



EXHIBIT C

ISSUE STATEMENT: PUBLIC HEARING AND RECOMMENDATION TO THE CITY COUNCIL CONCERNING AN ANNEXATION OF APPROXIMATELY 2.23 ACRES OF REAL PROPERTY GENERALLY LOCATED AT THE NORTHWEST CORNER OF THE SOUTH GREGG ROAD AND WEST GLEN OAKS DRIVE INTERSECTION AND ZONING THE PROPERTY TO THE R-1 ZONING DISTRICT.

DATE: MARCH 6, 2023

SUBMITTED BY: IVAN-CO, INC

PRESENTED BY: PLANNING AND DEVELOPMENT DEPARTMENT

Background

The owners of approximately 2.23 acres located at 601 South Gregg Road have submitted a voluntary petition for annexation to the City of Nixa and have requested Single-Family Residential (R-1) zoning.

The subject property is lots 1-4 of the Spence Addition to Glen Oaks Estates. Originally platted and recorded in 1987. Each lot in the Spence addition is approximately 0.56 acres. The property is compact and contiguous to the Nixa City Limits. Current Nixa City Limits are along the east, south and west property lines of the subject property.

Analysis

Land Use

The subject property is currently vacant except for an old well house. Surrounding land uses are single-family residential to the North, South, West, and East. The Future Land Use Designation Map adopted as part of the current Comprehensive Plan, indicates this area should be used for single-family residential.

The previous single-family structure that was located on lot 4 was demolished by the current owner in early 2022.

Transportation

The subject property is served by West Glen Oaks Drive (local). The city will require an additional 10' of right-of-way along the north side of West Glen Oaks Drive to comply with local street right-of-way requirements.

Municipal Utilities (Water, Wastewater, Electric)

The subject property has immediate access to municipal water service via a 6" water main on the south side of West Glen Oaks Drive. The water main has adequate pressure to serve the residential lots. Service lines and water meter pits will need to be provided for each lot.



Sanitary sewer is located along the east side of South Gregg Road. The main has adequate capacity to serve the proposed residential use.

An outside electric co-op provided electricity to the residence that was on 601 North Gregg Road. The property owner can choose between using the previous service provider, or extending Nixa electric service to the property. The cost of extending Nixa electric service will be incurred by the property owner.

Stormwater Management

The development of the site will be required to conform to the City's adopted stormwater management regulations. The site contains an apparent sinkhole (shown on map enclosed with this exhibit). The presence of a sinkhole will require development and stormwater management to conform to the city's regulations concerning development near karst topography. These regulations address both flooding and water quality concerns.


Other Public Services

The proposed land use may add traffic and patronage to the City's jurisdiction, which will impact a variety of public services in proportion to these increases. Ideally, the impact of these additional patrons will produce economies sufficient to cover additional costs. The City's development regulations will require standards to be met to ensure sufficient access to the site for emergency response, rescue, and fire suppression. The land subject to annexation is within the current service areas for the Nixa Fire Protection District and the Nixa Police Department.

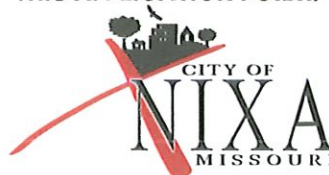
Recommendation

The property is compact and contiguous to current City Limits and Staff recommends the approval of this request.

ANNEXATION AND REZONE APPLICATION

Date of Application 01/24/2023		File No. ANX 23-001	
Applicant Name Volodymyr Balyk, President of Ivan - Co, Inc.			
Mailing Address - Street Name/Number (Applicant) 1472 S. Oak Hill Ct.		City Nixa	State MO
		Zip Code 65714	
Applicant Phone Number (Contact Viktor Gossen) - 417-421-0705		Applicant Email Address bestwayshome@gmail.com	
General Location of Site Subject to this Application (street address preferred) 601 S. Gregg Rd., Nixa, MO 65714			
REQUESTING ZONING DISTRICT (if multiple, legal descriptions must be provided for each)			
<input type="checkbox"/> Agricultural (AG)	<input checked="" type="checkbox"/> Single-Family Residential (R-1)	<input type="checkbox"/> Two-Family Residential (R-4)	<input type="checkbox"/> Low-Density Multi-Family (R-5)
<input type="checkbox"/> High-Density Multi-Family (R-3)	<input type="checkbox"/> Neighborhood Commercial (NC)	<input type="checkbox"/> Center City (CC)	<input type="checkbox"/> Transitional Office (O)
<input type="checkbox"/> General Commercial (GC)	<input type="checkbox"/> Highway Commercial (HC)	<input type="checkbox"/> Light Industrial (M1)	<input type="checkbox"/> Heavy Industrial (M-2)
<input type="checkbox"/> Modular Home Sub. (R-MHS)	<input type="checkbox"/> Manufactured Home Comm. (R-MHC)	<input type="checkbox"/> Planned Unit Development (PUD)*	<i>*if PUD, complete separate PUD application form</i>
CERTIFICATION OF APPLICATION			
I/We, the undersigned applicant being either the owner of the subject property or a duly authorized representative of such owner(s), do attest to the truth and accuracy of the information provided with this application. I also hereby agree to reimburse the City for all costs associated with the provision of notice of public hearings necessitated by this application, including costs for certified mailing and publication in a local newspaper.			
Applicant Signature 		Date 02/07/2023	
Received by		Date	
Fees Collected	Date Paid	Receipt No.	

SEE REVERSE FOR CHECKLIST OF OTHER REQUIRED DOCUMENTS THAT MUST ACCOMPANY THIS APPLICATION FORM.



REQUIRED DOCUMENTS TO BE SUBMITTED WITH APPLICATION	
<i>(all digital submittals sent to planning@nixa.com)</i>	
<input checked="" type="checkbox"/>	List of owners of all the fee interests of record (incl. Name + Mailing Address)
<input checked="" type="checkbox"/>	Signed and Notarized Petition for Annexation (signed by all owners of all tracts)
<input checked="" type="checkbox"/>	Legal Description(s) for all area(s) to be annexed and zoned (Microsoft Word format)
<input checked="" type="checkbox"/>	Boundary Survey of all area(s) to be annexed and zoned
<input checked="" type="checkbox"/>	- Total Acreage
<input checked="" type="checkbox"/>	- Location of all proposed zoning boundaries
<input checked="" type="checkbox"/>	- Location and dimension of all proposed lot lines
<input checked="" type="checkbox"/>	- Legal Description of property
<input checked="" type="checkbox"/>	- Names and boundaries of adjacent subdivisions and streets
<input checked="" type="checkbox"/>	- Location and description of monuments
<input checked="" type="checkbox"/>	- Bearings, distances, chords, radii, central angles, tangent links, etc.)
<input checked="" type="checkbox"/>	- Location and width of existing street right-of-way
<input checked="" type="checkbox"/>	- Location and width of existing easements and their type
<input checked="" type="checkbox"/>	- Existing location and type of existing buildings and structures
<input checked="" type="checkbox"/>	- All areas to be dedicated for public use (easement, ROW, etc.)
<input checked="" type="checkbox"/>	- Payment of application fee in the amount of \$500.00

TYPICAL PROCESS AND TIMELINE		
Preparation Phase	Application received for staff review and preparation for hearings.	~30 days
	Provide notice of hearing for publication in a local newspaper at least 15 days prior to hearing date.	
	Provide notice of hearing to all owners of real estate within 185 of subject property.	
	Posting of notice of public hearing sign on the subject property.	
Hearing Phase	Public held before Planning & Zoning Commission.	~20 days
	Planning & Zoning Commission makes Finding of Facts and recommendation to City Council.	
	First Reading of Ordinance by City Council.	
	Second Reading of Ordinance and Final Passage by City Council.	

For questions concerning this application or the process described above, please contact the City of Nixa's Department of Planning and Development at (417) 725-5850.

NIXA.COM





PO Box 395, 715 W. Mt. Vernon, Nixa, MO 65714
(Phone) 417-725-5850 (Fax) 417-724-5750

ANNEXATION PETITION

I/We, the undersigned Volodymyr Balyk, President of Ivan - Co, Inc.,

Owner(s) Name(s) typed or printed

hereinafter referred to as the Petitioner, petitions the City Council of the City of Nixa, Missouri, to annex the following described unincorporated area which is contiguous and compact to the existing corporate limits of the City of Nixa, Missouri:

Petitioner states that he/she is the owner in fee of all interests in the said tract of real property and requests that the City Council hold a public hearing not fewer than fourteen (14) or more than one-hundred twenty (120) days after receipt of this Petition and that said hearing be held not fewer than seven (7) days after notice of the hearing is published in a newspaper of general circulation, qualified to publish legal matters. Further, should the City Council determine that the annexation reasonable and necessary to the property development of Nixa, Missouri has the ability to furnish normal municipal services to the area to be annexed within a reasonable time, Petitioner requests that said City Council thereafter annex the territory by ordinance without further action.



PO Box 395, 715 W. Mt. Vernon, Nixa, MO 65714
(Phone) 417-725-5850 (Fax) 417-724-5750

Should written objection to the proposed annexation be filed with the City Council not later than fourteen (14) days after said public hearing, this Petitioner than requests the City Council thereafter to petition the Circuit Court of Christian County, Missouri, for a declaratory judgment as to the reasonableness of such annexation.

Owner Signature

Owner Signature

STATE OF MISSOURI
COUNTY OF CHRISTIAN

On this 6th day of February, 2023 before me personally appeared Volodymyr Balyk to me known to be the person described in and who executed the foregoing instrument and acknowledges that he executed the same as his free act and deed and that the facts stated therein are true to the best of his knowledge and belief.

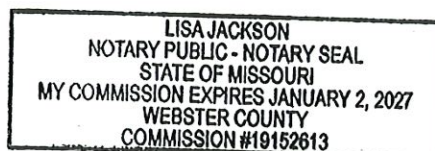
In testimony whereof, I have hereunto set my hand and affixed my official seal the date and year first above written.

