge of apron and crops.

Note: This document is provided for informational purposes only. This document is not creating standards but merely conveying information from other directives. In the event of a discrepancy with official FAA policy, current FAA policy supersedes the information provided herein.

If you have questions regarding this guide or require assistance in accessing the information, please call (816)329-2600.

Part 77 Imaginary Surfaces Dimensions from Order 7400.2G

Item	Dimensional Standards (Feet)					
	Visual (V) Runway		Non-Precision (NP) Instrument Runway			Precision Instrument Runway (PIR)
				B		
	A	B	A	C	D	
Width of primary surface and approach surface width at inner end	250	500	500	500	1,000	1,000
Radius of horizontal surface	5,000	5,000	5,000	10,000	10,000	10,000
Approach surface width at end	1,250	1,500	2,000	3,500	4,000	16,000
Approach surface length	5,000	5,000	5,000	10,000	10,000	inner 10,000 additional 40,000
Approach slope	20:1	20:1	20:1	34:1	34:1	50:1/40:1

NOTE: The A, B, C, D reference this table only and do not reference aircraft Approach Category as used in the tables to the left. Use the descriptions below for the Part 77 imaginary approach surface.

A - Utility runways
B - Runways larger than utility
C - Visibility minimums greater than 3/4 mile
D - Visibility minimums as low as 3/4 mile

Approach / Departure Standards Table
(Threshold Siting Surfaces)

	Runway Type	DIMENSIONAL STANDARDS* Feet					Slope /Obstacle Clearance Surface (OCS)
		A	B	C	D	E	
1	Approach end of runways expected to serve small airplanes with approach speeds less than 50 knots. (Visual runways only, day/night)	0	120	300	500	2,500	15:1
2	Approach end of runways expected to serve small airplanes with approach speeds of 50 knots or more. (Visual runways only, day/night)	0	250	700	2,250	2,750	20:1
3	Approach end of runways expected to serve large airplanes (Visual day/night); or instrument minimums ≥ 1 statute mile (day only).	0	400	1000	1,500	8,500	20:1
4	Approach end of runways expected to support instrument night operations, serving approach Category A and B aircraft only. [1]	200	400	3,800	10,000[2]	0	20:1
5	Approach end of runways expected to support instrument night operations serving greater than approach Category B aircraft. [1]	200	800	3,800	10,000[2]	0	20:1
6	Approach end of runways expected to accommodate instrument approaches having visibility minimums ≥ 3/4 but <1 statute mile, day or night.	200	800	3,800	10,000[2]	0	20:1
7	Approach end of runways expected to accommodate instrument approaches having visibility minimums < 3/4 statute mile or precision approach, day or night.	200	800	3,800	10,000[2]	0	34:1
8	Approach end of runways expected to accommodate approaches with vertical guidance (Glide Path Qualification Surface [GQS]).	0	Runway width + 200	1520	10,000[2]	0	30:1
9	Departure runway ends for all instrument operations.	0[4]	See Figure 3-4.				40:1

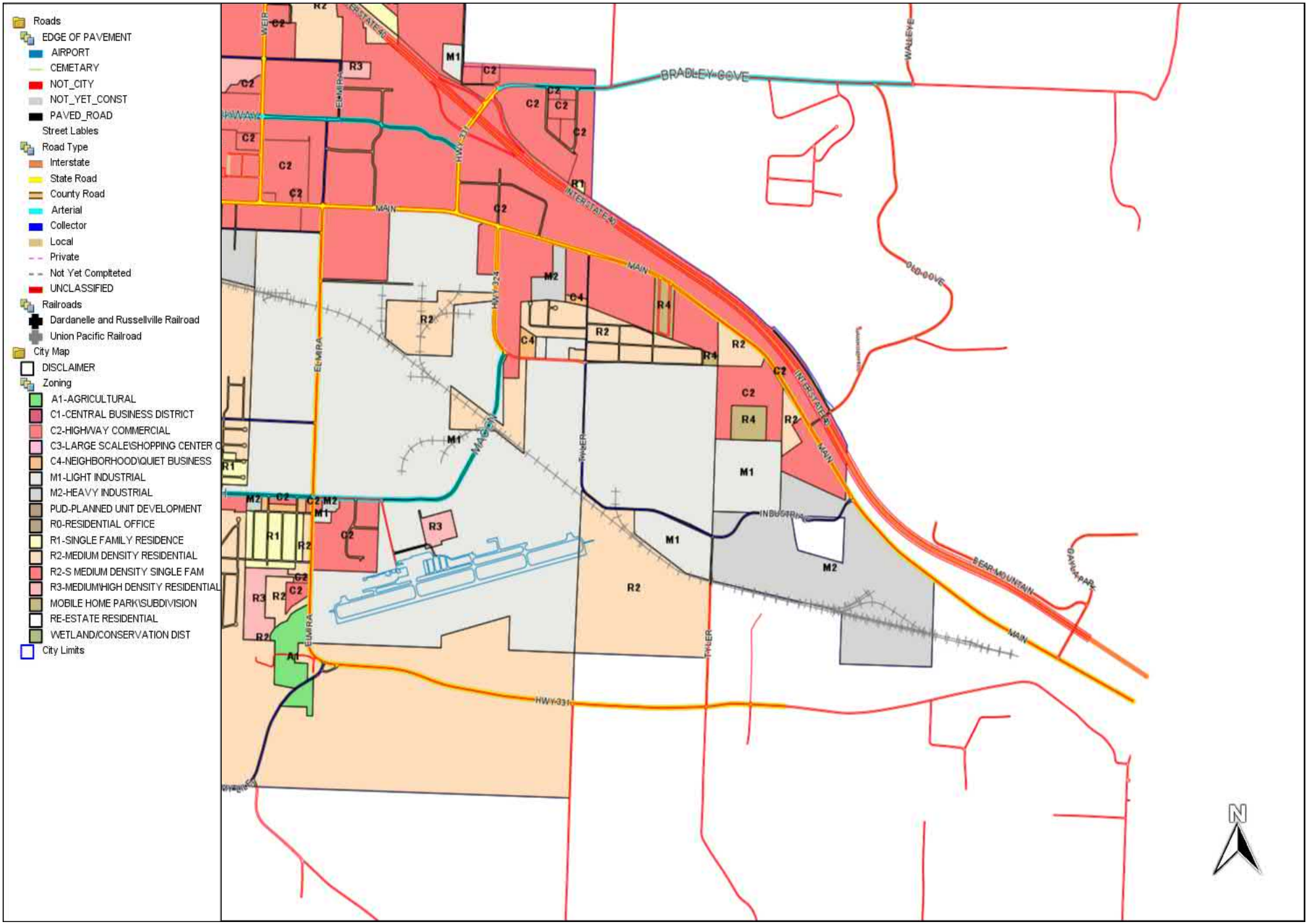
* The letters are keyed to those shown in Figure 3-2.

Notes:

1. Marking and lighting of obstacle penetrations to this surface or the use of a Visual Guidance Slope Indicator (VGSI), as defined by Order 8260.3, may avoid displacing the threshold.
2. 10,000 feet (3048 m) is a nominal value for planning purposes. The actual length of these areas is dependent upon the visual descent point position for 20:1 and 34:1, and Decision Altitude (DA) point for the 30:1.
3. When objects exceed the height of the Glide Path Qualification Surface (GQS), an Approach with Vertical Guidance (APV) is not authorized. Refer to Table 3-4 and its footnote 3 for further information on GQS.
4. Dimension A is measured relative to Takeoff Distance Available (TODA) (to include clearway).
5. Surface dimensions / Obstacle Clearance Surface (OCS) slope represent a nominal approach with 3 degree Glide Path Angle (GPA), 50 feet (15 m) Threshold Crossing Height (TCH), < 500 feet (152 m) Height Above Threshold (HATh). For specific cases, refer to Order 8260.3. The OCS slope (30:1) supports a nominal approach of 3 degrees (also known as the GPA). This assumes a TCH of 50 feet (15 m). Three degrees is commonly used for Instrument Landing System (ILS) and VGSI aiming angles. This approximates a 30:1 approach slope that is between the 34:1 and the 20:1 approach surfaces of Part 77. Surfaces cleared to 34:1 should accommodate a 30:1 approach without any obstacle clearance problems.
6. For runways with vertically guided approaches the criteria in row 8 is in addition to the basic criteria established within the table, to ensure the protection of the GQS.
7. For planning purposes, determine a tentative DA based on a 3 degree GPA and a 50-foot (15 m) TCH.

Zoning

East End Industrial Park



Zoning Code

UPDATES:

Ordinance 1984 August 16, 2007 (Vending Machine – Ice)
Amendments to the Zoning Code -Ordinances Incorporated on October 25, 2012
Ordinance 2009 adopted February 21, 2008
Ordinance 2021 adopted May 15, 2008 (Swimming Pools) Internal Inconsistencies Pertaining to Maximum Allowable Densities in Residential Zoning Districts)
Ordinance 2109 adopted June 23, 2011 (Funeral Homes, Mortuary, or Undertaking Establishments)
Ordinance 2126 adopted June 14, 2012 (Accessory Buildings, Vehicles on Premises, Sidewalks, Dumping or Storage of Fill, Off Street Parking or Loading Requirements)
Ordinance 2129 adopted August 16, 2012 (General Changes)
Ordinance 2170 adopted March 20, 2014 (Recreational Vehicle Parks)
Ordinance 2179 adopted June 26, 2014 (Permitted Heights of Fences, Walls, Hedges in a Residential Zones)
Ordinance 2182 adopted October 16, 2014 (Permitted Uses - C-1 and C-1B)
Ordinance 2185 adopted November 15, 2014 (Permitted Uses - Auto Wrecker Service)
Ordinance 2211 adopted October 6, 2015 (Permitted Uses-Medical, Dental and Outpatient Surgical Clinics)
Ordinance 2238 adopted April 21, 2016 (Sidewalks)
Ordinance 2258 adopted October 20, 2016 (Committees, PUD Regulations, Special Exceptions)
Ordinance 2276 adopted June 13, 2017 (Area Requirements, Table of Permitted Uses & C-1B) Storage Bldg/Container Sales or Rental
Ordinance 2279 adopted June 13, 2017 (Article X111 Table of Permitted Uses - Medical Marijuana Dispensary)

TABLE OF CONTENTS

ARTICLE I: CITATION, PURPOSE, NATURE, AND APPLICATION

ARTICLE II: SPECIFIC DISTRICT REGULATIONS

ARTICLE III: ADDITIONAL DISTRICT PROVISIONS

ARTICLE IV: OFF-STREET PARKING AND LOADING REQUIREMENTS

ARTICLE V: SIGNS, BILLBOARDS, AND OTHER ADVERTISING STRUCTURES

ARTICLE VI: SPECIAL PERMIT USES

ARTICLE VII: NON-CONFORMING STRUCTURES AND USES OF LAND AND STRUCTURES

ARTICLE VIII: ADMINISTRATION AND ENFORCEMENT

ARTICLE IX: BOARD OF ADJUSTMENT

ARTICLE X: DEFINITIONS

ARTICLE XI: VALIDITY AND REPEAL

ARTICLE XII AREA REQUIREMENT

ARTICLE XIII: TABLE OF PERMITTED USES

ARTICLE 1. CITATION, PURPOSE, NATURE AND APPLICATION OF ZONING CODE

1.1 Citation This Code, in pursuance of the Authority cited in Arkansas Code Annot. §14-56-401 through §14-56-426, shall be known as the Zoning Code and may be cited as such.

1.2 Purpose The Zoning Regulations set forth herein are enacted to carry out or protect various elements of the Comprehensive Development Plan for the City of Russellville and to promote, in accordance with present and future needs, the safety, order, convenience, prosperity, and general welfare of the citizens of Russellville, Arkansas, and to provide for efficiency and economy in the process of development for the appropriate and best use of land, for the use and occupancy of buildings, for healthful and convenient distribution of population, for good civic design and arrangement, and for adequate public utilities and facilities.

1.3 Nature and Application The application of this code should conform to the following guidelines.

1.3.1 Zoning District For the purposes hereinbefore stated, the City has been divided into zoned districts in which the regulations contained herein will govern lot coverage; the height, area, bulk, location, and size of buildings; open space and the uses of land, buildings, and structures. In interpreting and applying the provisions of this Zoning Code, they shall be held to be the minimum requirements for the promotion of public health, safety, comfort, convenience, and general welfare.

1.3.2 Construction Except as hereinafter otherwise provided, no land shall be used and no building, structure, or improvement shall be made, erected, constructed, moved, altered, enlarged, or rebuilt which is designed, arranged, or intended to be used or maintained for any purpose or in any manner except in accordance with the requirements established in the district in which such land, building, structure, or improvement is located, and in accordance with the provision of the articles contained herein relating to any or all districts.

1.3.3 Size Regulation No proposed plat of any new subdivision of land shall hereafter be considered for approval by the City Planning Commission unless the lots within such plat equal or exceed the minimum size and area regulations specified in the applicable land use zoning district of this Code.

1.4 <u>Establishment of Zoning Districts</u> For the purpose of this Zoning Code, the City is hereby divided into land use zoning districts, as follows:

R-E	Estate Residential
R-O	Residential Office
R-1	Single-Family Residential
R-2	Medium Density Residential
R-2S	Medium Density Single Family
R-3	Medium/High Density Residential
R-4	Mobile Home Park or Subdivision
C-1	Central Business District
C-1B	Central Business District Buffer
C-2	Highway Commercial
C-3	Large Scale and Shopping Center Commercial
C-4	Neighborhood and Quiet Business
M-1	Light Industrial District
M-2	Heavy Industrial District
A - 1	Agricultural District
PUD	Planned Unit Development
CON	Conservation District

1.5 <u>Official Zoning Map</u> The location and boundaries of the land use zoning districts established by this Code are bounded and defined as shown on the map designated as "Official Zoning Map" and maintained in the Public Works Office. The map, together with the legend, words, figures, symbols, dimensions, and explanatory material thereon, is declared to be a part of this Zoning Code and may be referred to variously as the Zoning District Map or the Official Zoning Map. The Official Zoning Map shall be available for inspection and examination by the general public at all reasonable times as any other public record.

1.6 <u>Runway Protection Zone</u> Zoning control for Russellville City Ordinances 1243, 1264, 1272 and applicable State and Federal laws supplement the regulation of lands in the Runway Protection Zone of the Russellville Airport.

