

Closure Plan
Closed CCR Surface Impoundment
40 CFR 257.102(b)
Revision 4

Asbury Power Plant
21133 Uphill Road
Asbury, Missouri 64832

October 17, 2016
Revised November 16, 2018
Revised January 27, 2021
Revised March 21, 2022
Revised February 28, 2023

Prepared For:
The Empire District Electric Company,
A Liberty Utilities Company
602 S. Joplin Avenue
Joplin, Missouri 64801



TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 PLAN CERTIFICATION 257.102(b)(4)	1
3.0 WRITTEN CLOSURE PLAN	2
3.1 Narrative	2
3.2 CCR Left in Place	2
3.3 Final Cover System	2
3.4 Maximum CCR Inventory	4
3.5 Maximum CCR Area	4
3.6 Schedule	4
4.0 NOTIFICATIONS	5
5.0 CLOSURE PLAN AMENDMENT	6
6.0 CERTIFICATION	6
7.0 AMENDMENTS	6

Attachments:

Figures

1.0 INTRODUCTION

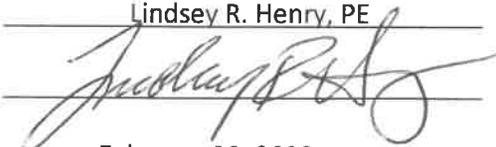
257.102 Criteria for conducting the closure or retrofit of CCR units. (a) Closure of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must be completed either by leaving the CCR in place and installing a final cover system or through removal of the CCR and decontamination of the CCR unit, as described in paragraphs (b) through (j) of this section. Retrofit of a CCR surface impoundment must be completed in accordance with the requirements in paragraph (k) of this section.

40 CFR 257.102(b) of the Final Rule on Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule) requires the development of written closure plan for CCR surface impoundment. The Empire District Electric Company's Asbury Power Plant (Asbury) has one CCR Surface Impoundment. The site occupies the north half of Section 17, Township 30 North, and Range 33 West on the Asbury 7.5-Minute Quadrangle Map as seen in **Figure 1**. The impoundment was closed by leaving CCR in place.

The closure plan has been amended to reflect final closure of the facility and the use of ClosureTurf as the final cover system. Final Closure of the CCR Surface Impoundment was completed January 23, 2023.

2.0 PLAN CERTIFICATION 257.102(b)(4)

The undersigned Professional Engineer (P.E.) is familiar with the requirements of 40 CFR Part 257. The attached CCR closure plan for the existing CCR Surface Impoundment at the Asbury Power Plant has been prepared in accordance with the requirements of 257.102(b).

Name: Lindsey R. Henry, PE
Signature: 
Date: February 28, 2023

Registration Number: E-21592

State: Missouri



3.0 WRITTEN CLOSURE PLAN

257.102(b) Written closure plan (1) Content of the plan. The owner or operator of a CCR unit must prepare a written closure plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally accepted good engineering practices. The written closure plan must include, at a minimum, the information specified in paragraphs (b)(1)(i) through (vi) of this section.

This closure plan is being prepared in accordance with 257.102(b) to outline the steps necessary to close the CCR Surface Impoundment at the Asbury Power Plant. This plan has been prepared in accordance with generally accepted good engineering practices.

3.1 Narrative

257.102(b)(1)(i) A narrative description of how the CCR unit will be closed in accordance with this section.

The CCR Surface Impoundment that served the Asbury Power Plant is approximately 106.4 acres. The CCR Impoundment was subdivided into three (3) operational Ponds, identified as the Lower Pond, Upper Pond, and South Pond. The Lower Pond, Upper Pond, and South Pond were separated by interior earthen berms, and could be hydraulically separated from one another for operational purposes. The CCR Surface Impoundment was closed by leaving the CCR in place. The date of final closure was January, 23, 2023.

Free liquids were removed to the extent possible, and the existing CCR materials were sufficiently stabilized to support the placement of the final fill and final cover system. Any discharge was discharged through a NPDES permitted outfall. This discharge was in compliance with the current NPDES permit. The CCR materials were graded to provide positive drainage of stormwater. A final cover system was installed to minimize infiltration and erosion. Additional information is presented in Section 3.3 below.

3.2 CCR Left in Place

257.102(b)(1)(iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with paragraph (d) of this section, and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in paragraph (d) of this section.

The CCR was placed and graded to provide positive drainage of stormwater. The final cover system was designed and constructed to meet the criteria in paragraphs 257.102(d)(3)(i). The integrity of the final cover system was designed to accommodate settling and subsidence. The final cover system for the CCR Surface Impoundment was in compliance with 40 CFR 257.102(d)(3).

3.3 Final Cover System

40 CFR 257.102(d)(3)(i) The final cover system must be designed and constructed to meet the criteria in paragraphs (d)(3)(i)(A) through (D) of this section. The design of the final cover system must be included in the written closure plan required by paragraph (b) of this section.