Notary Public

My Commission Expires: 01/02/2027

Applicant Name Volodymyr Balyk Phone: 417-421-0705 Contact Viktor Gossen

Applicant Mailing Address: bestwayshome@gmail.com



DESCRIPTION:

ALL OF LOTS ONE (1), TWO (2), THREE (3) AND FOUR (4)
OF SPENCE ADDITION TO GLEN OAKS ESTATES, A
SUBDIVISION IN CHRISTIAN COUNTY, MISSOURI
ACCORDING TO THE RECORDED PLAT THEREOF IN
PLAT BOOK G AT PAGE 153.

SUBJECT TO EASEMENTS, COVENANTS AND
RESTRICTIONS OF RECORD.



ANX 23-001

W CARE AVE

W VERNAL LN

W STERLING CT

W VINEYARD DR

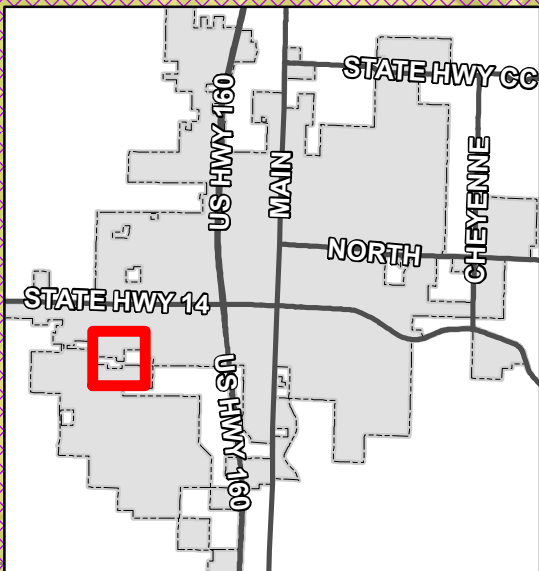
Proposed
Annexation

W GLEN OAKS DR

SPARRISH LN

W JENDEL ST

W BATES DR



Lots

Zoning

Single-Family

High Density Multi-Family

Two-Family

**SINKHOLE EVALUATION
FOR
601 S. GREGG ROAD
NIXA, MISSOURI**

Prepared for:

Ivan-Co
1472 Oak Hill Ct.
Nixa, MO 65714

Prepared by:



- Geotechnical Services
- Environmental Services
- Material Testing Services

Springfield, MO
4168 W. Kearney Springfield, MO 65803
Call 417.864.6000 Fax 417.864.6004
www.ppimo.com

PPI Project Number: 284276

December 6, 2022

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1.0 INTRODUCTION

Palmerton & Parrish, Inc. (PPI) was retained by Ivan-Co to perform a sinkhole evaluation for a vacant lot located at 601 S. Gregg Road in Nixa, Christian County, Missouri. The results of that evaluation are presented in the following pages. This sinkhole evaluation was performed in general accordance with Chapter 105, Article III of the Nixa City Code. See Figure 1 in Appendix I for the location of the subject property on a recent aerial photograph. Currently the site is mostly vacant, but historically the site had a residential structure with outbuildings.

2.0 SITE INVESTIGATION

The following public records were reviewed in the course of this evaluation:

- *Nixa 7.5 Minute Topographic Quadrangle*, 1960 (Photorevised 1970 and 1975), United States Geological Survey
- *Soil Survey of Christian County, Missouri*, 1982, United States Department of Agriculture
- *Porter, J., Thomson, K.C., 1975, Geology, Geomorphology, and Karst Development in the Nixa Karst Area, Southwestern Missouri, Southwest Missouri State University, Department of Geography and Geology, Springfield, MO*
- Miller D. E. and Vandike, J. E., 1997, *Groundwater Resources of Missouri: Missouri Department of Natural Resources State Water Plan Series, Volume II*, Missouri Department of Natural Resources, Rolla, Missouri
- *GeoSTRAT Sinkhole Points*, GIS Data Layer for Google Earth, 2021, Missouri Department of Natural Resources, Missouri Geological Survey, Rolla, Missouri
- Christian County, Missouri, Online GIS Map

The *Nixa 7.5 Minute Topographic Quadrangle*, *Soil Survey of Christian County, Missouri*, *Geology, Geomorphology, and Karst Development in the Nixa Karst Area*, *GeoSTRAT Sinkhole Points*, and Christian County online GIS map show one sinkhole covering a large portion of the west end of the property and extending onto surrounding properties.

PPI generated a 1-foot topographic map of the subject property using LiDAR elevation data collected in Christian County prior to 2018. This topographic map indicated a sinkhole was present in the west end of the property.

The subject property was visited on October 26, 2022 to visually observe any sinkholes or other karst features that may exist on the site. One sinkhole was observed in the west section of the

property that extended onto north and west adjacent properties. This sinkhole is a relatively large solution sinkhole. While no sinkhole eye was observed during the site visit, there were a series of shallow depressions in the center of the floor of the sinkhole.

See Figure 1 in Appendix I for a topographic map and aerial photograph of the property. Figure 2 shows the sinkhole drainage area.

3.0 SITE DESCRIPTION

3.1 General Geology and Soils

Bedrock underlying the subject property consists of the Mississippian age Burlington-Keokuk formation, a coarsely crystalline limestone containing minor amounts of interbedded chert. The Burlington-Keokuk limestone crops out extensively in the general area of the site property. Weathering of the formation produces a rough, irregular, and broken surface. Deep weathering along vertical fractures creates features described as cutters and pinnacles, a highly irregular interface between the soil horizon and the bedrock. The Burlington-Keokuk limestone is extremely susceptible to dissolution and development of karst features. Numerous sinkholes are present in the uplands underlain by the formation. The nearest known fault to the subject property is the Sac River fault located approximately one mile to the northeast. Fracture trends in the area of the subject property generally trend northeast-southwest and northwest-southeast.

Soils overlying the Burlington-Keokuk formation consist of cherty residuum typically classifying as CL or CH according to the Unified Soil Classification System.

3.2 General Hydrogeology

The site is located in the Springfield Plateau groundwater province. Hydrogeologic units in the site area from the uppermost to lowermost include the Springfield Plateau aquifer, Ozark confining unit, and the Ozark aquifer. In the site area the Springfield Plateau aquifer consists of the Mississippian age Burlington-Keokuk formation, Elsey-Reeds Spring formations, and Pierson limestone. The Springfield Plateau aquifer is an unconfined aquifer recharged by precipitation. Underlying the Springfield Plateau aquifer is the Ozark confining unit, a series of Mississippian age low-permeability formations that greatly restrict the vertical movement of water. The Ozark confining unit consists of the Northview formation, the Compton limestone, and locally the Pierson limestone. Underlying the Ozark confining unit is the Ozark aquifer, which is a confined aquifer consisting of Cambrian and Ordovician age

dolomites and sandstones. This aquifer is the most prolific aquifer in southwest Missouri and is the source of potable groundwater for most domestic and public water supplies outside of the City of Springfield. Because of the sensitivity of the Springfield Plateau aquifer to surface contamination sources, the State of Missouri has prohibited the construction of water wells into the aquifer in Greene and northern Christian counties. According to 10 CSR 23-3.100 water wells constructed in Sensitive Area C shall be drilled and cased through the Springfield Plateau aquifer and Ozark confining unit and be completed in the Ozark aquifer. A water well was observed inside a well house on the property.

3.3 Site Geomorphology

The subject property is located within the Springfield Plateau subprovince of the Ozark Plateaus physiographic province. The landscape is characterized by rolling hills, meandering streams, and karst features such as sinkholes, caves, and springs.

The LiDAR surveyed area on the subject property has a total relief of approximately 26 feet, with the lowest elevation of approximately 1289 at the bottom of the sinkhole and the highest elevation of approximately 1315 feet at the northeast property corner. Runoff on the subject property is mostly into the on-site sinkhole with a portion of the southeast corner of the property draining to the southeast.

3.4 Land Cover

Currently the property is mostly grass covered with some trees.

4.0 FLOODING EVALUATION

A sinkhole flooding evaluation was performed using the methods developed by the Natural Resources Conservation Service (NRCS) in *TR-55, Urban Hydrology for Small Watersheds* and using HEC Hydrologic Modeling System (HMS) software.

The geometry of the sinkhole was modeled using a 1-foot contour map of the subject property, prepared by PPI using LiDAR elevation data from Christian County. See Figure 2 for the 1-foot contour map of the sinkhole and the sinkhole drainage area. Based on the topographic survey of the subject property, the sinkhole has a low point elevation at approximately 1289 and an overflow point in the sinkhole watershed at an elevation of approximately 1305.5.

The storage capacity of the sinkhole was determined by measuring the area within each contour line, calculating the volume between the contour lines, then adding the volumes. The volume between contour lines was calculated using the following equation:

$$V = 1/3H(A_1 + A_2 + (A_1 \times A_2)^{1/2})$$

Where V is the volume, H is the difference in height between the two successive contours, A_1 is the area of the higher elevation contour, and A_2 is the area of the lower elevation contour. The approximate volume of the sinkhole from the bottom of the sinkhole to elevation 1305 is approximately 28 acre-feet.

Runoff was estimated for a 100 year, 24-hour event, which totals 8.18 inches of rainfall. In the WinTR-55 model different land cover types are assigned to areas within the sinkhole watershed. These land cover types have differing rates of water infiltration and runoff. Land use for the runoff model was estimated conservatively using a curve number for ½ acre residential lots and hydrologic group D. See Figure 2 for an aerial photograph with an outline of the sinkhole watershed. The model included the subject property being developed into ½ acre lots.

The curve number, rainfall rate, and sinkhole volume were entered into HEC-HMS to estimate the resulting flood elevation. The flood model assumed no outflow through the bottom of the sinkhole. The estimated flood elevation in the sinkhole is approximately 1296.7. The overflow point on the sinkhole rim is approximately 1305.5. Figure 1 shows the approximate flood elevation on a topographic map of the property.