2) Lot drawing with dimensions.
3) Location and dimension of all buildings.
4) Location of all drives and parking, including handicapped parking.
5) Sidewalks, including ramps for handicapped access.
6) Drainage, existing and proposed. Drainage improvements requiring the sizing of pipes, the construction of drainage structures, or the handling of water that cannot be disposed of overland must be designed by a Professional Engineer registered in the State of Arkansas.

2.12.4 Area Regulations Area regulations are shown on Article XII- Area Regulations. Moreover, residential uses in the C-4 District shall comply with the setback and area requirements of the R-3 District. Other uses of the R-3 District that are permitted in the C-4 District shall comply with the setback regulations of Article XII.

2.12.5 Parking Regulations Off-street parking shall be provided in accordance with the provisions of Article IV.

2.12.6 Sign Regulations Signs shall be permitted only in accordance with the provisions of Article V.

2.12.7 Lot Coverage The maximum lot coverage for all structures is 40%.

2.13 Light Industrial District (M-1) The regulations in effect for Light Industrial District (M-1) are as follows:

2.13.1 General Description This industrial district is intended primarily for the conduct of light manufacturing, assembling and fabrication, and for warehousing, wholesale, and service uses. This district is intended for those operations, which are primarily carried on within enclosed buildings having adequate land area for parking and landscaping and with adequate safeguards for safety and aesthetics.

2.13.2 Uses Permitted Uses permitted in this district are included in Article XIII-Table of Permitted Uses. Where a "P" appears in the table under the specific zone, that use is permitted by right, subject to the provisions contained in the Land Subdivision Code pertaining to Large Scale Developments. Where "SP" appears in the table under the specific zone, that use is permitted only after the acquisition of a Special Use Permit as outlined in Article VI.

2.13.3 Site Plan Review Building permit requests for properties in this zone not otherwise eligible for Large Scale Review under the Russellville Land Subdivision and Development Code shall undergo Site Plan Review by the

staff of the Office of Community Development. Submittals for Site Plan Review will consist of a scaled plan in 5 copies. The plan does not have to be prepared by a registered professional, but shall be professionally drawn and depict the following as a minimum:

1) Vicinity Map.
2) Lot drawing with dimensions.
3) Location and dimension of all buildings.
4) Location of all drives and parking, including handicapped parking.
5) Sidewalks, including ramps for handicapped access.
6) Drainage, existing and proposed. Drainage improvements requiring the sizing of pipes, the construction of drainage structures, or the handling of water that cannot be disposed of overland must be designed by a Professional Engineer registered in the State of Arkansas.

2.13.4 Area Regulations Area regulations are shown on Article XII- Area Regulations.

2.13.5 Parking Regulations Off-street parking shall be provided in accordance with the provisions of Article IV.

2.13.6 Sign Regulations Signs shall be permitted only in accordance with the provisions of Article V.

2.14 <u>Heavy Industrial District (M-2)</u> The regulations in effect for Heavy Industrial District (M-2) are as follows:

2.14.1 General Description This industrial district is intended to provide for heavy industrial uses and other uses not otherwise provided for in the districts established by this Zoning Code.

2.14.2 Uses Permitted Uses permitted in this district are included in Article XIII-Table of Permitted Uses. Where a "P" appears in the table under the specific zone, that use is permitted by right, subject to the provisions contained in the Land Subdivision Code pertaining to Large Scale Developments. Where "SP" appears in the table under the specific zone, that use is permitted only after the acquisition of a Special Use Permit as outlined in Article VI.

2.14.3 Site Plan Review Building permit requests for properties in this zone not otherwise eligible for Large Scale Review under the Russellville Land Subdivision and Development Code shall undergo Site Plan Review by the staff of the Office of Community Development. Submittals for Site Plan Review will consist of a scaled plan in 5 copies. The plan does not have to be

prepared by a registered professional, but shall be professionally drawn and depict the following as a minimum:

1) Vicinity Map.
2) Lot drawing with dimensions.
3) Location and dimension of all buildings.
4) Location of all drives and parking, including handicapped parking.
5) Sidewalks, including ramps for handicapped access.
6) Drainage, existing and proposed. Drainage improvements requiring the sizing of pipes, the construction of drainage structures, or the handling of water that cannot be disposed of overland must be designed by a Professional Engineer registered in the State of Arkansas.

2.14.4 Area Regulations Area regulations are shown on Article XII- Area Regulations.

2.14.5 Parking Regulations Off-street parking shall be provided in accordance with the provisions of Article IV.

2.14.6 Sign Regulations Signs shall be permitted only in accordance with the provisions of Article V.

2.15 <u>Agricultural (A-1)</u> The regulations in effect for Agricultural (A-1) are as follows:

2.15.1 General Description This district is designed to protect the agricultural nature of land currently located inside the city limits, or that might be annexed into the City of Russellville in the future. These areas may undergo gradual transition to urban uses; however, this is expected to occur in a planned manner. In the interim, it is expected that uses in the agricultural zone will be restricted to those uses normally associated with agricultural enterprises and supporting residential and accessory uses.

2.15.2 Uses Permitted Uses permitted in this district are included in Article XIII-Table of Permitted Uses. Where a "P" appears in the table under the specific zone, that use is permitted by right, subject to the provisions contained in the Land Subdivision Code pertaining to Large Scale Developments. Where "SP" appears in the table under the specific zone, that use is permitted only after the acquisition of a Special Use Permit as outlined in Article VI.

Agricultural\farming enterprises of a commercial nature currently existing at the time that agricultural land is brought into the City, or rezoned to the A-1 zoning classification, will be permitted to continue. Agricultural/farming

RUSSELLVILLE, ARKANSAS

ARTICLE XIII. TABLE OF PERMITTED USES

June 2007

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Accessory Buildings	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	To Be Proposed by Applicant	P
Adult Daycare	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Advertising Displays, and Signs - Printing & Fabrication	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	p	p		NP
Air Conditioning and Heat Equipment - Sales and Service	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	p	p	NP	p	p		NP
Air Conditioning and Heat Equipment - Manufacture Of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Amusement, Commercial	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	SP	SP		NP
Animal Hospital, Kennel, Pound or Shelter	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	SP	SP	NP	P	P		NP
Animal and Husbandry, Dairying or Pasturage	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	NP	NP	NP	P	P		P
Animal and Poultry Husbandry, Dairying or Pasturage; not the Keeping /Feeding of Swine or Poultry	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	NP	NP	NP	NP	NP		NP
Apparel or Other Textile Products, Manufacturing Of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Appliance Repair	NP	NP	NP	NP	NP	NP	NP	P	SP	SP	P	P	P	P	P		NP
Art Gallery or Museum	NP	SP	NP	NP	NP	NP	NP	P	P	P	NP	P	NP	NP	NP		NP
Asphalt or Asphalt Products	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP		NP
Auction Room; Auctioneer	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	P	NP	NP	P		NP
Auditorium	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	NP	NP		NP

RUSSELLVILLE, ARKANSAS

ARTICLE XIII. TABLE OF PERMITTED USES

June 2007

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Auto Repair Garage	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	NP	P	P		NP
Auto Service Station	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	SP	SP	SP		NP
Automobile Accessory and Supply Store	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	SP	P	P		NP
Automobile Bus or Truck-Painting or Body Shop	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	P		NP
Automobile Car Wash	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	P	P	P	NP		NP
Automobile/Truck Sales, New and Used	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	NP	P	P		NP
Automobiles, Trucks or Trailers, Manufacturing Of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Automobile Wrecking, Salvage or Junkyard	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP		NP
Auto Wrecker Service	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	P		NP
Baked Goods, Candy, Bread, Dairy, and Ice Cream Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	SP	NP	P	P		NP
Bank, Drive-in	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	SP	SP		NP
Bank, Savings and Loan, or Similar Financial Institutions	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	SP	SP		NP
Barber or Beauty Shop	NP	P	NP	NP	NP	SP	NP	NP	P	P	P	P	P	NP	NP		NP
Batching or Mixing Plant, Asphaltic or Portland Cement, Concrete, Mortar or Plaster	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP		NP
Bed & Breakfast	NP	SP	NP	NP	NP	NP	NP	NP	SP	SP	P	P	P	NP	NP		NP

RUSSELLVILLE, ARKANSAS

ARTICLE XIII. TABLE OF PERMITTED USES

June 2007

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Beverages, Non-Alcoholic, Manufacturing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Billboards within 600 feet of interstate highway right-of-way	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	NP	SP	SP		NP
Boats/Marine Rental or Sales	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	P	NP	P	P		NP
Boats, Building	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Boats, Repair	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	NP	NP		NP
Book Binding	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	P	P		NP
Book or Stationary Store	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Bottling Works	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	P	P		NP
Bowling Alley	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP		NP
Building Materials and Supplies, including Sale of Lumber	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	P	P		NP
Buildings, Temporary until Construction Work Completed- Office only – no residence	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		NP
Buildings, Public, Semi-Public, Party or Club Rental	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	SP	NP	NP		NP
Bus Station	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	NP	NP	NP	NP		NP
Campground, R.V. Park	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	NP	NP	NP	NP		NP
Carnival, Circus or Similar Temporary Amusement Enterprise	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	P	P	NP	NP	NP		NP
Carpentry, Custom Woodworking or Furniture Making	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	SP	P	P		NP

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Catering Service	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Cement, Lime or Plaster-of-Paris, Manufacturing Of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP		NP
Cemetery/Mausoleum	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	NP		NP
Ceramic Products - Brick, Tile, Clay, Glass, Porcelain, Manufacture Of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	SP	P		NP
Chemicals, Compounding or Packaging	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	P		NP
Child Care Center	SP	SP	SP	SP	SP	SP	SP	SP	P	P	P	P	P	NP	NP		NP
Christmas Tree Sales, Temporary	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	P	NP		NP
Church or Other Place of Worship	SP	SP	SP	SP	SP	SP	SP	SP	P	P	P	P	SP	NP	NP		NP
Church Nursery or Day Child Care	SP	SP	SP	P	P	P	P	P	P	P	P	P	P	NP	NP		NP
Clinic, Dental, Medical, or Osteopathic, Chiropodist	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Clothing, Custom Manufacturing or Altering for Retail, including Tailoring	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	SP	NP	NP		NP
Club or Lodge, Public or Private	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Cold Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Condominium	NP	NP	NP	P	NP	P	NP	NP	SP	SP	SP	SP	SP	NP	NP		NP
Convenience Goods, Sale of	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	SP	NP	NP		NP
Convenience Store, 3,500 square feet or less	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	SP	P	NP	NP		NP

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Convenience Store, greater than 3,500 square feet	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP	To Be Proposed by Applicant	NP
Community Building	NP	SP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	NP	NP		NP
Compounding or Packaging of Cosmetics, Toiletries, Drugs, and Pharmaceutical Products	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	P		NP
Construction Staging Site without Heavy Equipment or Material Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	NP	P	P		NP
Construction Office/Building, Equipment Repair, Sales, or Contractor Storage Yard	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	P		NP
Custom Sewing	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Day Care Family Homes	NP	NP	NP	P	P	P	P	NP	NP	NP	NP	NP	NP	NP	NP		NP
Drive-through Window Pick up-Pay	NP	P	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Dry Cleaners, Laundry	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Drugstore or Pharmacy/Medical Marijuana Dispensary	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	SP	NP	NP		NP
Duplication Shop	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Dwelling for Resident Security Guard or Caretaker employed on the premises- No R.V. or Manufactured Home	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	P	NP	P	P		NP
Dwelling - Manufactured Home, Subdivision and Park	NP	NP	NP	NP	NP	NP	P	NP	NP	NP	NP	NP	NP	NP	NP		NP
Dwelling - Multi-Family - Duplex	NP	NP	NP	P	NP	P	NP	NP	P	P	NP	NP	P	NP	NP		NP
Dwelling -Multi -Family up to and including 8 plexes	NP	NP	NP	P	NP	P	NP	NP	P	P	NP	NP	NP	NP	NP		NP

RUSSELLVILLE, ARKANSAS

ARTICLE XIII. TABLE OF PERMITTED USES

June 2007

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Dwelling - Multi-Family - More than 8 Plexes	NP	NP	NP	NP	NP	P	NP	NP	P	P	NP	NP	NP	NP	NP		NP
Dwelling - Single-Family, Detached	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		SP
Dwelling - Single-Family, Manufactured Home	NP	NP	NP	NP	NP	P	P	NP	NP	NP	NP	NP	NP	NP	NP		NP
Dwelling - Single-Family, Zero Lot Lines	NP	NP	NP	NP	NP	P	NP	NP	P	P	NP	NP	NP	NP	NP		NP
Dwelling - Townhouses	NP	NP	NP	P	NP	P	NP	NP	P	P	SP	SP	SP	NP	NP		NP
Electrical Appliances, Equip & Supplies	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	NP	NP		NP
Electrical Substation	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		P
Exterminator, Pest	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	NP	SP	P	P		NP
Extraction of Clay, Gravel Quarrying of Rock	SP	SP	SP	SP	SP	SP	SP	SP	NP	NP	SP	SP	SP	SP	P		NP
Fabricator, Light – No trailer parking	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	P		NP
Farm Equip Sales, Service, Repairs	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	P	P		NP
Farm Buildings, barns, and stables	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	NP	NP	NP	P	P		SP
Feed and Fertilizer Sales and Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	P		NP
Fertilizers, Manufacturing of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP		NP
Field Crops, Floriculture, Greenhouse, Horticulture, Nursery, Truck Gardening	P	P	P	P	P	P	P	P	SP	SP	P	P	SP	P	P		P
Flea Market	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	SP	SP	NP		NP

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Florist Shop	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP	To Be Proposed by Applicant	NP
Food Products, including Dairy Products, Bakery Products, Candy, Fruit and Vegetable Processing and Canning, Packing and Processing of Meat and Poultry, but not including Distilling of Beverages, Slaughtering of Animals or Poultry, or Manufacture of Vinegar or Pickles	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Food Products, including Slaughtering of Animals or Poultry, or Manufacture of Vinegar or Pickles	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP		NP
Fraternity, Sorority Houses	NP	NP	NP	NP	NP	P	NP	NP	NP	NP	P	NP	P	NP	NP		NP
Freight Depot, Railroad, Truck or Barge	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	NP	NP	P	P		NP
Funeral Home, Mortuary or Undertaking Establishment	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	P	NP		NP
Gases or Liquids, Flammable, Bulk Storage of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Gas Regulator Station	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Golf Course, including commercially operated Driving Range or Miniature Golf Course	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	SP	NP	NP	NP	NP		P
Grain, Milling or Processing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Grocery Stores	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Group Shelter	NP	NP	NP	NP	NP	SP	SP	SP	SP	SP	SP	NP	SP	NP	NP		NP
Hardware, General Sales	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Hardware, Industrial Sales	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	P	P		NP