- (A) The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less.*
- (B) The infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material.*
- (C) The erosion of the final cover system must be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.*
- (D) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.*

40 CFR 257.102(d)(3)(ii) outlines the requirements should the facility chose to utilize an alternative final cover system. This regulation states:

The owner or operator may select an alternative final cover system design, provided the alternative final cover system is designed and constructed to meet the criteria in paragraphs (d)(3)(ii)(A) through (C) of this section. The design of the final cover system must be included in the written closure plan required by paragraph (b) of this section.

- (A) The design of the final cover system must include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in paragraphs (d)(3)(i)(A) and (B) of this section.*
- (B) The design of the final cover system must include an erosion layer that provides equivalent protection from wind or water erosion as the erosion layer specified in paragraph (d)(3)(i)(C) of this section.*
- (C) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.*

In addition 40 CFR 257.102(d)(3)(iii) requires an alternative cover system design to be certified by a professional engineer. This regulation states:

The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the design of the final cover system meets the requirements of this section.

Asbury chose to utilize an alternative final cover system. An Alternative Final Cover System Demonstration was completed December 21, 2021 for the Empire District Electric Company's CCR Surface Impoundment at the Asbury Power Plant. The Alternative Final Cover System Demonstration was completed in compliance with 40 CFR 257.102(d)(3)(ii) and certified by a professional engineer in compliance with 40 CFR 257.102(d)(3)(iii) of the EPA CCR Rule. This Demonstration was placed in the facility's operating record.

The chosen final cover system was the ClosureTurf system. ClosureTurf is a patented, three component system that is EPA Subtitle D compliant landfill that is specifically designed to address and solve soil erosion, slope integrity, installation and maintenance cost control, EPA regulation compliance, and longevity of structure and appearance. The anticipated design life of ClosureTurf is 100 years. ClosureTurf consists of the following components, top to bottom.

- Specialized sand infill
- Engineered artificial turf
- Flexible geomembrane liner (FML)
- Prepared CCR subgrade

3.4 Maximum CCR Inventory

257.102(b)(1)(iv) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.

The total amount of CCR that could be on site is estimated to be 2,523,500 cubic yards. This estimate is thought to be very conservative. Over the life of the power plant CCR has been sold to other contractors for beneficial use.

3.5 Maximum CCR Area

257.102(b)(1)(v) An estimate of the largest area of the CCR unit ever requiring a final cover as required by paragraph (d) of this section at any time during the CCR unit's active life.

The total area of the CCR Surface Impoundment that serves the Asbury Power Plant is approximately 106.4 acres. The CCR Surface Impoundment required the placement of a final cover system since this area will be closed by leaving the CCR in place.

3.6 Schedule

257.102(b)(1)(vi) A schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit closure. When preparing the written closure plan, if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified in paragraph (f)(1) of this section, the written closure plan must include the site-specific information, factors and considerations that would support any time extension sought under paragraph (f)(2) of this section.

Below is a discussion of the milestones of the closure of the CCR Surface Impoundment.

Milestones Required For the Closure of the CCR Surface Impoundment	
Milestone	Date
Written Closure Plan placed on webpage	October 17, 2016
Meet with MDNR to Discuss Specific Closure Requirements	December 2016
Obtain Topographic Mapping for Site	April 11, 2017
Complete Location Restriction Demonstration	October 17, 2018 Amended January 27, 2021
Retirement of Asbury Power Plant	March 1, 2020
Obtain Updated Topographic Mapping for Site	May 20, 2020

Cease Placing CCR in Surface Impoundment	April 11,2021
Notification of Intent to Close CCR Surface Impoundment	April 1, 2021
Commence Closure Activities	May 11, 2021
Pre-Bid Conference	April 13, 2022
Pre-Construction Conference	June 3, 2022
Construction Mobilization	June 6, 2023
Complete Final Cover Placement	January 23, 2023
Begin Post-Closure Care	January 24, 2023

4.0 NOTIFICATIONS

257.102(b)(2)(iii) The owner or operator has completed the written closure plan when the plan, including the certification required by paragraph (b)(4) of this section, has been placed in the facility’s operating record as required by § 257.105(i)(4).

Asbury posted the initial written closure plan to their website within 30 days of October 17, 2016. This original closure plan was amended on October 17, 2016, January 27, 2021, and again on March 21, 2022. The final closure plan was amended on February 22, 2023. The State Director was notified each time of the revision of this plan and subsequent placement on the website.

Asbury will post the amended written closure plan to their website within 30 days. In addition, the State Director will be notified of the completion of this amended plan and subsequent placement on the website.

257.102(g) No later than the date the owner or operator initiates closure of a CCR unit, the owner or operator must prepare a notification of intent to close a CCR unit. The notification must include the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority for the design of the final cover system as required by § 257.102(d)(3)(iii), if applicable. The owner or operator has completed the notification when it has been placed in the facility’s operating record as required by § 257.105(i)(7).

Asbury prepared a Notification of Intent to Close the CCR Surface Impoundments on April 1, 2021. A Notification of Closure of the CCR Surface Impoundment was completed on February 21, 2023. These certifications were prepared by a qualified professional engineer and placed in the facility’s operating record as required by § 257.105(i)(7).