See Appendix II for sinkhole volume calculations and HEC-HMS output.

5.0 CONCLUSIONS

Based on the research performed and visual observations, one solution sinkhole was identified in the west end of the property. The approximate location of the sinkhole rim can be viewed on Figure 1 in Appendix I. The sinkhole rim was approximated using the LiDAR elevation data and on-site observation. According to Chapter 105, Article III of the Nixa City Code, areas classified as low or moderate hazard potential for groundwater contamination and where flow into the sinkhole occurs only as sheet flow, water quality requirements can be satisfied by maintaining a permanent vegetated buffer of at least 30 feet around the sinkhole rim.

The 30 feet buffer from the sinkhole rim is shown on Figure 1 in Appendix I.

According to Chapter 105, Article III, the relative potential for groundwater contamination is low, provided that directly connected impervious areas discharging to the sinkhole is less than one (1) acre. Chapter 105, Article III also details water quality management measures that are required around the sinkhole during and after construction. A copy of Chapter 105, Article III is included in Appendix III.

6.0 REPORT LIMITATIONS

This evaluation was performed using visual observation, LiDAR elevation data, and the government and public records summarized in Section 2.0. No exploratory borings, geophysical methods, or other methods were employed to characterize the subsurface conditions at the site property. We have employed accepted engineering geologic and hydrogeologic procedures, and our opinions and conclusions are made in accordance with generally accepted principles and practices of these professions. The contents of this report are valid as of the date of preparation. However, changes in the condition of the site property can occur over time as a result of either natural processes or human activity. Should such changes occur, it might be necessary to re-evaluate some of the opinions and conclusions of this report.

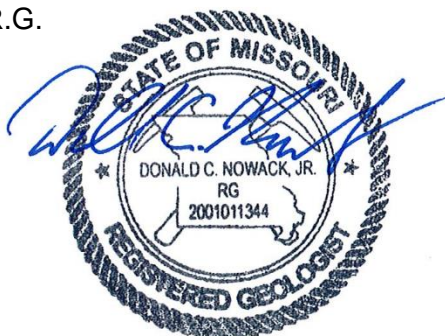
Prepared By:



12/6/2022

Donald Nowack, P.E., R.G.

Date



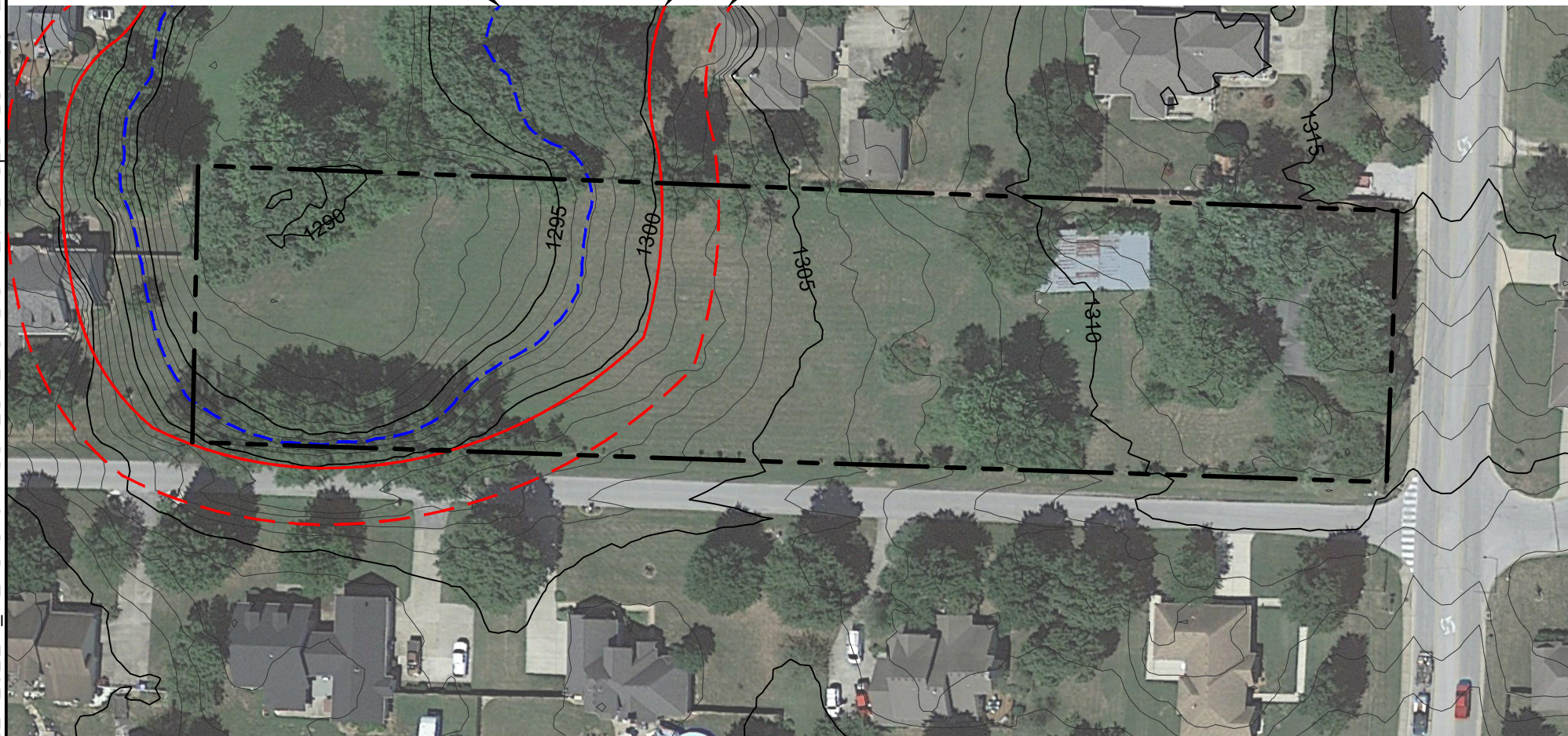
APPENDIX I

FIGURES

Approximate Sinkhole
Flood Elevation 1296.7

Sinkhole Rim

30' Vegetative Buffer
From Sinkhole Rim



SCALE
1" = 80'

Project: 601 S. Gregg Road, Nixa, MO
Client: Ivan-Co

Site Plan

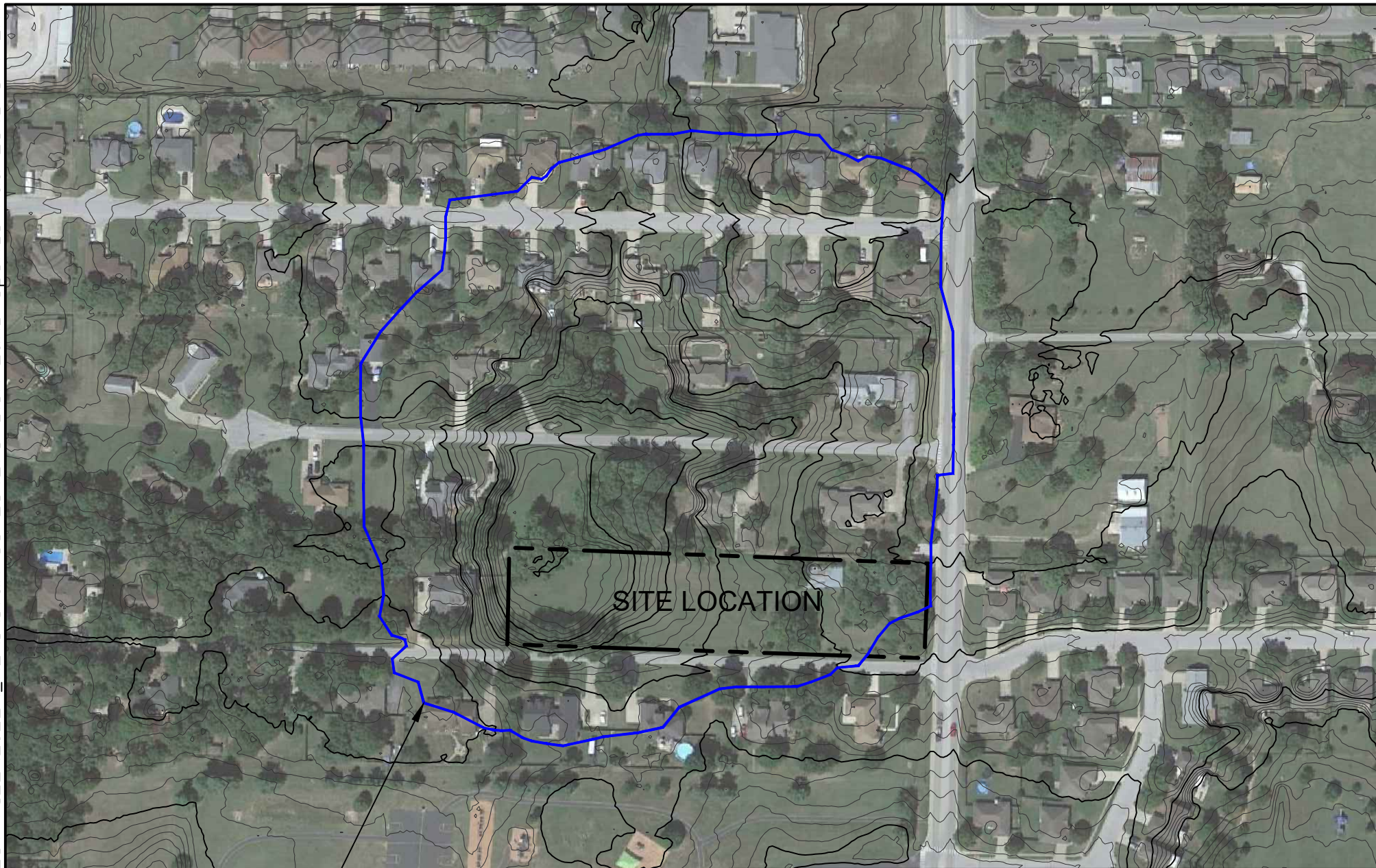
Date: December 6, 2022

Project Number: 284276



PALMERTON & PARRISH, INC.
GEOTECHNICAL AND MATERIALS ENGINEERS/MATERIALS TESTING LABORATORIES/ENVIRONMENTAL SERVICES

FIGURE 1



Sinkhole Drainage Area

SCALE
1" = 200'