RUSSELLVILLE, ARKANSAS

ARTICLE XIII. TABLE OF PERMITTED USES

June 2007

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Hauling, Moving or Storage Company	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	NP		NP
Health Studio or Spa	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	SP	NP	NP		NP
Highway or Street Maintenance Garage, Yard of Similar Facility	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	NP	P	P		NP
Home Center	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP		NP
Hospital, Health Center, Institution for Aged or Children, Assisted Care Facility	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	NP	NP		NP
Hotel or Motel	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	NP	NP		NP
Ice, Dry or Natural, Manufacture of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Industrial Uses Not Listed	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP		NP
Interior Decorating Shop	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	SP	NP	NP		NP
Jewelry Store	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Laboratory, Research or Testing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Laundromat	NP	NP	NP	NP	NP	SP	SP	NP	P	P	P	P	P	P	P		NP
Laundry Plant	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Library	NP	P	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Livestock Auction Sales, Barn & Pens	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		SP
Lodge Hall, Veteran Organization, Service Organization	NP	SP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Machines, Machine Tools	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	To Be Proposed by Applicant	NP
Machine or Welding Shop	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	SP	P	P		NP
Manufactured Home Sales	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	P	P		NP
Manufacturing, Compounding, Processing, Packaging & Assembly	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Mattresses, including Rebuilding or Renovating	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Medical, Dental and Outpatient Surgical Clinic	NP	P	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Monument Sales	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	P	NP		NP
Monument Works	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Motorcycle Sales and Service	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	P	NP	NP	NP		NP
Newspaper Offices, Print Shop	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	NP	NP		NP
Nursing or Convalescent Home	NP	P	NP	NP	NP	SP	NP	NP	NP	NP	P	P	SP	NP	NP		NP
Nursery, Plants and Stock, Outdoor Retail Sales	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	P	NP	NP	NP		NP
Offices, Home	P	P	P	P	P	P	P	P	P	P	P	P	P	NP	NP		NP
Offices, Medical and Professional	NP	P	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Office Warehouse	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	P	P		NP
Orthopedic or Medical Supplies, Manufacture of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	P	P		NP

RUSSELLVILLE, ARKANSAS

ARTICLE XIII. TABLE OF PERMITTED USES

June 2007

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Paint, Enamel Lacquer, Turpentine, Varnish – Storage or Manufacture of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP		NP
Paper Manufacturing or Processing	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	P		NP
Park or Recreational Facility, Publicly Operated	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		P
Parking Lot or Garage, Public	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	NP	NP		NP
Petroleum Products Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Plastic Products, including Luggage, Tableware, Buttons, or Similar products, Manufacturing Of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Post Office	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	P	NP		NP
Printing and Publishing, including Engraving or Photoengraving	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	P	NP	P	P		NP
Public Buildings and Uses	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		P
Radio or TV Studio and/or Communication Tower, Commercial. 1. licensed under FCC Act of 1996	**See Article III.18**																
Radio or TV Studio and/or Communication Tower, Commercial. 1. Not licensed under FCC Act of 1996	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	P	P		P
*Radio or Communication Tower, Private, including Ham Operators	P	P	P	P	P	P	P	P	SP	SP	P	P	P	P	P		P
Recreation waterslide, race track, amusement park & related activities	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	NP	NP	NP		P
Recreational Vehicle Park	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	SP	SP	NP	SP	SP		NP
Re-cycle Collection	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	SP	SP	SP	SP	SP		NP

RUSSELLVILLE, ARKANSAS

ARTICLE XIII. TABLE OF PERMITTED USES

June 2007

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Refrigerated Vehicle Storage & Operation	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	To Be Proposed by Applicant	NP
Removal of Gravel, Topsoil, or similar Natural Material	SP	SP	SP	SP	SP	SP	SP	SP	NP	NP	SP	SP	SP	SP	SP		P
Residential Home Day Care	P	P	P	P	P	P	P	P	NP	NP	NP	NP	NP	NP	NP		NP
Restaurant	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Restaurant, Drive-in or Through	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Retail Establishments not listed with no outside sales or display	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Retail Establishments not listed with outside sales or display	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	SP	NP	NP		NP
Rubber Products, Natural or Synthetic – Manufacture or Storage of	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Sanitary Landfill	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
School, Business	NP	P	NP	NP	NP	NP	NP	NP	P	P	P	P	SP	NP	NP		NP
School Nursery or Child Care	NP	NP	NP	P	P	P	P	P	P	P	P	P	P	NP	NP		NP
School, Commercial or Trade	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	P	P	NP	P	P		NP
School, Nursery or Day Care Center	NP	NP	NP	P	P	P	P	P	P	P	P	P	P	NP	NP		NP
School, Public or Parochial	P	P	P	P	P	P	P	NP	NP	NP	P	P	P	NP	NP		NP
Self-storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	P	NP	P	P		NP
Sexually Oriented Businesses	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	SP	SP		NP

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Sheet Metal Shop	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	P		NP
Shoe Sales and Repair	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Shopping Center	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP		NP
Sign, Off Premise	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	NP	NP		NP
Skating Rinks	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP		NP
Small Tool and Equipment Rental	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	NP	NP	P	P		NP
Stables, for Commercial Hire	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	SP	NP	NP	NP	NP		NP
Stadium, Arena or Similar Facility	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	P		NP
Steel Products, Fabrication and Assembly	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	P	P		NP
Stone and Gravel Processing, or Products	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P		NP
Storage Building/Container Sale or Rental	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	SP	P		NP
Studio, Photographic or Musical	NP	P	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Tar or Tar Products, Creosoting, or Similar Process	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP		NP
Telephone Exchange, Shop or Garage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	P		NP
Theatre, Community	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	NP	NP		NP
Theatre, Indoor	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	NP	NP	NP		NP

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Tire Recapping Shop	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Heavy Tool and Equipment Rental	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	P	P		NP
Townhouses	NP	NP	NP	P	NP	P	NP	NP	SP	SP	SP	SP	SP	NP	NP		NP
Trailer Terminal and Distribution	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	NP	P	P		NP
Travel Bureau	NP	P	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP		NP
Truck Stop and Travel Center, or Truck Parking	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	P	NP	NP	NP		NP
Utility Equipment, Storage and Repair	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	NP		NP
Utility Substation	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		P
Vending Machine – Ice	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP		NP
Veterinarian, Office Only	NP	NP	NP	NP	NP	NP	NP	NP	P	P	P	P	P	NP	NP	To Be Proposed by Applicant	NP
Veterinary Clinic, Boarding & Overnight Care	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P	NP	NP	NP		NP
Warehousing, Inside Storage Only	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SP	SP	NP	P	P		NP
Warehousing, Inside & Outside Storage	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP
Water Treatment Plant	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	NP	NP	NP	SP	SP		P
Waste Water Treatment Plant	NP	NP	NP	NP	NP	NP	NP	SP	NP	NP	NP	NP	NP	SP	SP		P
Wholesale Establishment	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	NP	NP	P	P		NP

PERMITTED USES	R-E	R-O	R-1	R-2	R-2S	R-3	R-4	A-1	C-1	C-1B	C-2	C-3	C-4	M-1	M-2	PUD	CNS
Wood or Lumber Processing, including the Manufacture of Paper pulp, Furniture, or Similar Products	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	P	P		NP

Utilities

Electric:

Name of Utility:	Entergy Arkansas
Contact Person(s):	Joe Bailey or Chris Murphy
Address:	425 West Capitol Ave., Suite 2700
City, State, Zip:	Little Rock, AR 72201
Phone:	501-377-4089 or 501-377-4467
Fax:	501-377-4448
Email:	jbail12@entergy.com or cmurph4@entergy.com
Service and Proximity to Site:	13.8 kV, 3-phase distribution is available at the site (NW corner) and is fed just 1.5 mile from the Russellville East substation. A 161 KV transmission line is located within .5 miles, and a new substation was built less than 1 mile from the site in 2019.

Natural Gas:

Name of Utility:	CenterPoint
Contact Person(s):	Chauncey Taylor
Address:	P.O. Box 751
City, State, Zip:	Little Rock, AR 72203
Phone:	501-377-4557
Fax:	501-377-4630
Email:	Chauncey.taylor@centerpointenergy.com
Service and Proximity to Site:	6 inch gas line across the street from site (along north border)

Water:

Name of Utility:	City Corporation
Contact Person(s):	Steve Mallett
Address:	205 West Third Place
City, State, Zip:	Russellville, AR 72801
Phone:	479-968-2080, ext. 113
Fax:	479-968-3265
Email:	smallett@citycorp.com
Service and Proximity to Site:	12 inch main located across the street from site (along north border)

Utilities

Sewer:

Name of Utility:	City Corporation
Contact Person(s):	Steve Mallett
Address:	205 West Third Place
City, State, Zip:	Russellville, AR 72801
Phone:	479-968-2080, ext. 113
Fax:	479-968-3265
Email:	smallett@citycorp.com
Service and Proximity to Site:	8 inch sewer line located along east border of the site.

Telecommunications:

Name of Utility:	CenturyLink
Contact Person(s):	Gary Loyd, Manager Region Oper II- AR, MS, OK
Address:	98 West 2nd Street
City, State, Zip:	Booneville, AR 72927
Phone:	Office 479-206-0464
Fax:	
Email:	Gary.loyd@lumen.com
Service and Proximity to Site:	There is a fiber cable at the site, on the NW corner where Tyler Road and Industrial Blvd intersect.

Rail:

Name of Utility:	Union Pacific
Contact Person(s):	John B. Owens
Address:	24125 Old Aldine Westfield Rd
City, State, Zip:	Spring, TX 77373
Phone:	Office 281-350-7302, cell 713-204-3001
Fax:	
Email:	jbowens@up.com
Service and Proximity to Site:	Mainline service is located on the southern border of the site. Access to mainline is via Dardanelle-Russellville Railroad, a shortline rail with a transloading facility is located approximately 5.5 miles from the site.

Taxes

Local Sales Tax Rates:	1.5% City sales tax 1.0% County sales tax 6.0% State sales tax
Property Tax Rates (Real, Personal) and Methods of Assessment:	Property taxes are based on 20% of the total value. Russellville's millage is 39.2 mils. If the property value is $10,000,000, the property tax would be: $10,000,000 x .20 x .0392 = $78,400.
State Taxation Summary:	AEDC has provided tax summary to Entergy for inclusion. Reference "See AEDC taxation summary behind tab T-1."

as of August 2019

State of Arkansas Taxation Summary

Corporate Income Tax

Taxable income is apportioned according to a single-factor formula (sales attributed to Arkansas during the tax period). Corporate income tax is levied statewide only; not on the local level.

Net Income	Tax Rate
First $3,000	1%
Next $3,000	2%
Next $5,000	3%
Next $14,000	5%
Next $75,000	6%
Over $100,000	6.5%*

*In 2021, the tax percentage for over $100,000 net income will be 5.9%.

Personal Income Tax

2019 (Personal income tax is levied statewide only; not on the local level)

For Incomes less than $21,000 per year

Taxable Income	Tax Rate
$0 - $4,299	0.0%
$4,300 – $8,399	2.0%
$8,400 - $ 12,599	3.0%
$12,600 - $20,999	3.4%

For incomes between $21,000 and $75,000

Taxable Income	Tax Rate
$0 - $4,299	0.75%
$4,300 - $8,399	2.5%
$8,400 - $12,599	3.5%

$12,600 - $20,999	4.5%
$21,000 - $35,099	5.0%
$35,100 - $75,000	6.0%

For incomes more than $75,000

Taxable Income	Tax Rate
$0 - $4,299	0.9%
$4,300 - $8,399	2.5%
$8,400 - $12,599	3.5%
$12,600 - $20,999	4.5%
$21,000 - $35,099	6.0%
$35,100 +	6.9%

Incomes between $75,000 and $80,000 shall reduce the amount of income tax due by deducting bracket adjustment as set forth below

Taxable Income	Tax Rate
$75,001 - $76,000	$440
$76,001 - $77,000	$340
$77,001 - $78,000	$240
$78,001 - $79,000	$140
$79,001 - $80,000	$ 40
$80,001and above	$ 0

Federal Insurance Contributions Act (FICA)

The Federal Insurance Contributions Act (FICA) tax includes two separate taxes. One is social security tax and the other is Medicare tax. Different rates apply for each of these taxes.

The current tax rate for social security is 6.2% for the employer and 6.2% for the employee, or 12.4% total. The current rate for Medicare is 1.45% for the employer and 1.45% for the employee, or 2.9% total.

Only the social security tax has a wage base limit. The wage base limit is the maximum wage that is subject to the tax for that year. For earnings in 2019, this base is $132,900. There is no wage base limit for Medicare tax. All covered wages are subject to Medicare tax.

Additional Medicare Tax are applied to an individual's Medicare wages that exceed a threshold amount based on the taxpayer's filing status. Employers are responsible for withholding the 0.9% Additional Medicare Tax on an individual's wages paid in excess of $200,000 in a calendar year, without regard to filing status. An employer is required to begin withholding Additional Medicare Tax in the pay period in which it pays wages in excess of $200,000 to an employee and continue to withhold it each pay period until the end of the calendar year. There is no employer match for Additional Medicare Tax.

Corporate Franchise Tax

The chart below lists the franchise tax rates for various entities under Arkansas Code 26-54-104.

Franchise Tax Type	Current Rate
Corporation/Bank with Stock	0.3% of the outstanding capital stock; $150 minimum
Corporation/Bank without Stock	$300
Limited Liability Company	$150
Insurance Corporation Legal Reserve Mutual, Assets Less Than $100 million	$300
Insurance Corporation Legal Reserve Mutual, Assets Greater Than $100 million	$400
Insurance Company Outstanding Capital Stock Less Than $500,000	$300
Insurance Company Outstanding Capital Stock Greater Than $500,000	$400
Mortgage Loan Corporation	0.3% of the outstanding capital stock; $300 minimum
Mutual Assessment Insurance Corporation	$300

Sales Tax

The Arkansas sales tax is 6.5% of the gross receipts from the sales of tangible personal property and certain selected services. "Sale" includes the lease or rental of tangible personal property. In addition to the state sales and use tax, local sales and use taxes may be levied by each city or county. However, businesses may apply to the Arkansas Department of Finance and Administration for a refund of local taxes. "Single transaction" means any sale of tangible personal property or taxable service reflected in a single invoice, receipt or statement for which an aggregate sales or use tax amount has been reported or remitted to the state for a single, local taxing jurisdiction. These taxes are collected by the state and distributed to the cities and counties each month.