Asbury will prepare a Deed Notation to indicate that the CCR Surface Impoundment property has been used as a CCR Unit and its use is restricted under Post-Closure care requirements. A notification will be prepared stating that a Deed Notation has been recorded.

257.102(i)(3)

Within 30 days of recording a notation on the deed to the property, the owner or operator must prepare a notification stating that the notation has been recorded. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by § 257.105(i)(9).by § 257.102(f)(3). The owner or operator has

completed the notification when it has been placed in the facility's operating record as required by § 257.105(i)(8).

5.0 CLOSURE PLAN AMENDMENT

257.102(b)(3) Amendment of a written closure plan.

(i) The owner or operator may amend the initial or any subsequent written closure plan developed pursuant to paragraph (b)(1) of this section at any time.

(ii) The owner or operator must amend the written closure plan whenever: (A) There is a change in the operation of the CCR unit that would substantially affect the written closure plan in effect; or (B) Before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

(iii) The owner or operator must amend the closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR unit, the owner or operator must amend the current closure plan no later than 30 days following the triggering event.

The proposed closure plan may be amended as required to provide a revised closure plan or a revised closure schedule. This amended closure plan should be posted to the website and the State Director shall be notified of the placement of the amended closure plan on the website. The closure plan has been amended to reflect the rule changes included in the following amendments to the CCR Rule: Amendments to the National Minimum Criteria (Phase One, Part One) to the CCR Rule; and A Holistic Approach to Closure Part A: Deadline to Initiate Closure and Enhancing Public Access to Information.

6.0 CERTIFICATION

257.102(b)(4) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written closure plan meets the requirements of this section.

The original closure plan was certified in Section 2.0 of that report. As required, any amendments to the original closure plan must also be certified by a qualified professional engineer. The amended closure plan has been certified in Section 2.0 of this report. Any further amendments to this amended closure plan must also be certified by a qualified professional engineer.

7.0 AMENDMENTS

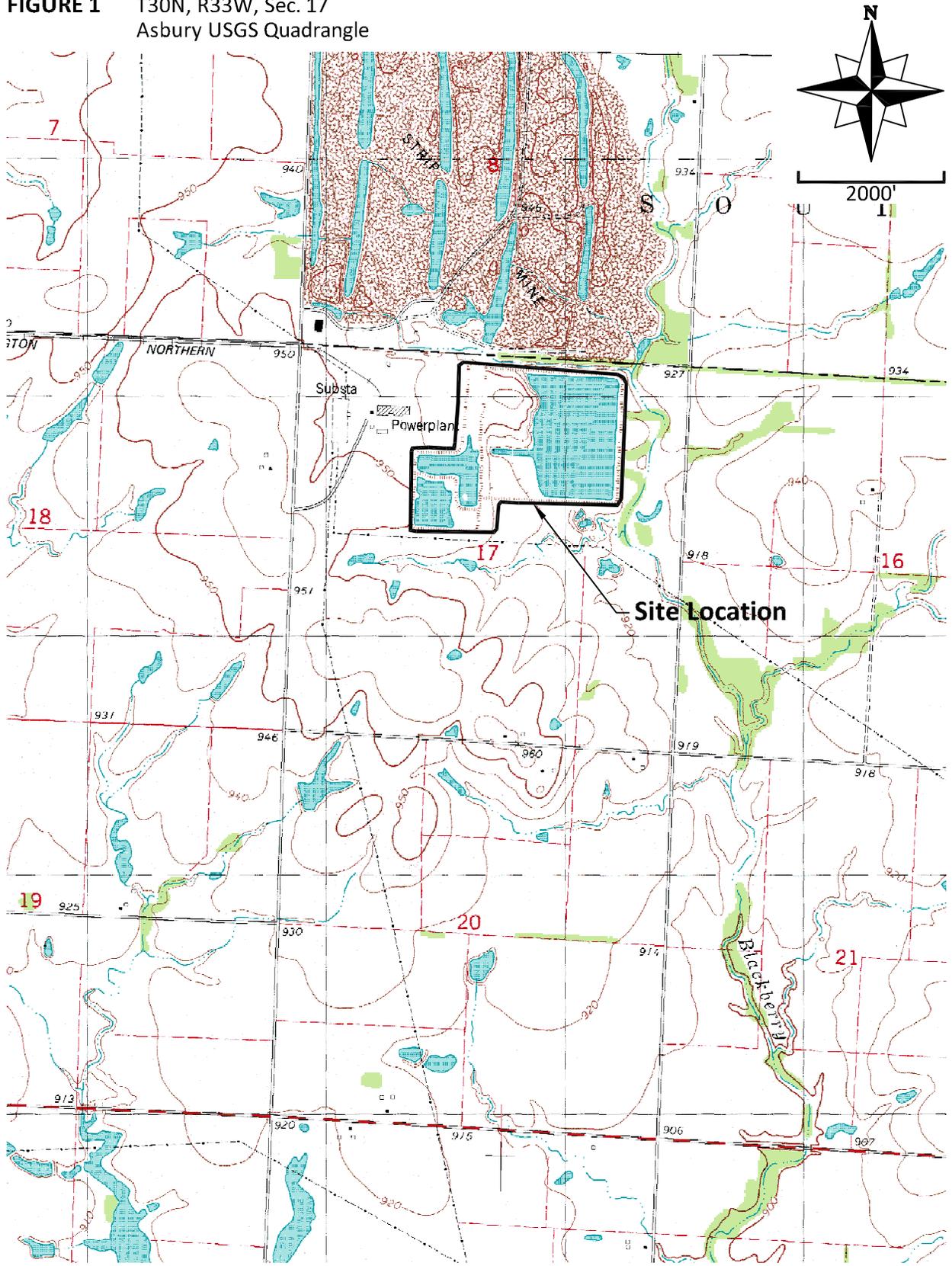
257.102(b)(3)(i) The owner or operator may amend the initial and any subsequent written closure plan developed pursuant to paragraph (b)(1) of this section at any time.