Project: 601 S. Gregg Road, Nixa, MO
Client: Ivan-Co

Sinkhole Drainage Area

Date: December 6, 2022

Project Number: 284276

PpI PALMERTON & PARRISH, INC.
GEOTECHNICAL AND MATERIALS ENGINEERS/MATERIALS TESTING LABORATORIES/ENVIRONMENTAL SERVICES

FIGURE 2

APPENDIX II

SINKHOLE VOLUME CALCULATIONS & HEC-HMS OUTPUT

Sinkhole Volume Computations
601 S. Gregg Road, Nixa, MO

Client: Ivan-Co
Prepared by: Palmerton & Parrish, Inc.
Location: Sinkhole

Proj. No.: 284276
Date: 12/6/2022
Revised:

ELEVATION (FT)	AREA (FT ²)	AREA (ac)	VOLUME (FT ³)	CUMULATIVE VOLUME (FT ³)	CUMULATIVE VOLUME (AC*FT)
1290.00	719	0.0165	0.00	0.00	0.0000
1291.00	11665	0.2678	5093.35	5093.35	0.1169
1292.00	25502	0.5854	18138.21	23231.56	0.5333
1293.00	36049	0.8276	30623.77	53855.33	1.2363
1294.00	41851	0.9608	38913.94	92769.27	2.1297
1295.00	49455	1.1353	45600.14	138369.41	3.1765
1296.00	57596	1.3222	53473.83	191843.24	4.4041
1297.00	67795	1.5564	62626.26	254469.50	5.8418
1298.00	79040	1.8145	73345.63	327815.13	7.5256
1299.00	89330	2.0507	84132.54	411947.67	9.4570
1300.00	100699	2.3117	94957.77	506905.44	11.6369
1301.00	117015	2.6863	108754.96	615660.40	14.1336
1302.00	133233	3.0586	125036.32	740696.72	17.0041
1303.00	149843	3.4399	141456.71	882153.43	20.2515
1304.00	167371	3.8423	158526.23	1040679.66	23.8907
1305.00	190042	4.3628	178586.54	1219266.20	27.9905

$$VOLUME = \frac{H}{3} * [SQRT(A_1 * A_2) + A_1 + A_2]$$

Project: Sinkhole**Simulation Run:** Run 1**Simulation Start:** 31 December 2021, 24:00**Simulation End:** 1 January 2022, 24:00**HMS Version:** 4.9**Executed:** 05 December 2022, 22:32

Global Parameter Summary - Subbasin

Area (MI ²)	
Element Name	Area (MI ²)
Basin	0.02

Downstream	
Element Name	Downstream
Basin	Sinkhole

Loss Rate: SCS		
Element Name	Percent Impervious Area	Curve Number
Basin	0	85

Transform: SCS		
Element Name	Lag	Unitgraph Type
Basin	6	Standard

Global Results Summary

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Basin	0.02	83.68	01Jan2022, 12:00	4.11
Sinkhole	0.02	0	31Dec2021, 24:00	0
Outfall	0.02	0	31Dec2021, 24:00	0

Subbasin: Basin

Area (MI²) : 0.02
Downstream : Sinkhole

Loss Rate: SCS

Percent Impervious Area	0
Curve Number	85

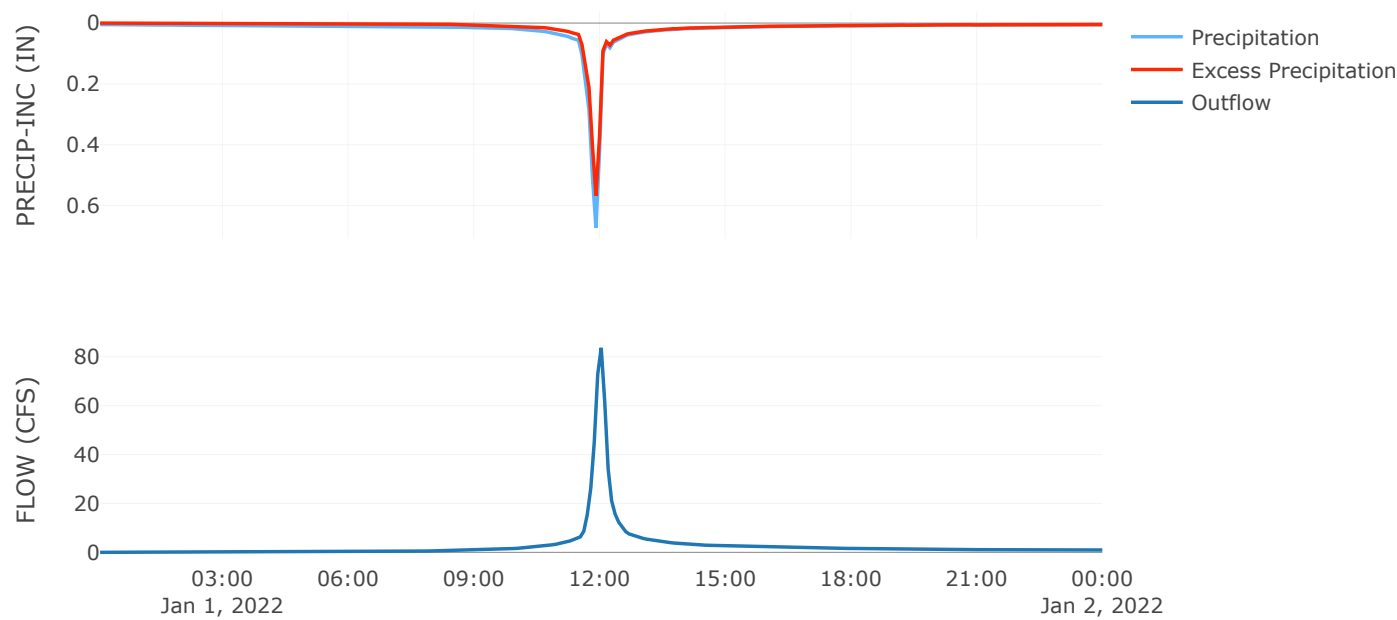
Transform: SCS

Lag	6
Unitgraph Type	Standard

Results: Basin

Peak Discharge (CFS)	83.68
Time of Peak Discharge	01Jan2022, 12:00
Volume (IN)	4.11
Precipitation Volume (AC - FT)	7.61
Loss Volume (AC - FT)	2.21
Excess Volume (AC - FT)	5.4
Direct Runoff Volume (AC - FT)	5.39
Baseflow Volume (AC - FT)	0

Precipitation and Outflow

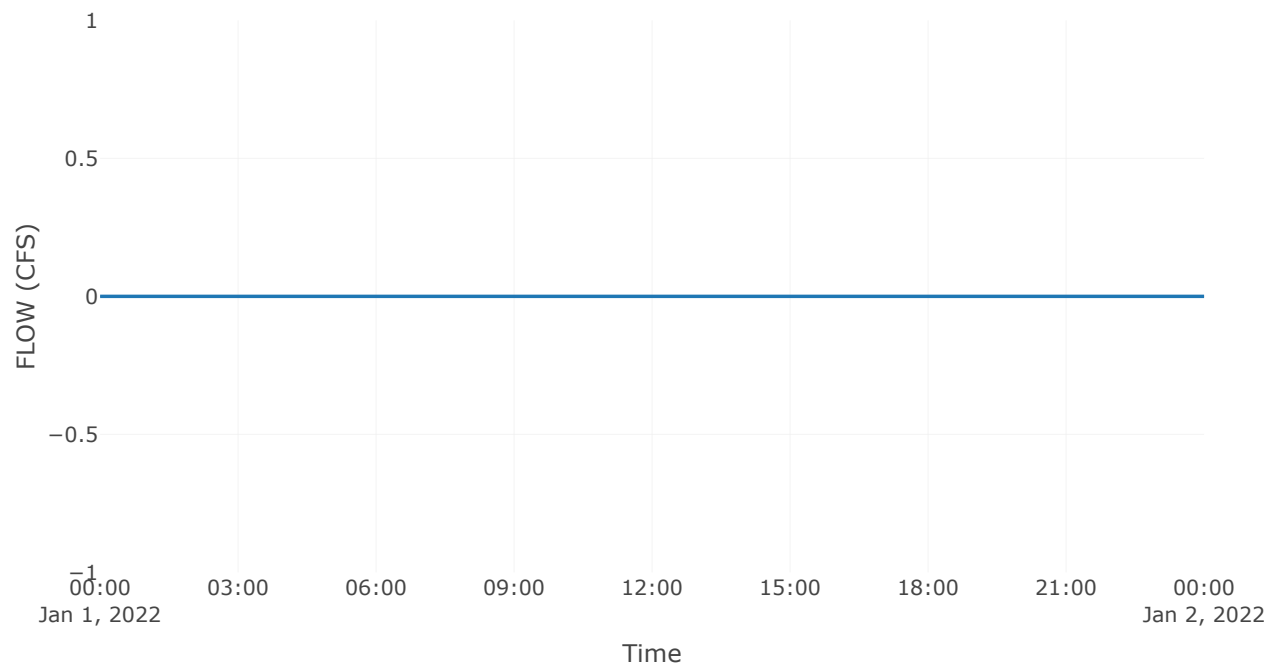


Reservoir: Sinkhole

Downstream : Outfall

Results: Sinkhole	
Peak Discharge (CFS)	0
Time of Peak Discharge	31Dec2021, 24:00
Volume (IN)	0
Peak Inflow (CFS)	83.68
Time of Peak Inflow	01Jan2022, 12:00
Inflow Volume (AC - FT)	5.39
Maximum Storage (AC - FT)	5.39
Peak Elevation (FT)	1296.69
Discharge Volume (AC - FT)	0