Sales Tax Exemptions – Sales Tax Savings

Exemptions from sales and use taxes for manufacturers are as follows:

- Property which becomes a recognizable, integral part of property manufactured, compounded, processed, or assembled for resale.
- Machinery and equipment used directly in manufacturing which are purchased for a new or expanding manufacturing facility or to replace existing machinery or equipment
- Machinery and equipment required by Arkansas law to be purchased for air or water pollution control

The value of this statutory exemption depends on the amount of eligible expenditures as determined by the Arkansas Department of Finance and Administration.

Sales and Use Tax Reduction on Electricity and Natural Gas

The State of Arkansas has a reduced rate of 0.625% on electricity and natural gas used directly in the manufacturing process. For purposes of determining what utility usage is subject to this reduced rate, the manufacturing process includes processes beginning at the point where raw materials are first moved from raw material storage to the beginning of manufacturing or processing of those raw materials into items of tangible personal property and ends when the finished manufactured goods are packaged and ready for shipment or storage.

Sales and Use Tax Refund – Replacement and Repair

Effective July 1, 2014, state sales and use taxes relating to the partial replacement and repair of machinery and equipment used directly in manufacturing process may be refunded. Act 772 of 2019 Sales and Use Tax Refund for Machinery and Equipment used to Modify, Replace, or Repair Molds and Dies Used in Manufacturing. Amended the Arkansas code §26-52-447(a) related to sales tax refund related to the partial replacement and repair of certain machinery and equipment to include machinery and equipment purchased to modify, replace, or repair, either in whole or in part, existing molds and dies used directly in producing, manufacturing, fabricating, assembling, processing, finishing or packaging articles of commerce at a manufacturing or processing facility. Effective date: July 1, 2019. Manufacturers may utilize one of two of the options presented on the next page:

Option One:

- Provides a refund of one percent (1%) of the total sales and use taxes (5.875* percent) levied for the purchase and installation of machinery and equipment to modify, replace or repair, either in whole or part, existing machinery or equipment used directly in the manufacturing process.

Effective Date	Option 1 Percentage
July 1, 2014	1%
July 1, 2018	2%
July 1, 2019	3%
July 1, 2020	4%
July 1, 2021	5%
July 1, 2022	Full exemption of state sales and use taxes

Option Two:

- Provides for an increased refund of the total sales and use taxes (5.875* percent) levied. It is discretionary and may be offered by the Executive Director of AEDC to those manufacturers who have a major maintenance and improvement project totaling at least $3 million to purchase and install machinery or equipment used directly in the manufacturing process. The project is subject to approval and the Company must enter into a financial incentive agreement with AEDC for the project prior to incurring project expenditures.

*The excise tax of one-eighth of one percent (1/8 of 1%) levied in Arkansas Constitution, Amendment 75, and the temporary excise tax of one-half percent (0.5%) levied in Arkansas Constitution Amendment 91, are not subject to refund under this section.

Unemployment Insurance Tax

New Businesses

A business with no previous employment record in Arkansas is taxed at 3.2% on the first $10,000 of each employee's earnings until an employment record is established, usually within three years.

Existing Arkansas Businesses

2019 Experience-Based Rate range between 0.1% - 14.0% and average 1.54%. Each business' employment record is determined primarily by its taxable payroll and history of employee

voluntary termination. The tax is determined by past experience and the amount of the reserve-ratio. The reserve-ratio is the excess of contributions paid over benefits charged as related to payroll. The higher the reserve-ratio, the lower the tax rate. Currently, the maximum weekly benefit in Arkansas is $451.

Federal Unemployment Tax (FUTA)

Aside from state unemployment insurance taxes, employers pay a federal unemployment or FUTA tax. The FUTA tax rate is 6.0% with a taxable wage base of $7,000. However, if states operate their unemployment insurance programs in compliance with federal law then the FUTA tax is reduced (credit) by 5.4% to 0.6%.

Property Tax

The State of Arkansas does not have a property tax; however, Arkansas cities and counties do collect a property tax, which is the principal source of revenue for funding local public schools.

The tax is calculated based on 20 percent of the true market value of real and to the usual selling price of personal property (vehicles, boats, etc.) and the average annual value of merchants' stocks and/or manufacturers' inventories based on millage rates in individual school districts. Business firms and individuals are subject to annual property tax on all real and personal property.

Local county tax assessors and collectors calculate and collect all personal and real property taxes. Revenue derived from personal property taxes supports your local government agencies. Personal property must be assessed each year before May 31. Any personal property taxes assessed after the deadline will include a monetary penalty determined by the respective county. These taxes are due on or before October 15 of the following year.

Real Property Option (Using Arkansas Average Millage Rate as an Example):

Total Market Value	x	Assessment Level	=	Assessed Value
$4,000,000	x	20%	=	$800,000

Assessed Value	x	Millage Rate	=	Annual Property Tax Due
$800,000	x	.04748	=	$37,984

Please note: Corporate personal property taxes (equipment, office furniture, etc.) follow a depreciation schedule for each type of property. The schedule below (with exceptions dependent on the area) is issued by each County Assessor's Office in Arkansas.

COMMERCIAL PERSONAL PROPERTY
Depreciation Schedule

Remaining Life Percent

Schedule Age	3	5	6	8	10	12	16	20	25	30	Schedule Age
1	.55	.73	.78	.87	.89	.91	.93	.94	.96	.96	**1**
2	.30	.53	.60	.71	.82	.85	.88	.88	.91	.93	**2**
3	.10	.39	.48	.59	.75	.79	.84	.85	.87	.89	**3**
4		.24	.35	.50	.68	.73	.79	.81	.84	.87	**4**
5		.10	.23	.42	.61	.67	.75	.78	.81	.84	**5**
6			.10	.33	.53	.61	.70	.74	.79	.82	**6**
7				.24	.46	.55	.66	.71	.76	.80	**7**
8				.15	.39	.49	.61	.67	.73	.77	**8**
9					.32	.43	.57	.64	.70	.75	**9**
10					.25	.37	.52	.60	.67	.73	**10**
11						.31	.48	.57	.64	.70	**11**
12						.25	.43	.53	.62	.68	**12**
13							.39	.50	.59	.65	**13**
14							.34	.46	.56	.63	**14**
15							.30	.43	.53	.61	**15**
16							.25	.39	.50	.58	**16**
17								.36	.48	.56	**17**
18								.32	.45	.53	**18**
19								.29	.42	.51	**19**
20								.25	.39	.49	**20**
21									.36	.46	**21**
22									.33	.44	**22**
23									.31	.42	**23**
24									.28	.39	**24**
25									.25	.37	**25**
26										.34	**26**
27										.32	**27**
28										.30	**28**
29										.27	**29**
30										.25	**30**

Industrial revenue bond financing is available to a company in Arkansas for land acquisition, building acquisition, construction and equipment. Bonds can be issued as either taxable or tax exempt, depending on certain IRS qualifications and restrictions.

The Arkansas Economic Development Commission Bond Guaranty Program was created to provide long-term, tax exempt and taxable financing for businesses expanding or locating in Arkansas. Although the city or county may issue the revenue bond, the company is still responsible for paying the principal and interest.

Under this program, the Commission can guarantee timely payment of principal and interest, up to $5,000,000 principal per bond issue, to the bondholders. This guaranty gives the bonds a better rating, thereby making the bond more attractive to investors and reducing the company's cost to borrow money.

An additional benefit of bond financing is:

Cities and counties are authorized to enter into a Payment in Lieu of Tax (PILOT) Agreement with industrial projects resulting in a reduction of property taxes that would otherwise be due. Industrial Revenue Bonds are issued by the city or county on behalf of the project. Under PILOT agreements, title to the property is held in name only by the public issuer for the term of the bond issue. At the end of the bond term, title will transfer to the company. The amount of the payment in lieu of taxes must not be less than 35% of what normal taxes would have been. The PILOT Agreement may not last longer than the term of the bond.

Inventory Tax

All real estate and tangible personal property (inventory) shall be assessed for taxation in the taxing district in which the property is located and kept in use.

If destination of a company's tangible personal property (inventory) is within the state, taxes will be assessed at its prior year's value only in the county/city of its destination.

Freeport Law

If destination of a company's tangible personal property (inventory) is out of state, the following statement applies:

Arkansas' Freeport Law exempts from property tax those finished goods and raw materials in transit or awaiting shipment to out-of-state customers.

Workers' Compensation Rate for the Manufacturing Sector

2018

Type of Rate	Rate per $100 payroll
Assigned Risk	$2.04
Advisory Loss Cost	$1.02

Source: NCCI July 2019 Arkansas Manufacturing Rates

The assigned risk rate is based on the inability for companies to obtain their own insurance, while the loss cost is for companies which are self-insured.

Maps

The following maps are provided behind this tab:

- Transportation, Regional
- Transportation, Immediate
- Aerial
- Topographic
- Elevation Contours
- FEMA Flood Hazard
- National Wetlands Inventory
- Pipeline Infrastructure
- Electrical Infrastructure
- Local Utilities
- Surrounding Uses
- Zoning

Entergy BUSINESS DEVELOPMENT ARKANSAS

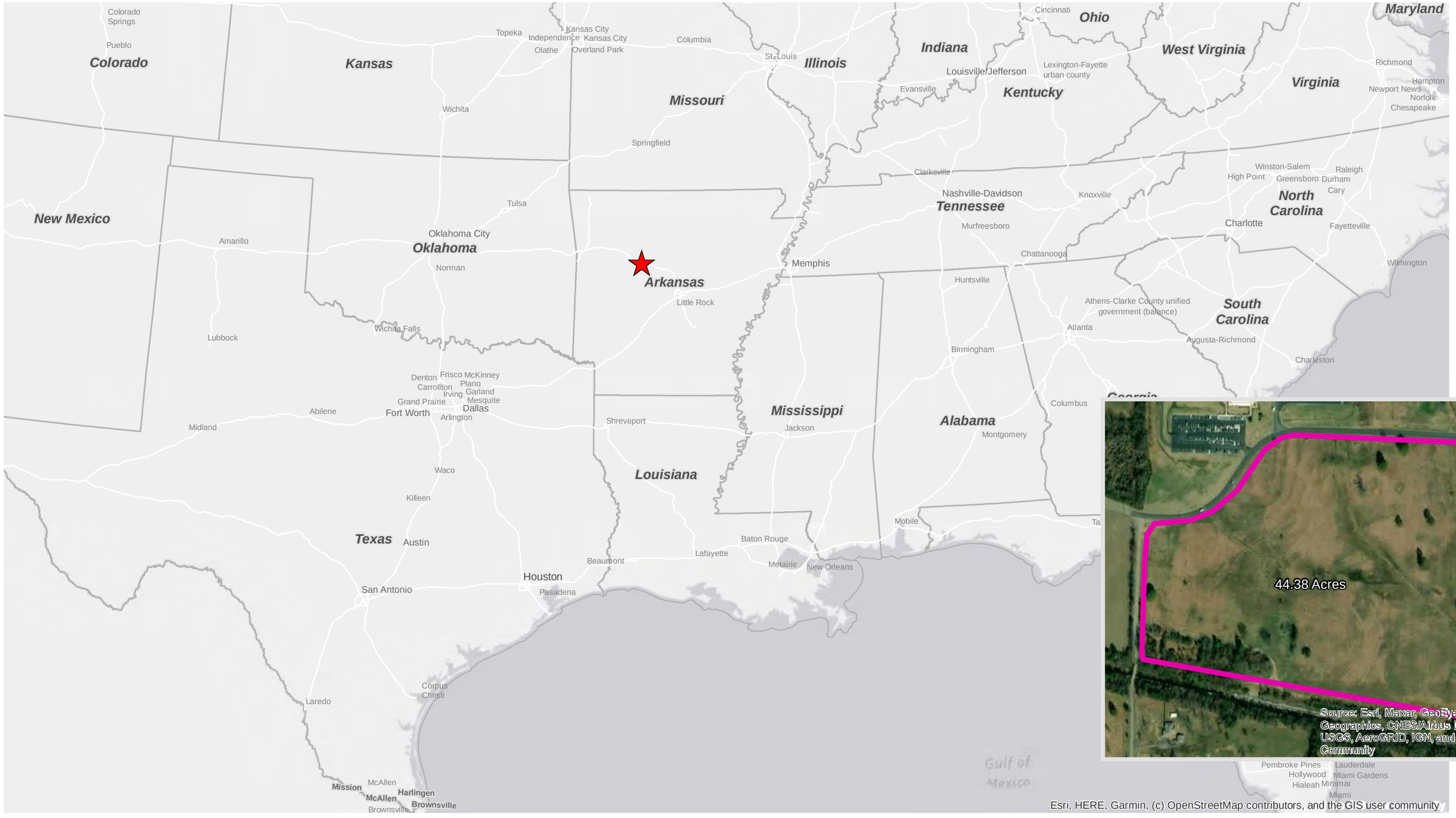
Butterfield Site

Russellville, AR

425 West Capitol Avenue
Little Rock, AR 72201

Phone: 1-888-301-5861

goentergy.com\ark



Entergy
BUSINESS DEVELOPMENT
ARKANSAS

Butterfield Site

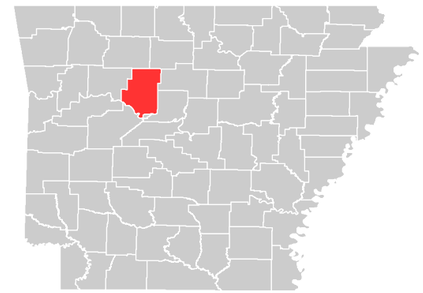
Transportation, Regional

425 W Capital Ave Suite 2700
Little Rock, AR 72201

Phone: 1-888-301-5861

goentergy.com/ar

POPE COUNTY



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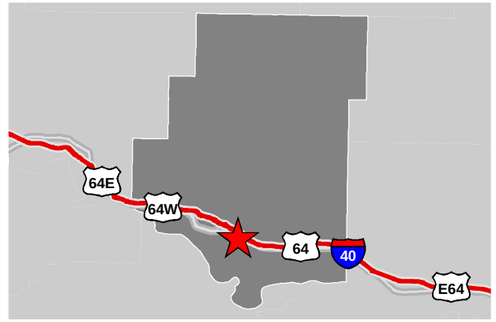

LEGEND

- Site
- Port
- Airports
- Railroads

Highways

- Interstate
- U.S.