Asbury may amend the Closure Plan in the future as provided by 257.102(b)(3)(i). A record of all amendments to the plan will be tracked below:

Closure Plan Amendments			
Revision Number	Date	Revisions	By whom
0	10/17/2016	Initial Issuance	Midwest Environmental Consultants
1	11/16/2018	Update Plan to reflect revisions of Phase One, Part One and the Location Restrictions Issued 10/17/2018	Midwest Environmental Consultants
2	1/15/2021	Retirement of Asbury Power Plant and update to reflect revisions of A Holistic Approach to Closure Part A: Deadline to Initiate Closure and Enhancing Public Access to Information Issued 9/28/2020	Midwest Environmental Consultants
3	3/22/2022	Updated Closure Schedule and the chosen final cover system	Midwest Environmental Consultants
4	2/28/2023	Updated Closure Plan to reflect Completion of Final Cover Placement	Midwest Environmental Consultants

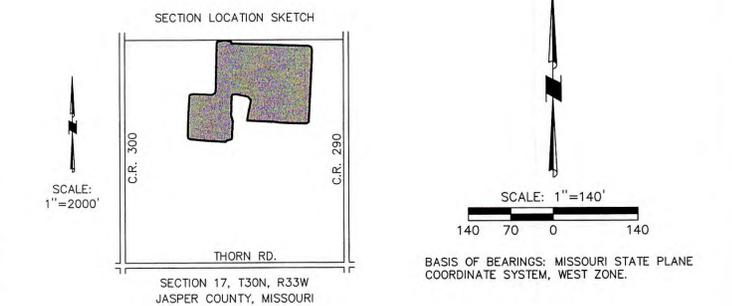
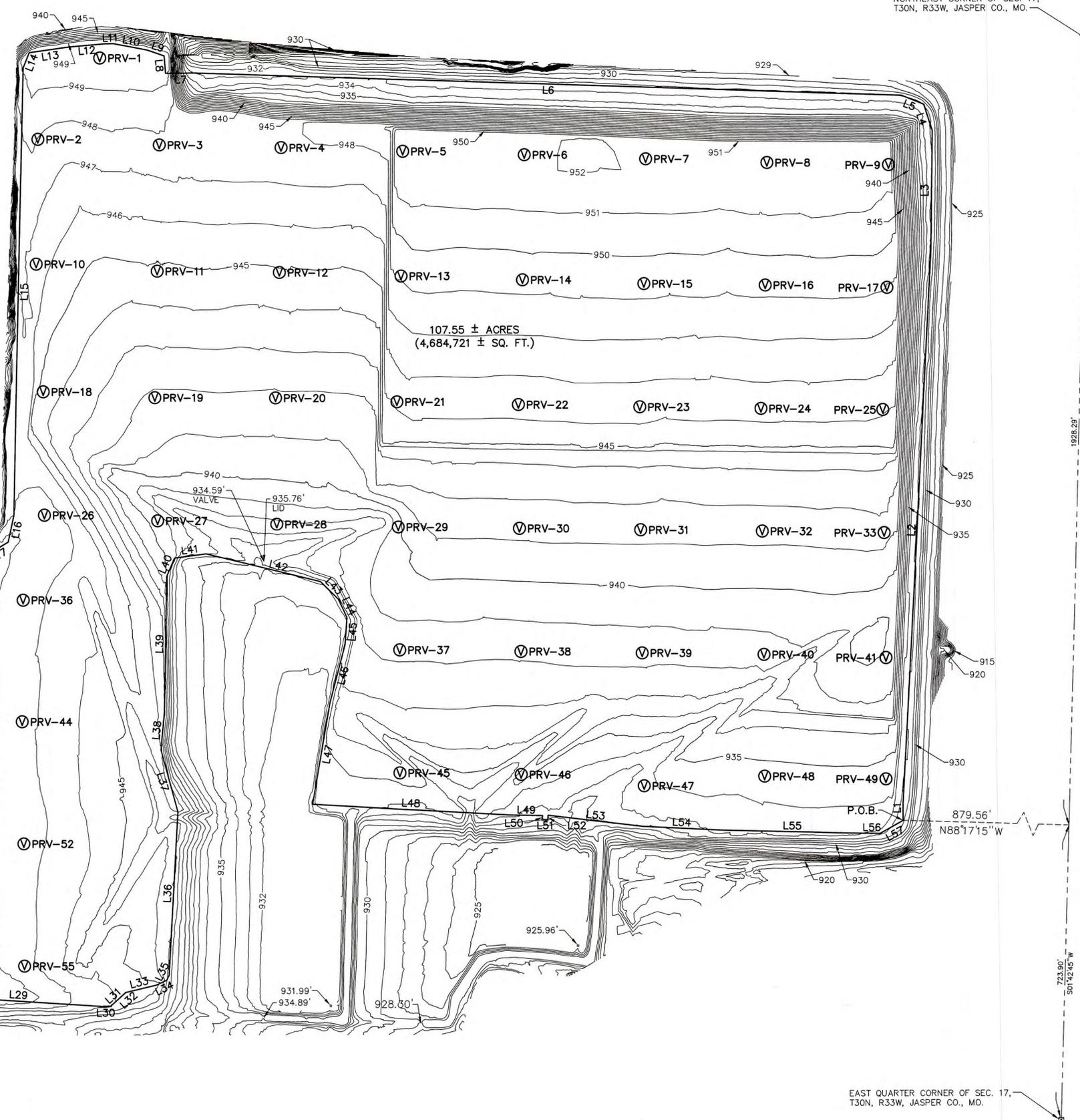
FIGURES