Outflow

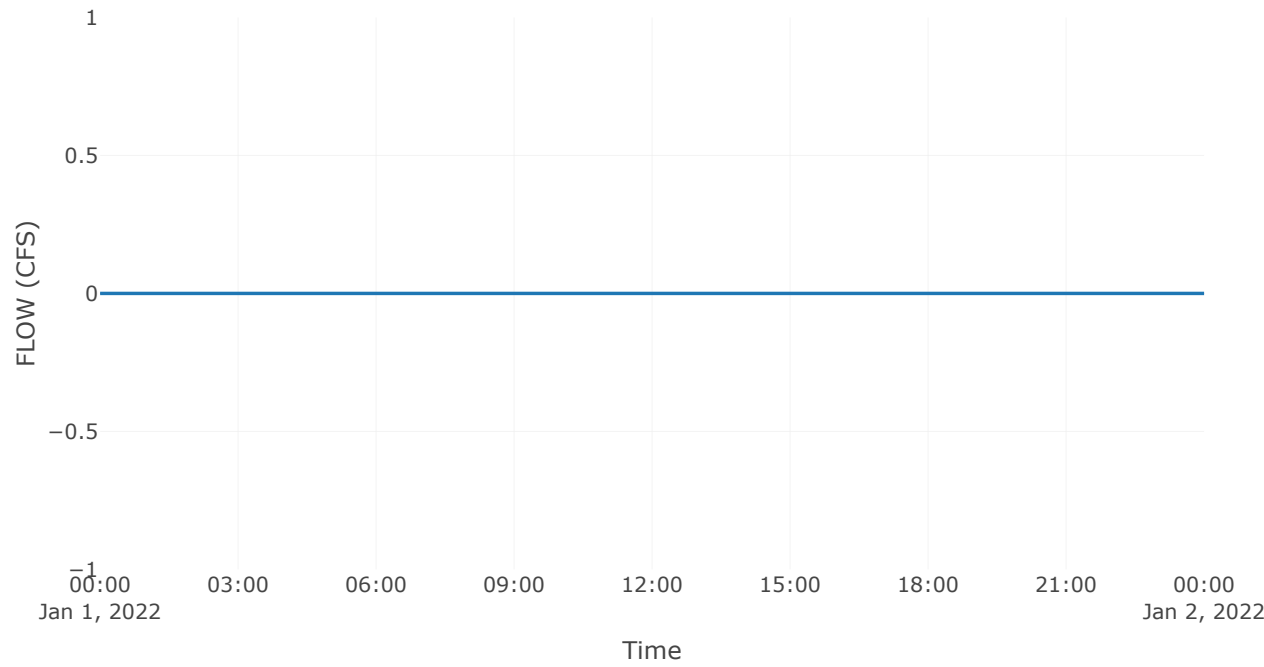


Sink: Outfall

Results: Outfall

Peak Discharge (CFS)	0
Time of Peak Discharge	31Dec2021, 24:00
Volume (IN)	0

Outflow



APPENDIX III

CHAPTER 105, ARTICLE III OF THE NIXA CITY CODE

1 AN ORDINANCE OF THE COUNCIL OF THE CITY OF NIXA AMENDING CHAPTER
2 105 OF THE NIXA CITY CODE TO ADD PROVISIONS RELATED TO THE
3 PROTECTION AND PRESERVATION OF KARST FEATURES.
4
5

6 WHEREAS the City of Nixa is situated in an area characterized by Karst
7 topography, the most well-known of such feature being a sinkhole; and
8

9 WHEREAS the preservation and protection of Karst features becomes a matter of
10 public concern, necessitating regulation, because said features can create flooding
11 hazards and water quality issues for the community; and
12

13 WHEREAS the Planning and Zoning Commission held a public hearing to consider
14 the amendments contained herein at their May 2, 2022, regular meeting; and
15

16 WHEREAS after said public hearing, said Commission recommended approval of
17 said amendments; and
18

19 WHEREAS the Council desires to adopt the regulations contained herein to clarify
20 the City's current regulations and better served the public interest and concerns at stake
21 regarding Karst features and certain development activity.
22

23 NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF
24 NIXA, AS FOLLOWS, THAT:
25

26 SECTION 1: Chapter 105, Article III, of the Nixa City Code is hereby amended by
27 repealing said Article in its entirety and adopting in lieu thereof a new Article, which said
28 Article shall read as follows:
29

30 (Note: Language to be added is indicated by being underlined. Language to be removed
31 is indicated by being ~~stricken~~.)
32

33 ARTICLE III. – SINKHOLE PRESERVATION REQUIREMENTS
34

35 Sec. 105-104. – Definitions for this Article.
36

37 The following words, terms, and phrases, when used in this Article, shall have the
38 meaning ascribed to them in this section, except where the context clearly indicates a
39 different meaning:
40

41 Compensatory Excavation means the removal of earth within a sinkhole so as to
42 increase the volume of stormwater the sinkhole will hold during a storm event.
43

44 Critically Sensitive Area means areas that are officially designated by federal or State
45 regulatory bodies or law as being especially sensitive or susceptible to contamination
46 hazards from urban runoff including areas such as recharge areas of domestic water

47 supply wells, recharge areas of springs used for public or private water supply, or
48 recharge areas of caves that provide habitat to endangered species.

49
50 Development activity means the following:

51
52 (1) Land disturbance activities which require the issuance of a land disturbance
53 permit pursuant to Part IV of the Technical Specification Manual of the City of
54 Nixa.

55
56 (2) Construction activity which requires the issuance of a building permit pursuant
57 to the Nixa City Code occurring where there is a known or apparent sinkhole
58 on the tract or adjoining the tract in which the construction activity is occurring.

59
60 (3) The subdivision of land, pursuant to the Nixa City Code, where the property to
61 be subdivided contains a known or apparent sinkhole on the tract or any
62 adjoining tract.

63
64 Drainage easement means an easement which is dedicated or granted to the City of
65 Nixa for the purpose of conveying, storing, or treating stormwater runoff and which
66 restricts by its terms the placement or location of structures within the easement area.

67
68 Grading means the movement of soil or rock by motorized equipment, except this
69 definition shall not apply to the farming of land.

70
71 Hazard Area, Low means sinkhole drainage areas where runoff is generated by land
72 uses posing relatively low levels of potential for groundwater contamination. Land uses
73 considered low hazard areas for the purposes of this Article include:

74
75 (1) Wooded areas and lawns;

76
77 (2) Parks and recreation areas;

78
79 (3) Residential developments served by municipal sanitary sewer, provided that
80 directly connected impervious areas discharging into the sinkhole area less
81 than one (1) acre.

82
83 (4) Low density commercial and office developments provided directly connected
84 impervious areas discharging to the sinkhole are less than one (1) acre.

85
86 (5) Discharge from graded areas less than one (1) acre having required sediment
87 controls.

88
89 Hazard Area, Moderate means sinkhole drainage areas where runoff is generated
90 by land uses posing relatively moderate levels of potential for groundwater contamination.
91 Land uses considered moderate hazard areas for the purpose of this Article include:
92

(1) Concentrated discharge from streets, parking lots, roofs, and other directly connected impervious areas having an area greater than one (1) acre but less than five (5) acres.

(2) Multi-family residential developments and higher intensity office developments provided that directly connected impervious areas discharging to the sinkhole are less than five (5) acres.

(3) Discharge from graded areas greater than one (1) acre and less than five (5) acres having required sediment controls.

Hazard Area, High means sinkhole drainage areas where runoff is generated by land uses posing relatively high levels of potential for groundwater contamination. Land uses considered high hazard areas for the purpose of this Article include:

(1) Collector and arterial streets and highways used for commercial transport of toxic materials.

(2) Railroads.

(3) Concentrated discharge from streets, parking lots, roofs, and other directly connected impervious areas having an area greater than five (5) acres.

(4) Commercial, industrial, and manufacturing areas.

(5) Individual wastewater treatment systems.

(6) Commercial feedlots or poultry operations.

(7) Discharge from graded areas greater than five (5) acres having required sediment controls.

Heavy equipment means motorized equipment having a gross weight rating of more than 6 tons.

Intervening mitigation feature means an existing or constructed improvement that controls stormwater runoff by detaining it or providing a water quality benefit.

Permit means the form of approval issued by the director to authorize certain development activity and is issued in compliance with this Article.

Responsible party means the fee owner of property or person authorized to act on the property owner's behalf; or any person allowing, causing, or contributing to a violation of this Article.

137 Side slope sinkhole means a type of sinkhole which has formed on a sloped surface,
138 but which has not subsided to the degree that a closed depression is formed. Side slope
139 sinkholes are usually characterized by a localized flattening of the topography.

140
141 Simulated Storm Event means the Soil Conservation Service (SCS) Type II storm
142 event with an annual exceedance probability of one percent and a duration of twenty-four
143 hours.

144
145 Sinkhole means any closed depression formed by removal (typically underground) of
146 water, surficial soil, rock, or other material. The existence of a sinkhole shall be indicated
147 by the closed depression contour lines of the topographical maps maintained by the city
148 or as may be determined by a field survey prepared by a professional land surveyor
149 registered in the State of Missouri. This term shall also include side slope sinkhole as
150 defined in this Article.

151
152 Sinkhole drainage area means any area that contributes surface water directly to a
153 sinkhole or sinkholes.

154
155 Sinkhole flooding area means the area inundated by runoff from a Simulated Storm
156 Event based on fully developed conditions in the watershed as well as current zoning and
157 potential land use.

158
159 Sinkhole eye means a discrete hole, or shaft, within the floor or slope of a solution
160 sinkhole that provides a conduit for drainage of storm water to the subsurface drainage
161 system.