NOTE

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SOURCE

Roads: Census/TIGER database, 2014
Railroads: Federal Railroad Administration,
Bureau of Transportation Statistics, ESRI, 2014
ESRI Basemaps; ESRI Datamaps 10.2; Census Tiger, 2014

N

Created by: RPG
Date: 7/2020

1:633,600

0 5 10 20 Miles

0 6.336 12.672 25.344 Kilometers

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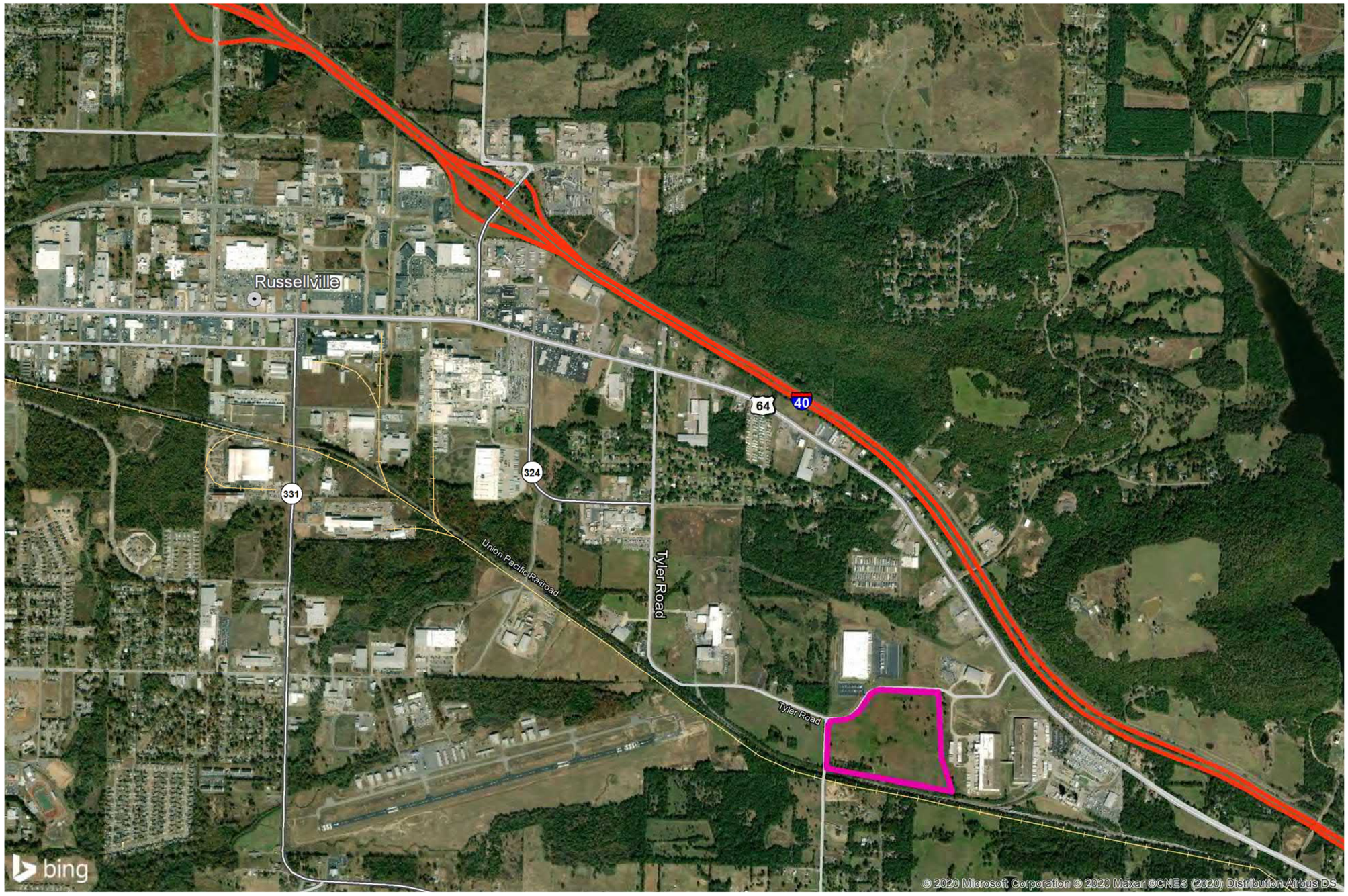
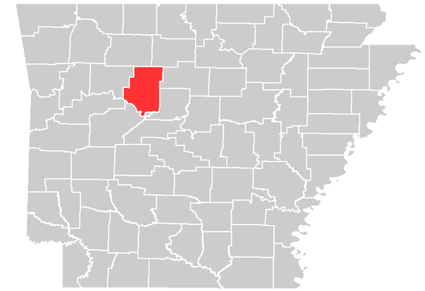
Butterfield Site

Transportation, Immediate



POPE COUNTY



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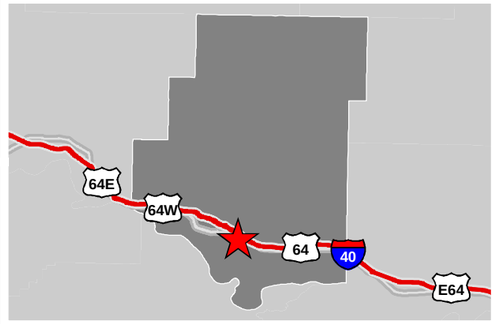

LEGEND

- Property Boundary
- Railroads
- Interstate Highway
- U.S. Highway
- State Highway
- County Roadway

NOTE

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SOURCE

Roads: Census/TIGER database, 2014
Railroads: Federal Railroad Administration, Bureau of Transportation Statistics, ESRI, 2014

N

Created by: RPG
Date: 7/2020

1:18,000

0 750 1,500 3,000 Feet

0 180 360 720 Meters

Entergy BUSINESS DEVELOPMENT ARKANSAS

Butterfield Site

Aerial

425 W Capital Ave Suite 2700
Little Rock, AR 72201

Phone: 1-888-301-5861

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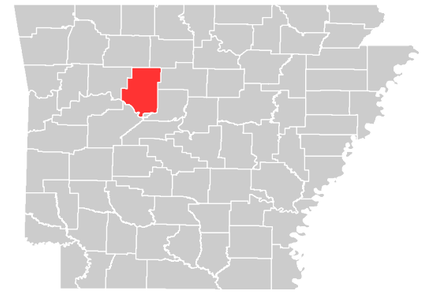
POPE COUNTY



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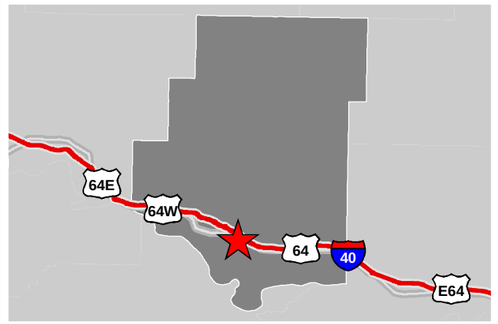

LEGEND

- Property Boundary
- Railroads
- Interstate Highway
- U.S. Highway
- County Roadway

NOTE

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SOURCE

Roads: Census/TIGER database, 2014
Railroads: Federal Railroad Administration, Bureau of Transportation Statistics, ESRI, 2014

N

Created by: RPG
Date: 7/2020

1:5,000

0 250 500 1,000 Feet

0 60 120 240 Meters

Entergy BUSINESS DEVELOPMENT ARKANSAS

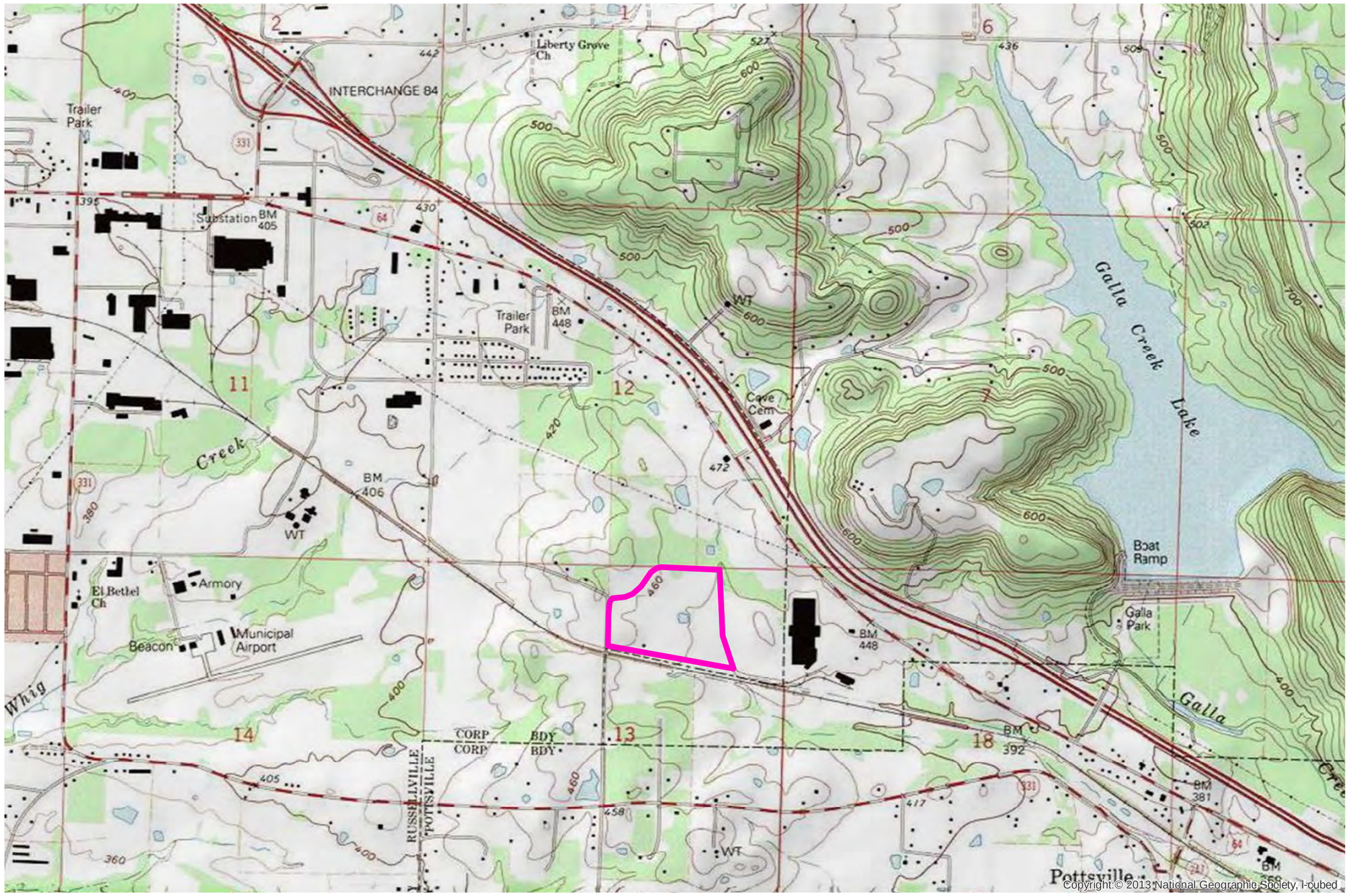
Butterfield Site

Topographic Map

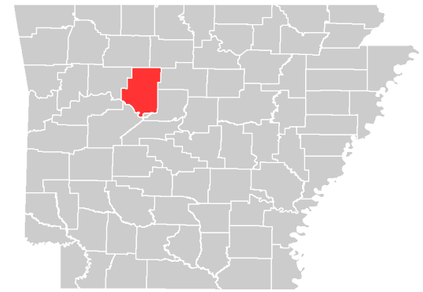
425 W Capital Ave Suite 2700
Little Rock, AR 72201

Phone: 1-888-301-5861

goentergy.com/ar



POPE COUNTY



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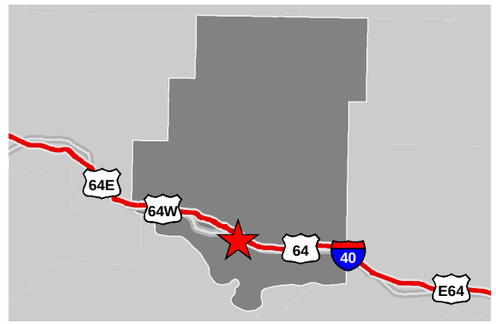