FIGURE 1 T30N, R33W, Sec. 17
Asbury USGS Quadrangle



LINE	BEARING	DISTANCE
L1	N00°04'13"E	42.99'
L2	N03°09'54"E	1360.23'
L3	N00°49'32"E	292.22'
L4	N17°24'47"W	67.84'
L5	N67°52'35"W	60.47'
L6	N88°00'56"W	1745.03'
L7	S89°32'35"W	74.15'
L8	N04°49'17"W	42.99'
L9	N70°49'51"W	44.83'
L10	N79°16'38"W	84.77'
L11	S89°12'39"W	19.77'
L12	S85°11'42"W	91.01'
L13	S82°10'46"W	98.49'
L14	S21°51'16"W	40.45'
L15	S01°27'47"W	1100.67'
L16	S12°17'52"W	67.92'
L17	S59°52'58"W	79.34'
L18	S85°32'41"W	28.69'
L19	N87°18'07"W	425.41'
L20	S80°10'55"W	58.28'
L21	S72°04'29"W	15.73'
L22	S04°21'46"W	24.64'
L23	S02°01'07"W	293.59'
L24	S01°54'54"W	405.07'
L25	S01°54'54"W	234.89'
L26	S07°53'16"E	61.25'
L27	S64°24'43"E	64.29'
L28	S84°53'04"E	397.31'
L29	S86°14'43"E	413.40'

LINE	BEARING	DISTANCE
L30	N89°00'17"E	22.85'
L31	N48°06'34"E	30.36'
L32	N48°04'26"E	20.00'
L33	N76°37'58"E	77.67'
L34	N65°06'00"E	28.82'
L35	N25°04'25"E	13.45'
L36	N03°20'48"E	402.50'
L37	N15°11'17"W	158.17'
L38	N05°32'07"E	90.75'
L39	N01°33'59"E	336.56'
L40	N23°25'28"E	48.41'
L41	N82°34'27"E	78.88'
L42	S76°24'07"E	290.24'
L43	S45°24'57"E	62.56'
L44	S24°34'58"E	49.57'
L45	S04°17'54"W	67.03'
L46	S14°50'33"W	146.01'
L47	S09°54'57"W	254.46'
L48	S86°47'51"E	488.94'
L49	S88°53'42"E	80.23'
L50	S05°46'01"W	9.19'
L51	S84°13'59"E	13.60'
L52	N05°46'01"E	11.25'
L53	S83°14'32"E	234.97'
L54	S87°13'12"E	192.96'
L55	S88°42'25"E	355.45'
L56	S89°17'14"E	39.11'
L57	N60°56'38"E	65.16'



EASEMENT DESCRIPTION:

A TRACT OF LAND BEING PART OF THE NORTH-HALF (N1/2) OF SECTION 17 TOWNSHIP 30 NORTH RANGE 33 WEST ALL IN JASPER COUNTY, MISSOURI, PARENT TRACT BEING RECORDED IN BOOK 1158 AT PAGE 1930 AND BOOK 1085 AT PAGE 613 IN THE JASPER COUNTY RECORDER'S OFFICE IN CARTHAGE, MISSOURI, BEING DESCRIBED MORE FULLY AS FOLLOWS:

COMMENCING AT A FOUND IRON PIN AT THE NORTHEAST CORNER OF SAID SECTION 17, A FOUND SURVEY MONUMENT IN PLACE;

THENCE S01°42'45"W A DISTANCE OF 1928.29 FEET ALONG THE EAST LINE OF SAID NORTH-HALF (N1/2) OF SECTION 17;

THENCE N88°17'15"W LEAVING SAID EAST LINE A DISTANCE OF 879.56 FEET TO THE POINT OF BEGINNING;

THENCE N00°04'13"E A DISTANCE OF 42.99 FEET;