162
163 Sinkhole rim means the lateral limit of a sinkhole and is defined by the topographic
164 break, or transition, between the natural ground surface and the sloped sinkhole wall.

165
166 Solution sinkhole means a sinkhole that forms by dissolution of soluble bedrock, such
167 as limestone, dolomite, or gypsum. Solution sinkholes typically occur as bowl-shaped
168 depressions.

169
170 Stormwater Control Measure means non-structural measures and structural controls
171 used to meet the flood control detention and water quality requirements of this Article.

172
173 Watercourse means land which has a conformation so as to give to surface water
174 flowing from one tract of land to another tract of land a fixed and determinate course so
175 as to uniformly discharge it upon the servient tract at a fixed and definite point. It shall
176 include but shall not be limited to ravines, swales, sinkholes or depressions of greater or
177 less depth extending from one tract and so situated as to gather up the surface water
178 flowing upon the dominant tract and to conduct along a definite course to a definite point
179 of discharge upon the servient tract. It shall not be deemed to be important that the force
180 of water flowing from one tract of land to another has not been sufficient to wear out a
181 channel or canal having definite or well-marked sides or banks. If the surface water, in

fact, uniformly or habitually flows over a given course having reasonable limits as to the width of the line of its flow, it shall be considered to have a definite course.

Sec. 105-105. – Purpose of this Article.

The purpose of this Article is to regulate certain development activity in and around karst topography features to prevent flood hazards and protect water quality. Because karst features, such as sinkholes, hold stormwater runoff and provide more direct conduits to sources of groundwater, the treatment of these areas becomes a matter of public interest.

Sec. 105-106. – Certain development activities – prohibited – director to authorizes certain development activities – when?

(a) It shall be a violation of this Article for any person or responsible party to engage in any development activity on a tract where a sinkhole is present without first obtaining a permit.

(b) It shall be a violation of this Article for any person or responsible party to engage in any development activity which increases a sinkhole's discharge rate or involves the excavating of a sinkhole eye or the installation of disposal wells which divert surface runoff to the ground water system, without first obtaining a permit.

(c) The director may authorize the construction or modification of single-story residential dwellings within a sinkhole rim under the following conditions:

(1) A permit is issued authorizing the construction or modification.

(2) All parts of the dwelling are setback at least 25 feet from the sinkhole flooding area.

(3) The finished floor elevation of the dwelling is located according to the requirements of section 105-109 of this Article.

(4) A geotechnical investigation conducted by a qualified professional geologist registered in the State of Missouri concludes that the dwelling's proposed location is structurally sound, and the findings of such investigation are provided to the director.

(d) No public street shall be placed below an elevation of at least 1 foot above the sinkhole flood elevation resulting from the 100-year, 24-hour rainfall with no outlet.

(e) Persons or responsible parties seeking approval for golf courses shall provide a management plan for the use of pesticides and fertilizers if, in the judgment of the Director, the use of pesticides and fertilizers would impact any sinkholes on the golf course. Said management plan shall be approved by the Director and deviations or violations from this plan shall be considered violations of this Section.

(f) No person shall use pesticides or fertilizers within 25 feet of any sinkhole rim.

(g) No person shall prune trees or other vegetation or remove compromised or dead trees with heavy equipment within 25 feet of any sinkhole rim.

(h) Landscaping and gardening is permitted outside the sinkhole eye provided erosion and sediment control measures are practiced with minimum tillage and mulches.

(i) Construction and placement of incidental landscaping and recreational structures such as playground equipment is permitted except in the sinkhole eye.

(j) No person shall store or apply chemicals or other contaminants within the sinkhole rim.

Sec. 105-107. – Treatment of Sinkholes – Generally.

(a) All development activity shall conform to the following principles, which shall guide the decisions of the director regarding the administration of this Article, which are listed in priority order:

(1) Avoidance. Development activity shall be generally prohibited within the sinkhole rim. However, in the event that it can be determined by the Director that avoidance measures are found to be against the public interest of health, safety, and welfare then development activity within the sinkhole rim may be permitted in accordance the principles that follow.

(2) Minimization. In cases where avoidance measures cannot be utilized, measures shall be taken to minimize the impact to the sinkhole to the least drastic degree or extent possible as a result of the development activity.

(3) Mitigation. In situations where substantial or severe impacts to a sinkhole are unavoidable, mitigation measures shall be utilized as part of the development activity to reduce the potential for hazard to the degree possible under the circumstances.

(b) The alteration of sinkholes is prohibited unless such alterations are required by one of the following conditions:

(1) An underground cavity has caused a collapsed sinkhole to form, and the collapsed sinkhole poses a threat to public health and safety unless repaired or mitigated.

(2) A sinkhole has been altered or filled unknowingly or prior to the passage of these regulations.

(3) Due to the operation and maintenance of streets, utilities, and other public infrastructure.

(4) The location of streets, utilities or other public infrastructure would render access or service to property impractical unless alterations to a sinkhole are permitted.

(5) Alteration of a sinkhole is necessary for the construction of a street where the alignment of the street would cause a traffic hazard unless the sinkhole is altered.

(c) When alterations are authorized, the guiding principles referenced in this Section shall apply to the Director's determination on whether such measures are to be approved.

Sec. 105-108. – Sinkhole Evaluation – Requirements and Contents.

(a) Development activity subject to the provisions of this Article shall be prohibited until the director has issued a permit for such activity. Applicants for such permit shall provide a sinkhole evaluation to the director which shall be performed by a qualified professional geologist or stormwater engineer registered in the State of Missouri as a professional geologist or stormwater engineer. Said sinkhole evaluation shall contain at least the following:

(1) Identification of the topographic rim and identification of the sinkhole drainage area of all sinkholes which are anticipated to receive stormwater runoff as a result of the proposed development activity.

(2) A flooding analysis of all sinkholes identified in the evaluation which shall include a description of the methods used in performing said analyses and all supporting calculations and reports.

(3) A geologic analysis of all sinkholes identified in the evaluation which shall include all subsurface data collected to determine the geologic form and soil profile of the sinkhole area.

(4) Whether the site of the proposed development activity lies within a critically sensitive area.

(5) Identify whether any of the identified sinkholes are located within a low, moderate, or high hazard area.

(6) A description and design of any mitigation measures, including water quality features, filtration buffers and screens, and structural remediation plans as such measures are required by the provisions of this Article.

(7) Identification of the location and elevation of the lowest enclosed space for all buildings located within the sinkhole drainage area or to be located within the sinkhole drainage area due to the proposed development activity.

(8) Any additional information or analyses that the director may require and that are reasonably required to carry out the intent and provisions of this Article.

Sec. 105-109. – Flood Prevention Requirements.

(a) When a sinkhole evaluation indicates that a sinkhole will receive stormwater runoff from proposed development activity, the sinkholes shown to receive stormwater runoff applicants for a permit shall also conduct a flooding evaluation to identify the flooding impacts of the proposed development activity. The flooding evaluation shall involve the following assumptions, methods of analysis, and engineering:

(1) It shall be assumed that the sinkhole has no subsurface outflow unless a subsurface outflow rate is determined according to the requirements of subsection (b)(3)(ii)(C) of this section.

(2) The flooding evaluation shall assume the conditions associated with a simulated storm event, as such term is defined in this Article. Runoff shall be calculated using the Soil Conservation Service Curve Number Loss Model.

(3) If the runoff analysis indicates flooding levels that would overflow the topographic rim of the sinkhole, then the flooding elevations shall be determined using reservoir routing methods. In this case, additional downstream evaluation shall be required to determine that the post-development flow does not exceed the pre-development runoff flow and that any channelized or concentrated flow is discharged into an existing public drainage easement, public right-of-way, or existing watercourse.

(4) If runoff during the simulated storm event is detained by an intervening mitigation facility for a period of at least 24 hours before it would enter the sinkhole, then such volume of runoff may be excluded from the flooding analysis required by this section.

(b) Flooding Elevation Restrictions. The flooding evaluation shall identify the post-development sinkhole flooding area, which shall be the area prone to flooding impacts based on the proposed development activity.

(1) If the post-development sinkhole flooding area is located entirely within the property in which the development activity is occurring, a drainage easement shall be established covering the sinkhole flooding area or an area containing the entirety of the sinkhole plus the vegetative buffer required by this Article, whichever is larger.

(2) If the post-development sinkhole flooding area is located fully or partially on another tract which is not owned in fee by the permit applicant, the following requirements shall apply:

a. The post-development sinkhole flooding area shall be contained within a drainage easement; and

b. Any concentrated flow discharged from the proposed development shall be contained within a drainage easement until it reaches the receiving sinkhole, existing public drainage easement, public right-of-way, or existing watercourse. The easement area shall contain the runoff from the storm event with an annual exceedance probability of one percent (1%) that produces the highest peak flow, regardless of duration.

(3) Where it is not possible for a drainage easement to contain the sinkhole flooding area, a drainage easement shall not be required when the flooding evaluation indicates that the flooding evaluation of the proposed development activity that:

a. The proposed development will not cause a rise in the flood elevation within a reasonable tolerance of 0.1 feet, or

b. The impacts of both the proposed development and any future development in the watershed will not impact any existing structures or improvements and will not increase the flooding elevation by more than one foot. The increase in the flooding elevation shall be distributed proportionately based on watershed size. For example, if the development is 20 percent of the watershed, that development may increase the flooding elevation by 20 percent of one foot or 0.2 feet. This can be determined by calculating the runoff rates and volumes from the entire watershed, assuming fully developed conditions based on current zoning and potential future land use and then calculating the resulting water surface elevation.

c. The following alternatives, listed in order of priority, may be used individually or in combination, if needed, to comply with the requirements of this Section:

(i) Stormwater control measures that reduce runoff volume such as bioretention, pervious pavement, or similar measures. Small-scale, distributed applications are preferred over centralized, large-scale practices in areas with known or suspected sinkholes.