LEGEND

Property Boundary

NOTE

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SOURCE

- Aerial Imagery by USGS/USA Topo Maps

N

Created by: RPG
Date: 7/2020

1:18,000

0 750 1,500 3,000 Feet

0 180 360 720 Meters

Entergy BUSINESS DEVELOPMENT ARKANSAS

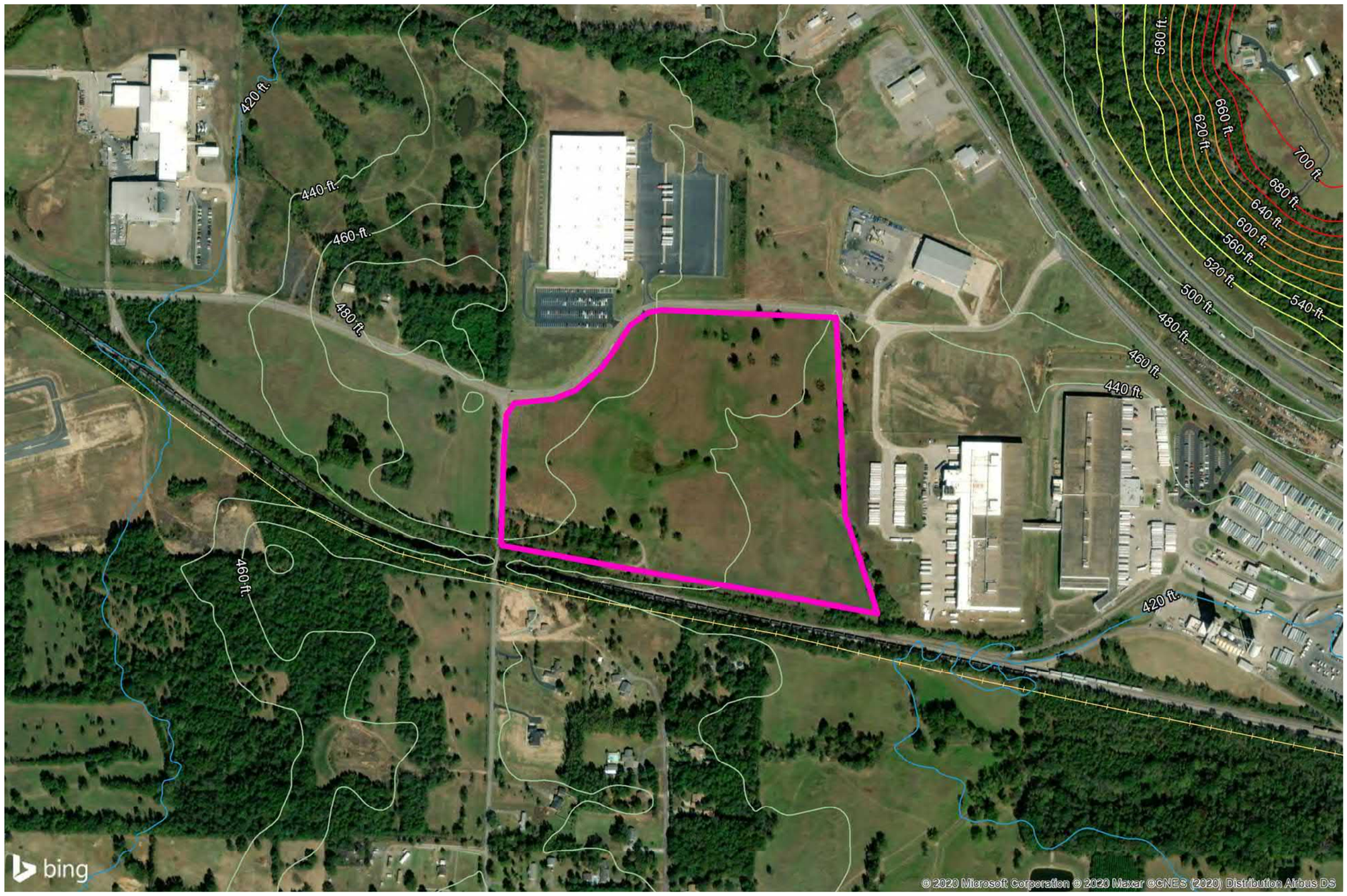
Butterfield Site

Elevation Contours

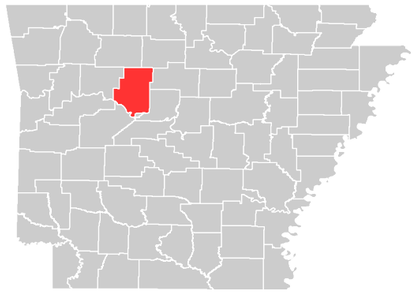
425 W Capital Ave Suite 2700
Little Rock, AR 72201

Phone: 1-888-301-5861

goentergy.com/ar



POPE COUNTY



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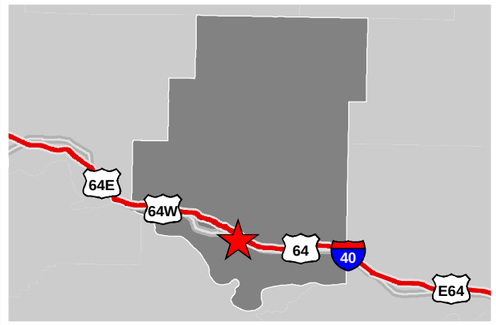

LEGEND

Property Boundary

Railroads

Elevation Contours (ft.)

360.0 - 420.0
420.1 - 500.0
500.1 - 560.0
560.1 - 640.0
640.1 - 720.0

NOTE

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SOURCE

Roads: Census/TIGER database, 2014
Railroads: Federal Railroad Administration,
U.S. Geological Survey, National Geospatial Program, Publication Date: 2018/02/10

N

Created by: RPG
Date: 7/2020

1:6,000

0 250 500 1,000 Feet

0 60 120 240 Meters

Entergy BUSINESS DEVELOPMENT ARKANSAS

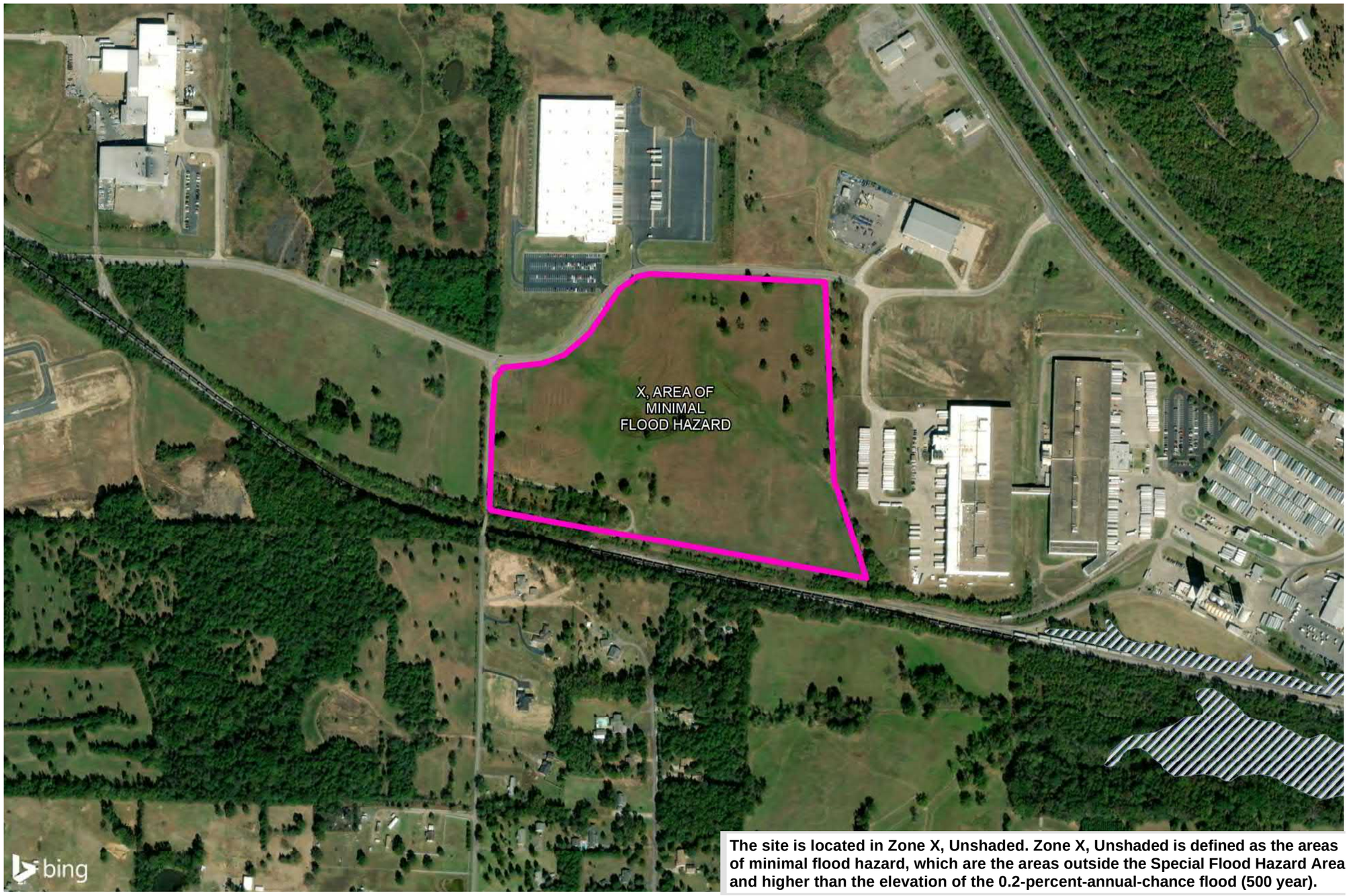
Butterfield Site

FEMA Flood Hazard Map

425 W Capital Ave Suite 2700
Little Rock, AR 72201

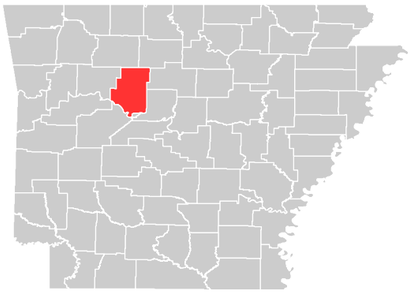
Phone: 1-888-301-5861

goentergy.com/ar



The site is located in Zone X, Unshaded. Zone X, Unshaded is defined as the areas of minimal flood hazard, which are the areas outside the Special Flood Hazard Area and higher than the elevation of the 0.2-percent-annual-chance flood (500 year).

POPE COUNTY



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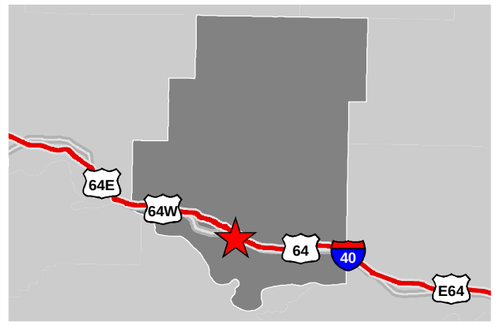

LEGEND

Property Boundary

Flood Hazard Zone

A,

X, AREA OF MINIMAL FLOOD HAZARD

NOTE

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SOURCE

Federal Emergency Management Agency, 2017_05_25, National Flood Hazard Layer (NFHL), Version 1.1.1.0 FEMA-NFHL

N

Created by: RPG
Date: 7/2020

1:6,000

0 250 500 1,000 Feet

0 60 120 240 Meters

Entergy BUSINESS DEVELOPMENT ARKANSAS

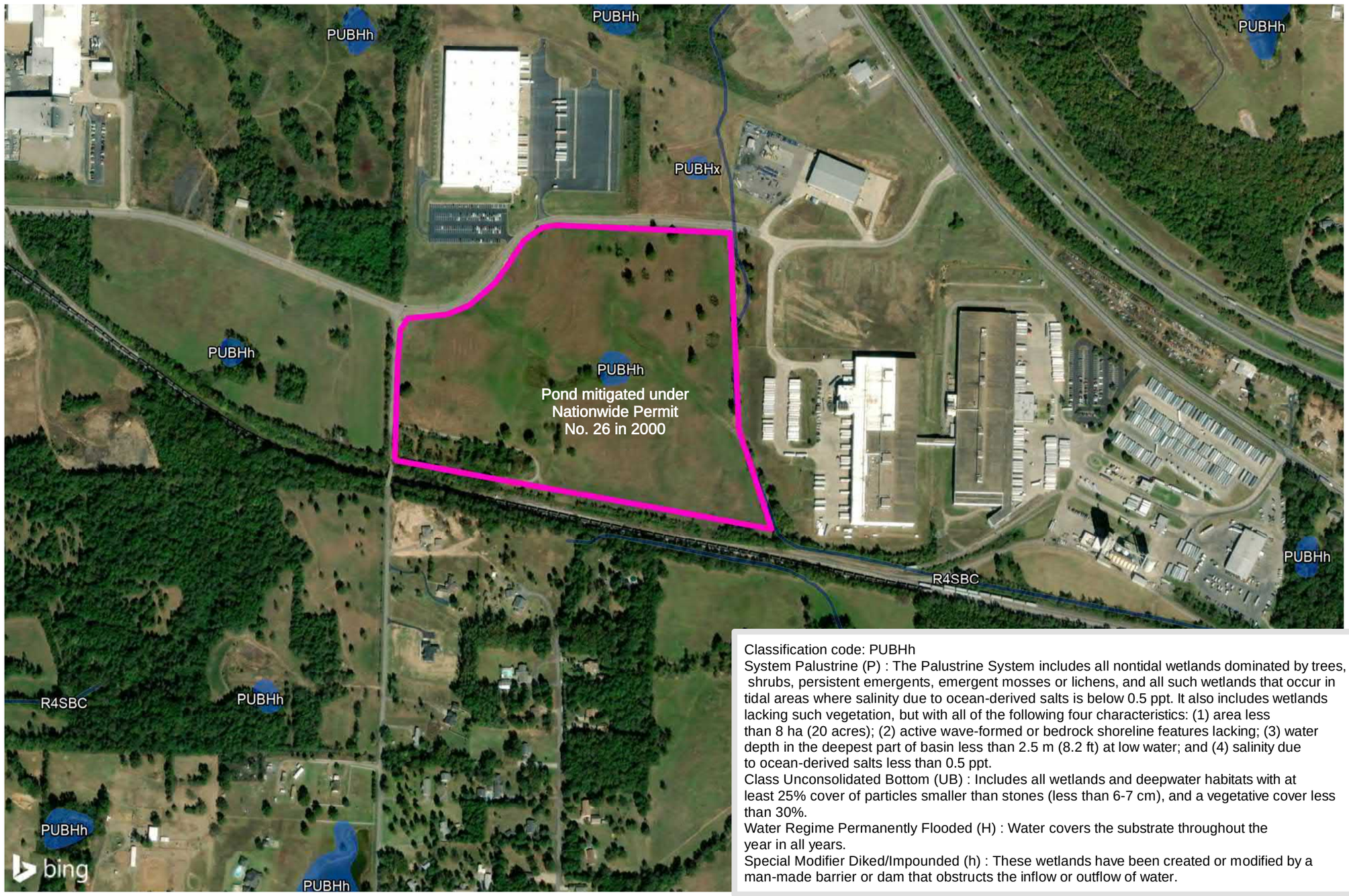
Butterfield Site

National Wetlands Inventory

425 W Capital Ave Suite 2700
Little Rock, AR 72201

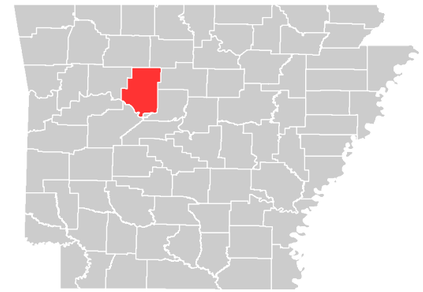
Phone: 1-888-301-5861

goentergy.com/ar



Classification code: PUBHh
System Palustrine (P) : The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.
Class Unconsolidated Bottom (UB) : Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.
Water Regime Permanently Flooded (H) : Water covers the substrate throughout the year in all years.
Special Modifier Diked/Impounded (h) : These wetlands have been created or modified by a man-made barrier or dam that obstructs the inflow or outflow of water.