THENCE N03°09'54"E A DISTANCE OF 1360.23 FEET;

THENCE N00°49'32"E A DISTANCE OF 292.22 FEET;

THENCE N17°24'47"W A DISTANCE OF 67.84 FEET;

THENCE N67°52'35"W A DISTANCE OF 60.47 FEET;

THENCE N88°00'56"W A DISTANCE OF 1745.03 FEET;

THENCE S89°32'35"W A DISTANCE OF 74.15 FEET;

THENCE N04°49'17"W A DISTANCE OF 42.99 FEET;

THENCE N70°49'51"W A DISTANCE OF 44.83 FEET;

THENCE N79°16'38"W A DISTANCE OF 84.77 FEET;

THENCE S89°12'39"W A DISTANCE OF 19.77 FEET;

THENCE S85°11'42"W A DISTANCE OF 91.01 FEET;

THENCE S82°10'46"W A DISTANCE OF 98.49 FEET;

THENCE S21°51'16"W A DISTANCE OF 40.45 FEET;

THENCE S01°27'47"W A DISTANCE OF 1100.67 FEET;

THENCE S12°17'52"W A DISTANCE OF 67.92 FEET;

THENCE S59°52'58"W A DISTANCE OF 79.34 FEET;

THENCE S85°32'41"W A DISTANCE OF 28.69 FEET;

THENCE N87°18'07"W A DISTANCE OF 425.41 FEET;

THENCE S80°10'55"W A DISTANCE OF 58.28 FEET;

THENCE S72°04'29"W A DISTANCE OF 15.73 FEET;

THENCE S22°45'34"W A DISTANCE OF 24.64 FEET;

THENCE S04°21'46"W A DISTANCE OF 293.59 FEET;

THENCE S02°01'07"W A DISTANCE OF 405.07 FEET;

THENCE S01°54'54"W A DISTANCE OF 234.89 FEET;

THENCE S07°53'16"E A DISTANCE OF 61.25 FEET;

THENCE S64°24'43"E A DISTANCE OF 64.29 FEET;

THENCE S84°53'04"E A DISTANCE OF 397.31 FEET;

THENCE S86°14'43"E A DISTANCE OF 413.40 FEET;

THENCE N89°00'17"E A DISTANCE OF 22.85 FEET;

THENCE N48°06'34"E A DISTANCE OF 30.36 FEET;

THENCE N48°04'26"E A DISTANCE OF 20.00 FEET;

THENCE N76°37'58"E A DISTANCE OF 77.67 FEET;

THENCE N65°06'00"E A DISTANCE OF 28.82 FEET;

THENCE N25°04'25"E A DISTANCE OF 13.45 FEET;

THENCE N03°20'48"E A DISTANCE OF 402.50 FEET;

THENCE N15°11'17"W A DISTANCE OF 158.17 FEET;

THENCE N05°32'07"E A DISTANCE OF 90.75 FEET;

THENCE N01°33'59"E A DISTANCE OF 336.56 FEET;

THENCE N23°25'28"E A DISTANCE OF 48.41 FEET;

THENCE N82°34'27"E A DISTANCE OF 78.88 FEET;

THENCE S76°24'07"E A DISTANCE OF 290.24 FEET;

THENCE S45°24'57"E A DISTANCE OF 62.56 FEET;

THENCE S24°34'58"E A DISTANCE OF 49.57 FEET;

THENCE S04°17'54"W A DISTANCE OF 67.03 FEET;

THENCE S14°50'33"W A DISTANCE OF 146.01 FEET;

THENCE S09°54'57"W A DISTANCE OF 254.46 FEET;

THENCE S86°47'51"E A DISTANCE OF 488.94 FEET;

THENCE S88°53'42"E A DISTANCE OF 80.23 FEET;

THENCE S05°46'01"W A DISTANCE OF 9.19 FEET;

THENCE S84°13'59"E A DISTANCE OF 13.60 FEET;

THENCE N05°46'01"E A DISTANCE OF 11.25 FEET;

THENCE S83°14'32"E A DISTANCE OF 234.97 FEET;

THENCE S87°13'12"E A DISTANCE OF 192.96 FEET;

THENCE S88°42'25"E A DISTANCE OF 355.45 FEET;

THENCE S89°17'14"E A DISTANCE OF 39.11 FEET;

THENCE N60°56'38"E A DISTANCE OF 65.16 FEET TO THE POINT OF BEGINNING.

CONTAINING 107.55 ACRES (4,684,721 SQUARE FEET) MORE OR LESS.

BASIS OF BEARINGS: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE, GRID NORTH.

SURVEYOR'S DECLARATION:

ON THE 27TH DAY OF FEBRUARY, 2023, THE HEREOF DESCRIBED EASEMENT WAS MADE UNDER MY SUPERVISION AND, TO THE BEST OF MY KNOWLEDGE, CONDITIONS ARE AS SHOWN.