(ii) Detention Storage. Because traditional detention storage has little or no impact on the volume of runoff from a site, it is seldom the solution for impacting the water surface elevation of an adjacent sinkhole. However, in the case where detention is warranted, the following conditions shall be met:

(A) It must be shown that the peak basin outflow is less than the existing peak rate of runoff from the site and less than the discharge rate of the sinkhole.

409 (B) Compensatory excavation within the rim. Where it can be demonstrated
410 that compensatory excavation within a sinkhole rim is the only feasible
411 alternative available to protect downstream private property or public
412 facilities from the effects of stormwater runoff, compensatory excavation
413 may be undertaken within the sinkhole rim when expressly authorized
414 by the Director and where the following conditions are satisfied:

415
416 1. The compensatory excavation creates no adverse impact on
417 groundwater, sinkhole stability, flood conditions, or other properties.

418
419 2. A comprehensive erosion and sediment control plan is developed to
420 keep sediment confined to the excavation site.

421
422 (C) Determination of Outflow Capacity of Sinkhole.

423
424 1. The assumption required by this Article that the sinkhole does not
425 have any outflow capacity may be overcome according to the
426 following provisions:

427
428 a. The stage-discharge characteristics of the sinkhole shall be
429 estimated by monitoring the sinkhole during at least two storm
430 events exceeding one (1) inch of runoff in a six (6) hour period.

431
432 b. In sinkhole complexes, receiving or terminal sinkholes must also
433 be analyzed if they receive overflow from upstream sinkholes.

434
435 c. Input rainfall hydrographic shall be determined by a recording rain
436 gauge or readings from an approved rain gauge at 15-minute
437 intervals.

438
439 d. The outflow rate shall be estimated by adjusting the stage-
440 discharge relationship of the reservoir routing model until the
441 maximum reservoir state in the model correlates with the
442 maximum observed stage in the sinkhole. The maximum stage
443 shall be determined to the nearest 0.1 feet by a field survey
444 conducted by a registered design professional.

445
446 e. Stages may be determined by field instruments at the option of
447 the registered design professional conducting the assessment.
448 Information regarding the instrument used shall be submitted with
449 the report.

450
451 f. Where debris lines are used as evidence of maximum stage,
452 photographs shall be provided.
453

g. If by accounting for the outflow from the sinkhole, the conditions set forth in this section can be met, no further flooding analysis is necessary.

h. The volume of runoff storage in the sinkhole(s) can be counted toward stormwater detention requirements, provided that proper sediment and erosion control measures are provided as set forth in "Sediment and Erosion Control" and water quality considerations as set forth in this section can be met.

i. If in the opinion of the Director, the outflow capacity of the sinkhole may be adversely affected by groundwater conditions, the effects of which may not be adequately determined by observing surface water stages, the Director may require installation of monitoring wells in each sinkhole, for the purpose of monitoring groundwater levels in comparison to surface water levels.

(4) The lowest enclosed space for all new buildings within or adjacent to a sinkhole flooding area shall be:

a. A minimum of five feet above the flooding elevation where there is no overflow from the sinkhole in the simulated storm event; or

b. One foot above the flooding elevation determined by the overflow elevation calculated for the simulated storm event, whenever the difference between the topographic rim and flooding elevation is less than five feet.

(5) When existing improvements are below the flooding elevation resulting from the simulated storm event, an evaluation of the impacts during higher frequency or shorter duration rainfall events may be required. It shall be shown that runoff rates and volumes from a proposed development will not increase the flooding frequency for any such existing building, structure, or public street.

Sc.105-110. – Water Quality Protection.

(a) Proposed land use and development within a sinkhole drainage area shall provide measures for water quality protection according to the following requirements:

(1) A twenty-five (25) feet vegetative buffer between any land improvement or land disturbance and the sinkhole flooding area. The width of the required buffer may be reduced with the express permission of the Director if it can be demonstrated that equivalent or better water quality measures will be provided to substitute for water quality utility of the vegetative buffer.

- 498 (2) Development that disturbs a land area exceeding one acre in total within a sinkhole
499 watershed, shall obtain a land disturbance permit and provide for all necessary
500 sediment and erosion controls.
501
502 a. Where the sinkhole is in a critically sensitive area, as defined in this Article,
503 existing ground cover shall not be removed within thirty (30) feet of the sinkhole
504 rim and a silt barrier shall be provided around the outer perimeter of the buffer
505 area.
506
507 b. A sediment basin is required at each point where concentrated flows are
508 discharged into the sinkhole. The sediment basin shall be designed according
509 to the requirements of the City's technical specifications manual.
510
511 (3) Site design shall minimize directly connected impervious area and incorporate
512 sheet flow and vegetated conveyance wherever possible within the sinkhole
513 watershed.
514
515 (4) Areas classified as low or moderate hazard potential for groundwater
516 contamination and where flow into the sinkhole occurs only as sheet flow, water
517 quality requirements can be satisfied by maintaining a permanent vegetated
518 buffer of at least 30 feet around the sinkhole rim. Use of pesticides and fertilizers
519 will not be permitted within this buffer area. Animal waste shall not accumulate in
520 this buffer area.
521
522 (5) Areas classified as low hazard potential for groundwater contamination where
523 concentrated flow from directly connected impervious areas of less than one acre
524 may be discharged into the sinkhole through grass swales and channels. Swales
525 and channels shall be designed for non-erosion velocities and appropriate
526 temporary erosion control measures such as sodding, or erosion control blankets
527 provided.
528
529 (6) Storage and infiltration basins are required for all areas classified as high hazard
530 potential for groundwater contamination or areas classified as moderate hazard
531 for groundwater contamination where concentrated stormwater flows enter the
532 sinkhole.
533
534 a. Storage and infiltration basins shall be designed to capture the runoff from
535 storms up to 1 inch in 6 hours and release runoff over a minimum period of 24
536 hours. Standard outlet structures for sedimentation and infiltration basins are
537 shown in Appendix F of the City's technical specifications manual.
538
539 (7) Developments or land uses that involve the outdoor handling of hazardous
540 materials or other substances that pose a threat to groundwater quality must
541 provide a containment plan to show what measures will be taken to assure that
542 discharges of these materials will be contained and prevented from entering the
543 sinkhole. Measures may include the installation of warning signs, fencing, or site

arrangement that demonstrates an affirmative action to reduce the possibility of contamination.

Sec. 105-111. – Sinkhole Closure.

(a) An exemption may be granted to the police of sinkhole avoidance, minimization, and mitigation upon approval of a plan to close a sinkhole. The sinkhole closure plan shall include the following information:

(1) Reason justifying the closure.

(2) Location and description of the sinkhole, including dimensions, depth, and a description of the sinkhole eye, and one-foot contour interval topographic map of the sinkhole and its drainage area.

(3) Geotechnical report describing the fill plan, source of clean soil fill, soil testing data, and specifications for compaction.

(4) Foundation design report detailing the design of any structures to be constructed on the closed sinkhole.

(5) Stormwater management report that includes pre-development and post-development flooding analysis and describing how stormwater will be managed on-site.

(6) Groundwater report that assesses the impact of the sinkhole closure on groundwater quality and groundwater recharge.

(7) Site development report that details site grading, roadway construction, utility construction, and erosion control (best management practices).

(8) The sinkhole closure application must be signed and sealed by a professional geologist registered in the State of Missouri and must be accompanied by a performance bond in an amount totaling 110 percent of the cost of proposed closure.

(9) The sinkhole closure design must provide for engineered fill with a permeability of at least 1.0×10^{-6} cm/sec. bearing capacity. Any sinkhole eyes that exist must be stabilized by construction of a graded filter. A survey of the closed sinkhole must be filed with the Christian County Recorder of Deeds.

~~ARTICLE III. – PARKING LOT AND LANDSCAPING WORKSHEETS~~

~~Sec. 105-104. Worksheets.~~

~~Buffering Residential Development from Streets (Sample Schedule)~~

~~(1) Type of street adjacent to rear yard: _____~~

~~(2) Minimum width of required buffer: _____~~

~~(3) Linear feet of street frontage toward which rear yards are oriented: _____~~

~~(4) Number of plants required: _____ shade trees _____ evergreen trees _____ shrubs~~

~~(5) Percentage of required buffer strip occupied by existing woodland: _____~~

~~(6) Six foot fence or wall or five foot berm employed in buffer strip: _____ Yes _____ No~~

~~(7) Number of plants provided: _____ shade trees _____ evergreen trees _____ shrubs~~

~~Parking Lot Landscaped Strip (Sample Schedule)~~

~~(1) Linear feet of street frontage of parking lot: _____~~

~~(2) Option selected (1, 2, 3, 4, or 5): _____~~

~~(3) Number of plants required: _____ shade trees (or equivalent ornamental or evergreen trees) _____ shrubs~~

~~(4) Number of plants provided: _____ shade trees _____ ornamental trees _____ evergreen trees _____ shrubs~~

~~Parking Lot Perimeter Area (Sample Schedule)~~

~~(1) Linear feet of parking lot perimeter adjacent to property line: _____~~

~~(2) Number of plants required between parking lot and property line:~~

~~_____ Shade trees (or equivalent ornamental or evergreen trees~~

~~_____ Shrubs~~

~~(3) Number of plants provided between parking lot and property line:~~

~~_____ Shade trees _____ Ornamental trees _____ Evergreen trees _____ Shrubs~~

SECTION 2: The City Attorney, when codifying the provisions of this Ordinance, is authorized to provide for different section numbers, subsection numbers, and different internal citation references than those provided herein when such section numbers, subsection numbers, or internal citation references are in error or are contrary to the intent of this Ordinance.

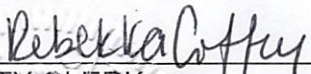
SECTION 3: Savings Clause. Nothing in this Ordinance shall be construed to affect any suit or proceeding now pending in any court or any rights acquired, or liability incurred nor any cause or causes of action occurred or existing, under any act or ordinance repealed hereby.

SECTION 4: Severability Clause. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of this Ordinance. The Council hereby declares that it would have adopted the Ordinance and each section, subsection, sentence, clause, or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid.