POPE COUNTY



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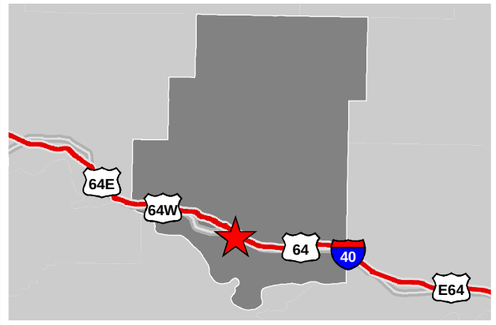

LEGEND

Property Boundary

Wetland Type

Freshwater Forested/Shrub Wetland

Freshwater Pond

Riverine

NOTE

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SOURCE

National Wetland Inventory, US Fish and Wildlife Service (FWS), Download Date 8/06/2018.

N

Created by: RPG
Date: 7/2020

1:6,000

0 250 500 1,000 Feet

0 60 120 240 Meters

Entergy BUSINESS DEVELOPMENT ARKANSAS

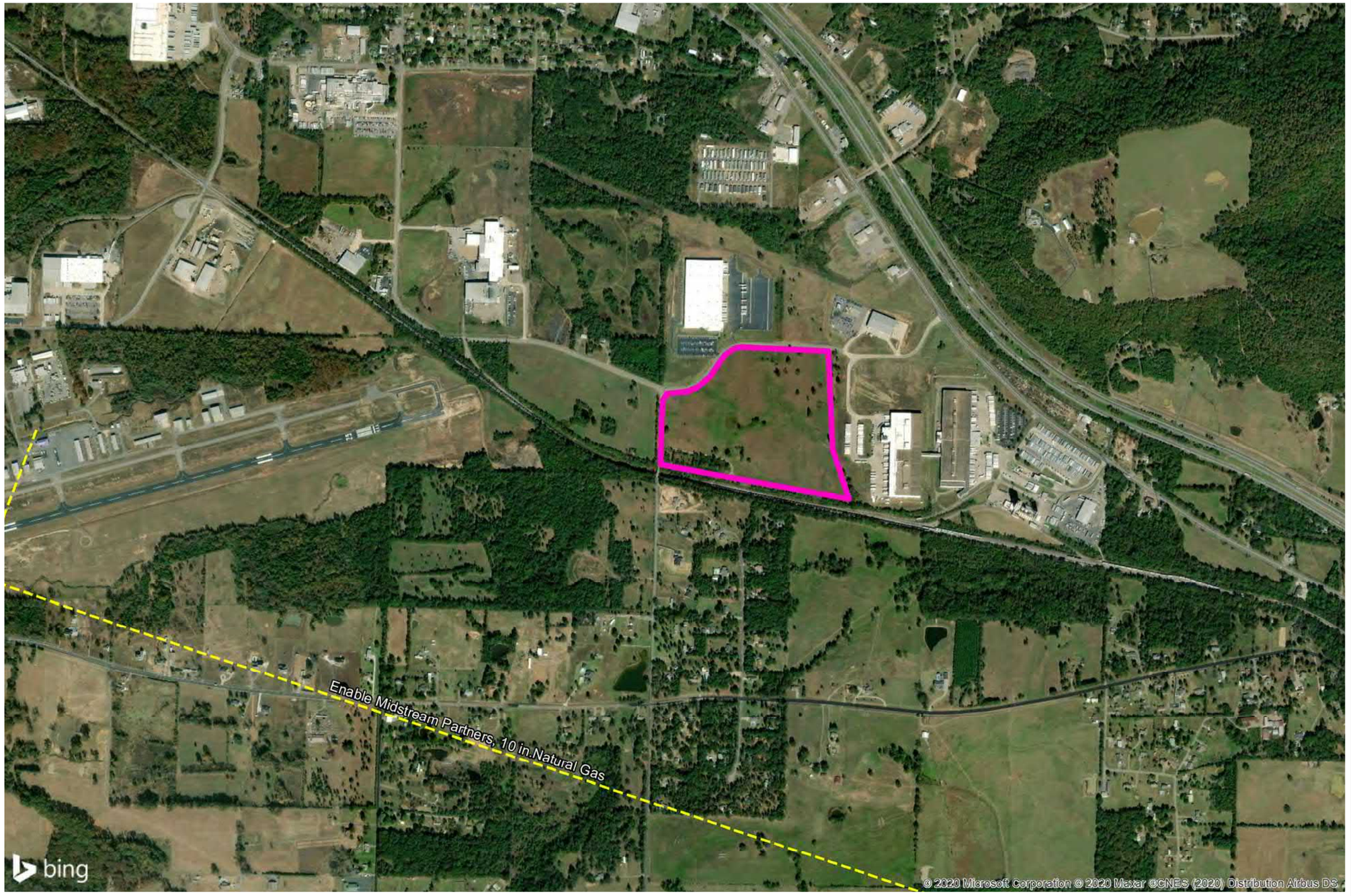
Butterfield Site

Pipeline Infrastructure

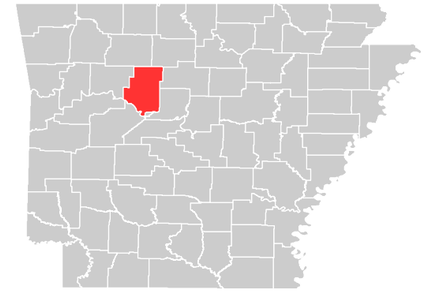
425 W Capital Ave Suite 2700
Little Rock, AR 72201

Phone: 1-888-301-5861

goentergy.com/ar



POPE COUNTY



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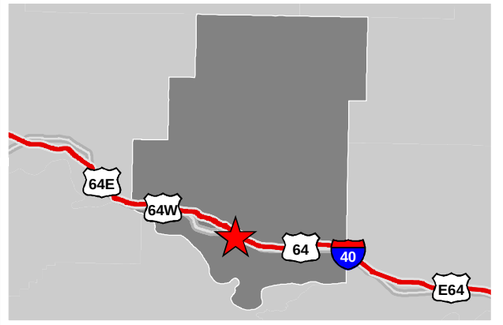