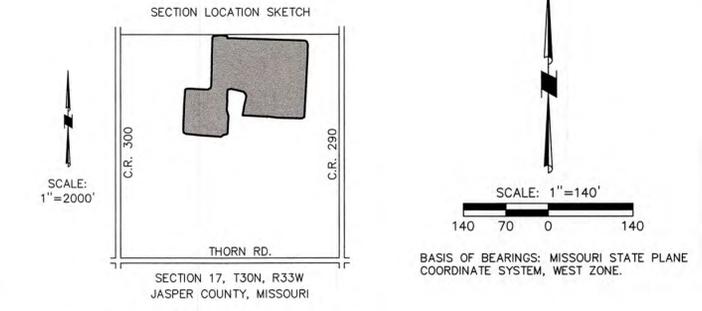
ALL COPIES THAT DO NOT BEAR AN ORIGINAL SEAL AND SIGNATURE MAY HAVE BEEN ALTERED.

THE ACCURACY STANDARD THAT APPLIES TO THIS SURVEY IS FOR TYPE URBAN PROPERTY. (SURVEYOR DOES NOT CERTIFY AS TO ACTUAL USE OF PROPERTY)



LINE TABLE	
L1	42.99' N00°04'13"E
L2	1360.23' N03°09'54"E
L3	292.22' N00°49'32"E
L4	67.84' N17°24'47"W
L5	60.47' N67°52'35"W
L6	1745.03' N88°00'56"W
L7	74.15' S89°32'35"W
L8	42.99' N04°49'17"W
L9	44.83' N70°49'51"W
L10	84.77' N79°16'38"W
L11	19.77' S89°12'39"W
L12	91.01' S85°11'42"W
L13	98.49' S82°10'46"W
L14	40.45' S21°51'16"W
L15	1100.67' S01°27'47"W
L16	67.92' S12°17'52"W
L17	79.34' S59°52'58"W
L18	28.69' S85°32'41"W
L19	425.41' N87°18'07"W
L20	58.28' S80°10'55"W
L21	15.73' S72°04'29"W
L22	24.64' S22°45'34"W
L23	293.59' S04°21'46"W
L24	405.07' S02°01'07"W
L25	234.89' S01°54'54"W
L26	61.25' S07°53'16"E
L27	64.29' S64°24'43"E
L28	397.31' S84°53'04"E
L29	413.40' S86°14'43"E

LINE TABLE	
L30	22.85' N89°00'17"E
L31	30.36' N48°06'34"E
L32	20.00' N48°04'26"E
L33	77.67' N76°37'58"E
L34	28.82' N65°06'00"E
L35	13.45' N25°04'25"E
L36	402.50' N03°20'48"E
L37	158.17' N15°11'17"W
L38	90.75' N05°32'07"E
L39	336.56' N01°13'59"E
L40	48.41' N23°25'28"E
L41	78.88' N82°34'27"E
L42	290.24' S76°24'07"E
L43	62.56' S45°24'57"E
L44	49.57' S24°34'58"E
L45	67.03' S04°17'54"W
L46	146.01' S14°50'33"W
L47	254.46' S09°54'57"W
L48	488.94' S86°47'51"E
L49	80.23' S88°53'42"E
L50	9.19' S05°46'01"W
L51	13.60' S84°13'59"E
L52	11.25' N05°46'01"E
L53	234.97' S83°14'32"E
L54	192.96' S87°13'12"E
L55	355.45' S88°42'25"E
L56	39.11' S89°17'14"E
L57	65.16' N60°56'38"E



EASEMENT DESCRIPTION:
 A TRACT OF LAND BEING PART OF THE NORTH-HALF (N1/2) OF SECTION 17 TOWNSHIP 30 NORTH RANGE 33 WEST ALL IN JASPER COUNTY, MISSOURI. PARENT TRACT BEING RECORDED IN BOOK 1158 AT PAGE 1930 AND BOOK 1085 AT PAGE 613 IN THE JASPER COUNTY RECORDER'S OFFICE IN CARTHAGE, MISSOURI. BEING DESCRIBED MORE FULLY AS FOLLOWS:

COMMENCING AT A FOUND IRON PIN AT THE NORTHEAST CORNER OF SAID SECTION 17, A FOUND SURVEY MONUMENT IN PLACE;
 THENCE S01°42'45"W A DISTANCE OF 1928.29 FEET ALONG THE EAST LINE OF SAID NORTH-HALF (N1/2) OF SECTION 17;
 THENCE N88°17'15"W LEAVING SAID EAST LINE A DISTANCE OF 879.56 FEET TO THE POINT OF BEGINNING;
 THENCE N00°04'13"E A DISTANCE OF 42.99 FEET;
 THENCE N03°09'54"E A DISTANCE OF 1360.23 FEET;
 THENCE N00°49'32"E A DISTANCE OF 292.22 FEET;
 THENCE N17°24'47"W A DISTANCE OF 67.84 FEET;
 THENCE N67°52'35"W A DISTANCE OF 60.47 FEET;
 THENCE N88°00'56"W A DISTANCE OF 1745.03 FEET;
 THENCE S89°32'35"W A DISTANCE OF 74.15 FEET;
 THENCE N04°49'17"W A DISTANCE OF 42.99 FEET;
 THENCE N70°49'51"W A DISTANCE OF 44.83 FEET;
 THENCE N79°16'38"W A DISTANCE OF 84.77 FEET;
 THENCE S89°12'39"W A DISTANCE OF 19.77 FEET;
 THENCE S85°11'42"W A DISTANCE OF 91.01 FEET;
 THENCE S82°10'46"W A DISTANCE OF 98.49 FEET;
 THENCE S21°51'16"W A DISTANCE OF 40.45 FEET;
 THENCE S01°27'47"W A DISTANCE OF 1100.67 FEET;
 THENCE S12°17'52"W A DISTANCE OF 67.92 FEET;
 THENCE S59°52'58"W A DISTANCE OF 79.34 FEET;
 THENCE S85°32'41"W A DISTANCE OF 28.69 FEET;
 THENCE N87°18'07"W A DISTANCE OF 425.41 FEET;
 THENCE S80°10'55"W A DISTANCE OF 58.28 FEET;
 THENCE S72°04'29"W A DISTANCE OF 15.73 FEET;
 THENCE S22°45'34"W A DISTANCE OF 24.64 FEET;
 THENCE S04°21'46"W A DISTANCE OF 293.59 FEET;
 THENCE S02°01'07"W A DISTANCE OF 405.07 FEET;
 THENCE S01°54'54"W A DISTANCE OF 234.89 FEET;
 THENCE S07°53'16"E A DISTANCE OF 61.25 FEET;
 THENCE S64°24'43"E A DISTANCE OF 64.29 FEET;
 THENCE S84°53'04"E A DISTANCE OF 397.31 FEET;
 THENCE S86°14'43"E A DISTANCE OF 413.40 FEET;
 THENCE N89°00'17"E A DISTANCE OF 22.85 FEET;
 THENCE N48°06'34"E A DISTANCE OF 30.36 FEET;
 THENCE N48°04'26"E A DISTANCE OF 20.00 FEET;
 THENCE N76°37'58"E A DISTANCE OF 77.67 FEET;
 THENCE N65°06'00"E A DISTANCE OF 28.82 FEET;
 THENCE N25°04'25"E A DISTANCE OF 13.45 FEET;
 THENCE N03°20'48"E A DISTANCE OF 402.50 FEET;
 THENCE N15°11'17"W A DISTANCE OF 158.17 FEET;
 THENCE N05°32'07"E A DISTANCE OF 90.75 FEET;
 THENCE N01°13'59"E A DISTANCE OF 336.56 FEET;
 THENCE N23°25'28"E A DISTANCE OF 48.41 FEET;
 THENCE N82°34'27"E A DISTANCE OF 78.88 FEET;
 THENCE S76°24'07"E A DISTANCE OF 290.24 FEET;
 THENCE S45°24'57"E A DISTANCE OF 62.56 FEET;
 THENCE S24°34'58"E A DISTANCE OF 49.57 FEET;
 THENCE S04°17'54"W A DISTANCE OF 67.03 FEET;
 THENCE S14°50'33"W A DISTANCE OF 146.01 FEET;
 THENCE S09°54'57"W A DISTANCE OF 254.46 FEET;
 THENCE S86°47'51"E A DISTANCE OF 488.94 FEET;
 THENCE S88°53'42"E A DISTANCE OF 80.23 FEET;
 THENCE S05°46'01"W A DISTANCE OF 9.19 FEET;
 THENCE S84°13'59"E A DISTANCE OF 13.60 FEET;
 THENCE N05°46'01"E A DISTANCE OF 11.25 FEET;
 THENCE S83°14'32"E A DISTANCE OF 234.97 FEET;
 THENCE S87°13'12"E A DISTANCE OF 192.96 FEET;
 THENCE S88°42'25"E A DISTANCE OF 355.45 FEET;
 THENCE S89°17'14"E A DISTANCE OF 39.11 FEET;
 THENCE N60°56'38"E A DISTANCE OF 65.16 FEET TO THE POINT OF BEGINNING.

CONTAINING 107.55 ACRES (4,684,721 SQUARE FEET) MORE OR LESS.
 BASIS OF BEARINGS: MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE, GRID NORTH.

SURVEYOR'S DECLARATION:
 ON THE 27TH DAY OF FEBRUARY, 2023, THE HEREOF DESCRIBED EASEMENT WAS MADE UNDER MY SUPERVISION AND, TO THE BEST OF MY KNOWLEDGE, CONDITIONS ARE AS SHOWN.

ALL COPIES THAT DO NOT BEAR AN ORIGINAL SEAL AND SIGNATURE MAY HAVE BEEN ALTERED.

THE ACCURACY STANDARD THAT APPLIES TO THIS SURVEY IS FOR TYPE URBAN PROPERTY. (SURVEYOR DOES NOT CERTIFY AS TO ACTUAL USE OF PROPERTY)



ALLGEIER, MARTIN & ASSOCIATES
 BY DARIN D. CARPENTER (AGENT)
 SIGNATURE IN BLUE INK
 SEAL IN RED INK
 Darin D. Carpenter
 DARIN D. CARPENTER
 LS 2006000168