LEGEND

Property Boundary

Pipeline Commodity

Natural Gas

NOTE

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SOURCE

-- 2017 Pennwell MAPSearch Pipeline Data

N

Created by: RPG
Date: 7/2020

1:12,000

0 500 1,000 2,000 Feet

0 120 240 480 Meters

Entergy BUSINESS DEVELOPMENT ARKANSAS

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Little Rock, AR 72201

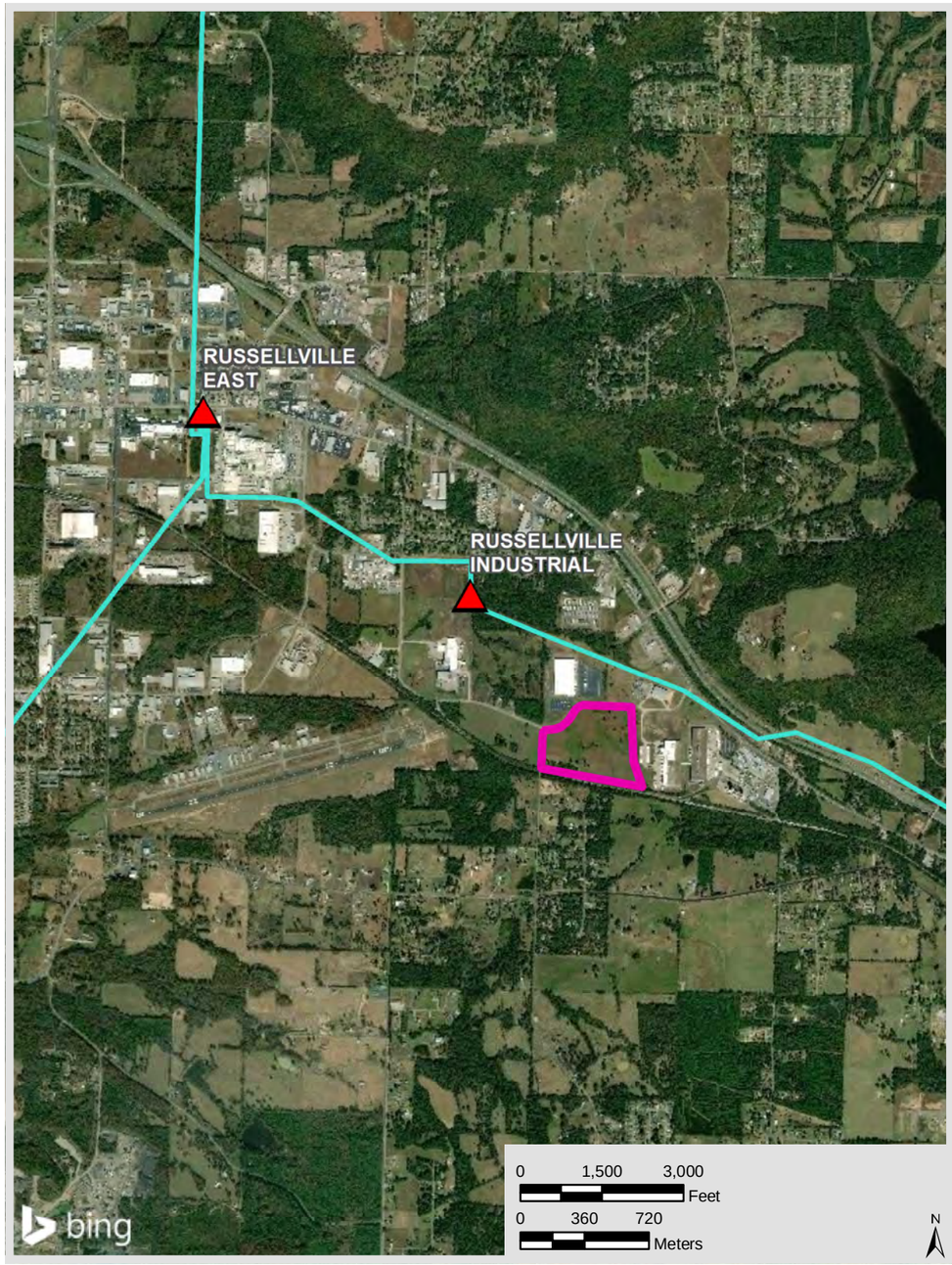
Phone: 1-888-301-5861

goentergy.com/ar

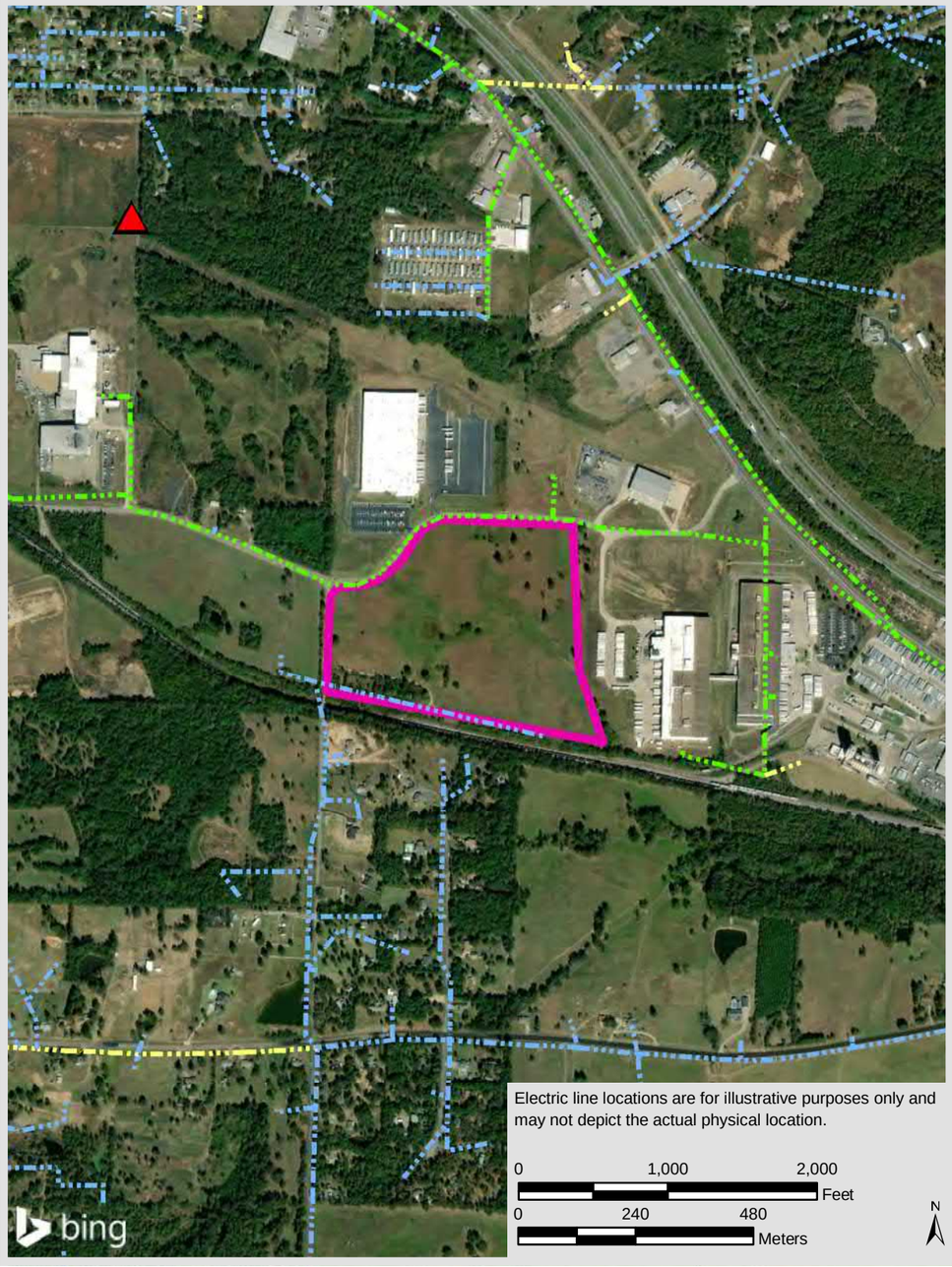
Butterfield Site

Entergy's Electrical Infrastructure

TRANSMISSION

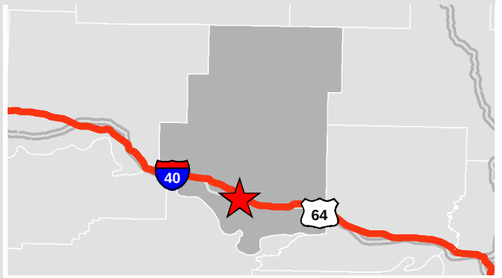


DISTRIBUTION



POPE COUNTY

VICINITY



LEGEND

Property Boundary

Transmission

Substations

161 kV

Distribution

Electrical System Voltage, Phase

13.8 kV, Single Phase

13.8 kV Two Phase

13.8 kV Three Phase

NOTE

SOURCE

Source: Transmission-Entergy, 2018;
Distribution-Entergy, 2018

Created by: RPG
Date: 7/2020

Entergy BUSINESS DEVELOPMENT ARKANSAS

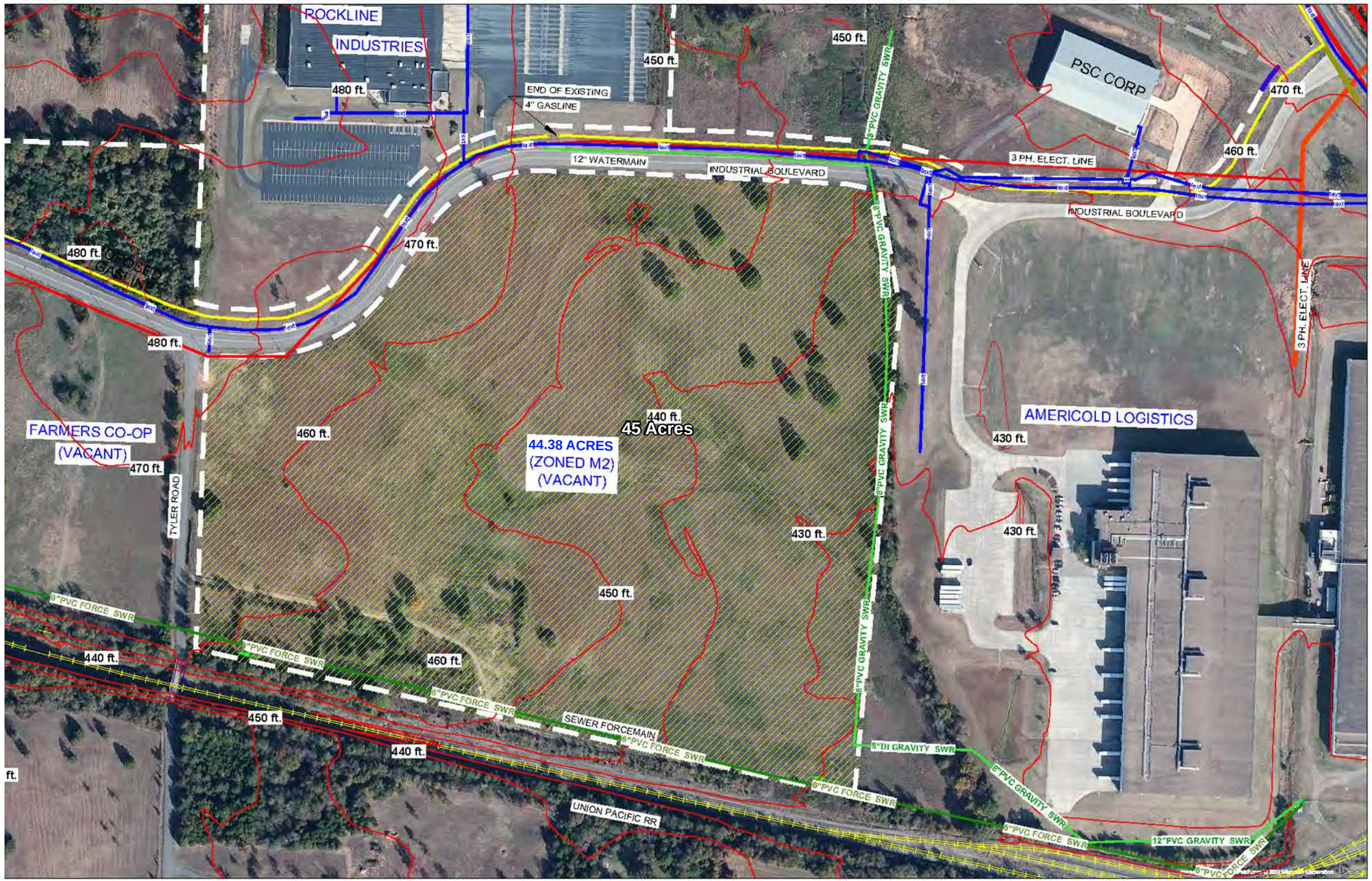
Butterfield Site

Utilities

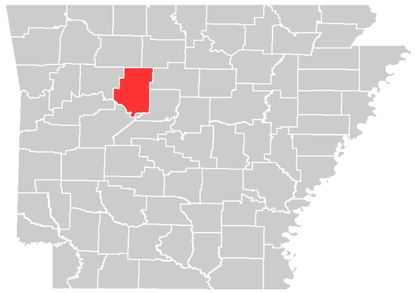
425 W Capital Ave Suite 2700
Little Rock, AR 72201

Phone: 1-888-301-5861

goentergy.com/ar



POPE COUNTY



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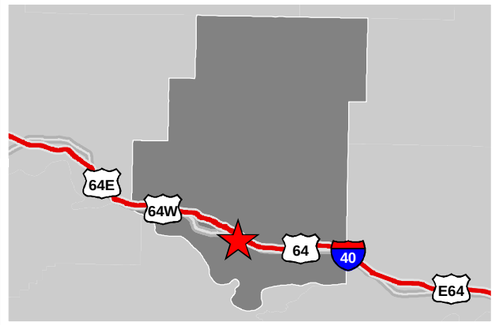

LEGEND

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SOURCE

Utilities: Pope County

N

Created by: RPG
Date: 12/2020

Entergy BUSINESS DEVELOPMENT ARKANSAS

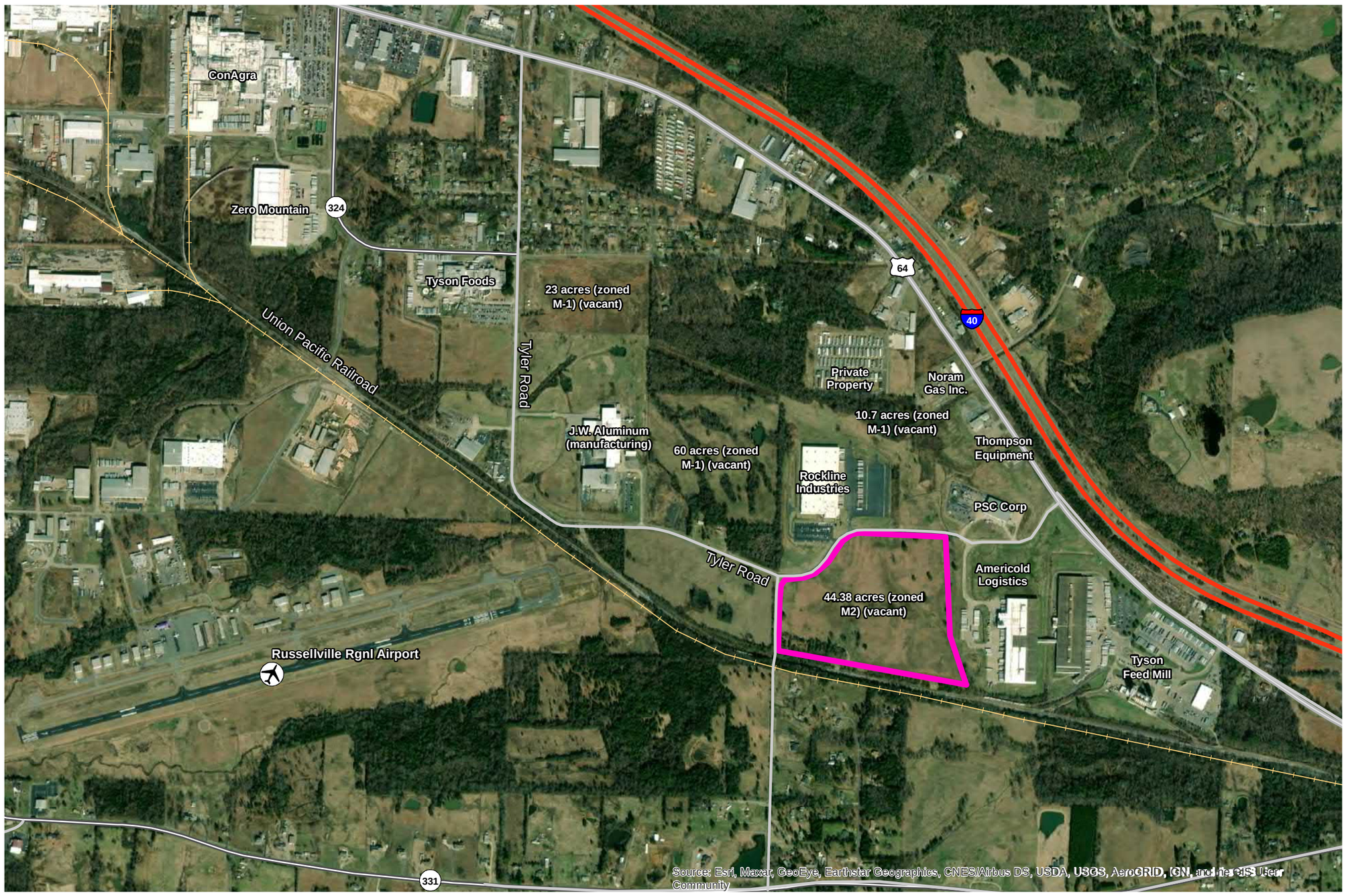
Butterfield Site

Surrounding Industries

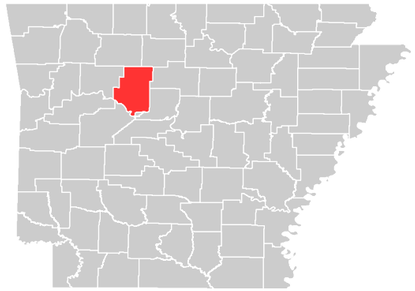
425 W Capital Ave Suite 2700
Little Rock, AR 72201

Phone: 1-888-301-5861

goentergy.com/ar



POPE COUNTY



VICINITY

LEGEND

- Property Boundary
- Airports
- Interstate Highway
- U.S. Highway
- State Highway
- County Roadway
- Railroads

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SOURCE

Roads: Census/TIGER database, 2014
Railroads: Federal Railroad Administration, Bureau of Transportation Statistics, ESRI, 2014

N

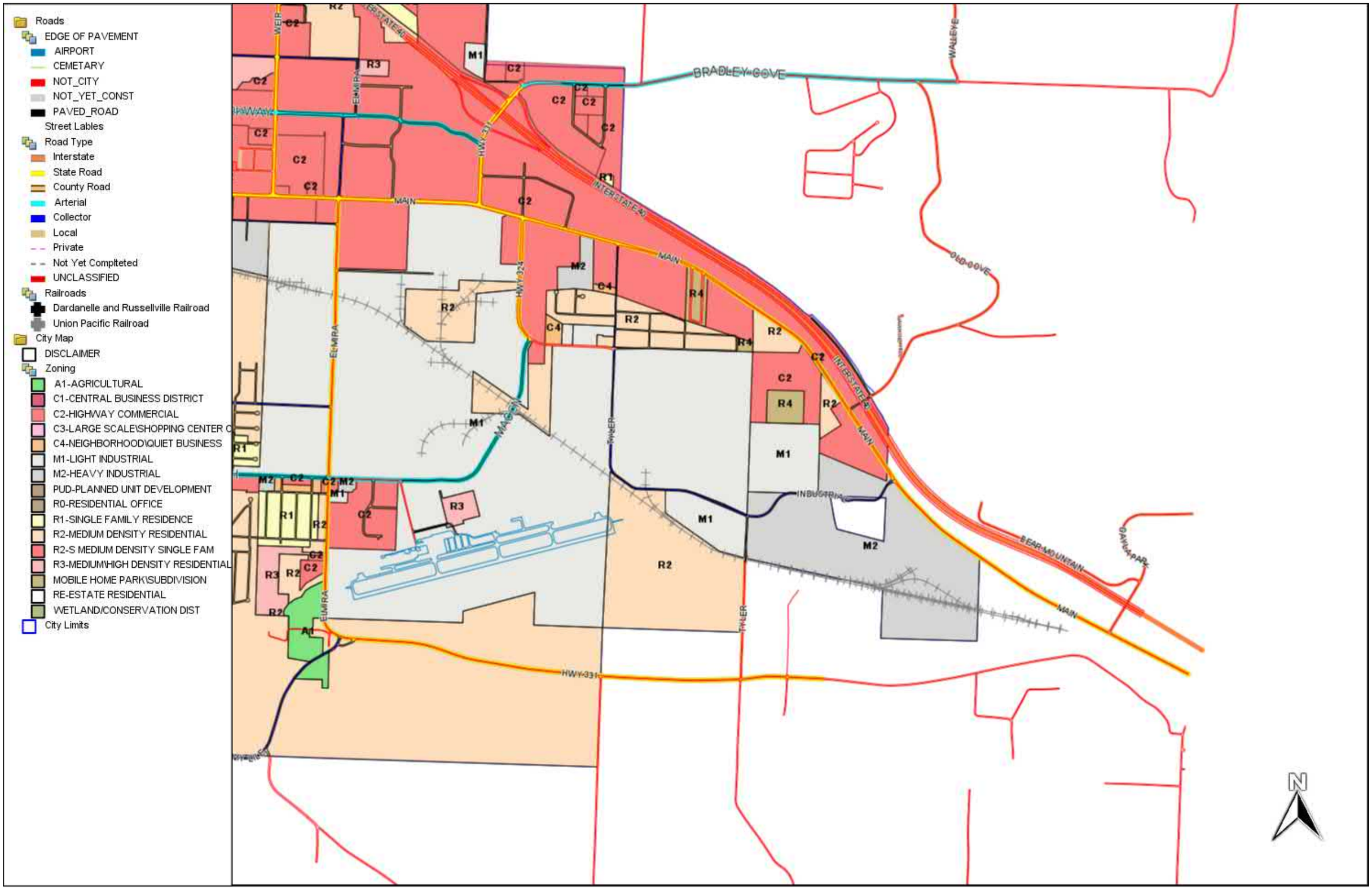
Created by: RPG, PCW
Date: 7/2020

1:12,000

0 500 1,000 2,000 Feet

0 120 240 480 Meters

Zoning
East End Industrial Park



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Recipients of these materials must perform their own investigation and due diligence concerning all aspects of the site and/or improvements, financial, tax, and business matters associated therewith so as to enable them to evaluate the merits and risks of the site and to make any informed decision with respect thereto.