SECTION 5: This Ordinance shall be in full force and effect from and after its final passage by the City Council and after its approval by the Mayor, subject to the provisions of section 3.11(g) of the City Charter.

ADOPTED BY THE CITY COUNCIL THIS 23rd DAY OF MAY 2022.

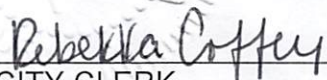
ATTEST:



CITY CLERK


PRESIDING OFFICER

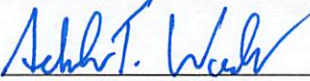
APPROVED BY THE MAYOR.

ATTEST:


CITY CLERK


MAYOR

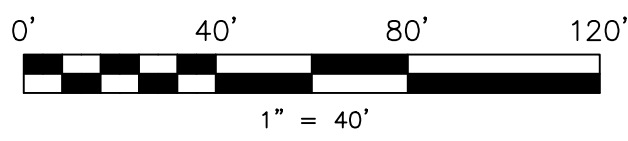
APPROVED AS TO FORM:


CITY ATTORNEY

MAY 23 2022
DATE OF APPROVAL

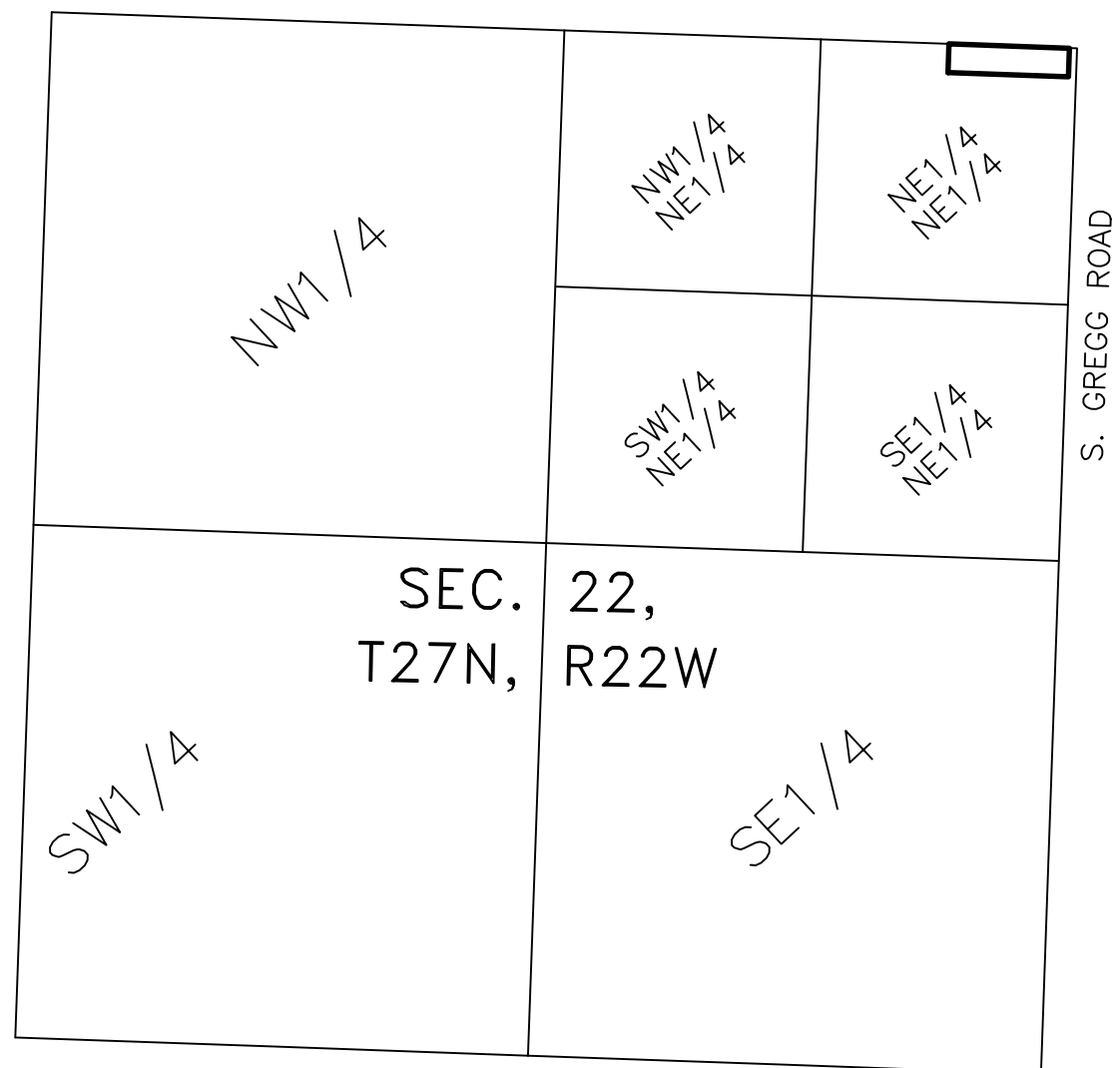
PROPERTY BOUNDARY SURVEY
FOR THE PURPOSE OF ANNEXATION INTO THE CITY OF NIXA, MISSOURI
LOCATED IN THE NE1/4 OF THE NE1/4 OF SECTION 22,
T27N, R22W OF THE 5th. P.M. IN THE CITY OF NIXA, CHRISTIAN COUNTY, MISSOURI

ALL BEARINGS ARE BASED GRID NORTH, 1983 MISSOURI
COORDINATE SYSTEM, CENTRAL ZONE. ALL
COORDINATES SHOWN HEREON ARE GIVEN IN FEET AND
ARE BASED ON THE 1983 MISSOURI COORDINATE
SYSTEM. COORDINATES WERE ESTABLISHED FROM
MISSOURI GEOGRAPHIC REFERENCE SYSTEM CONTROL
MONUMENT: CH-22
GRID FACTOR: 0.9999372
DATE OF ADJUSTMENT: 2004

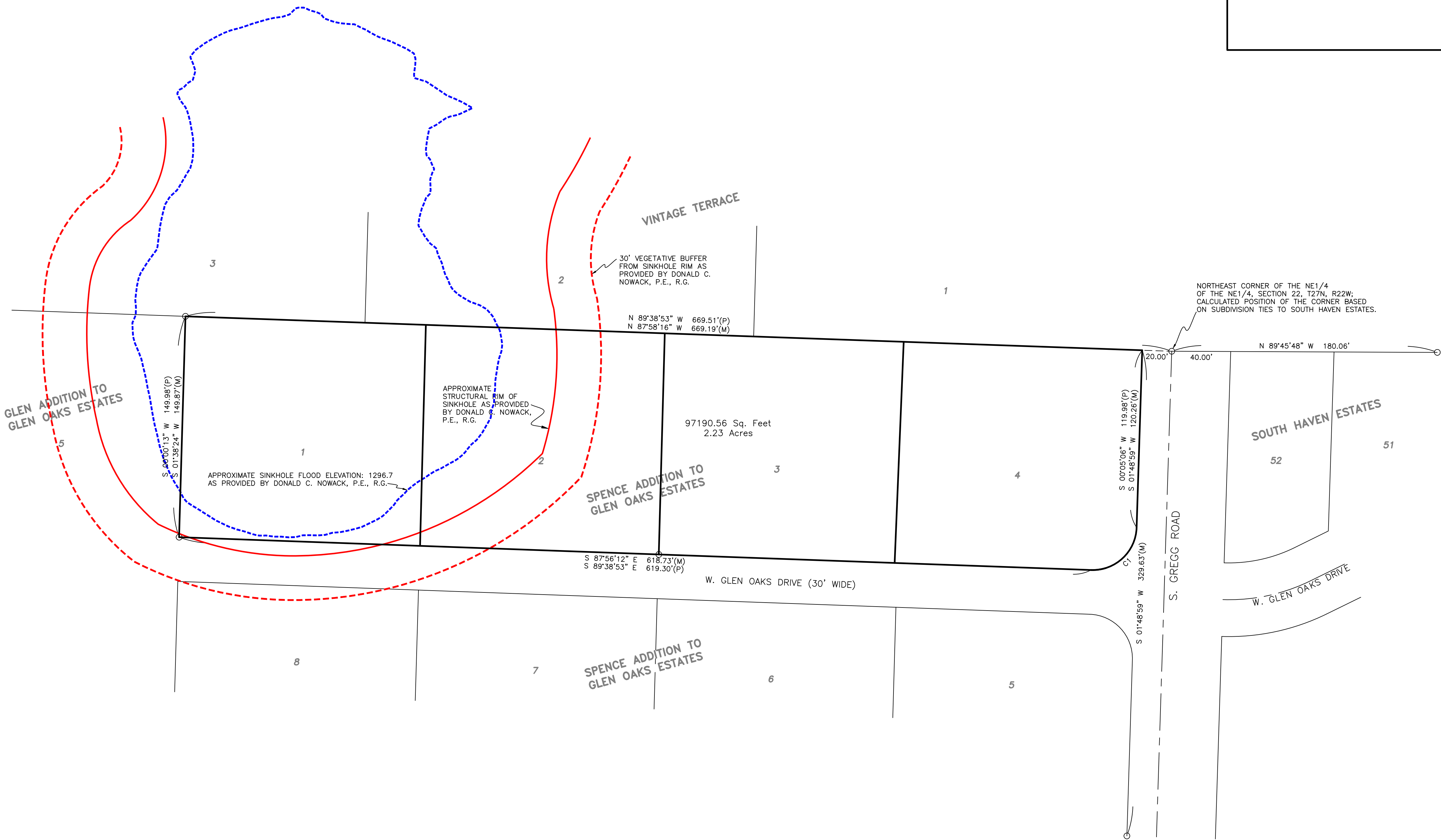


LEGEND			
△	—	CALCULATED POINT	
○	—	FOUND EXISTING MONUMENT BY LS-2190 OR AS NOTED.	
●	—	SET IRON PIN WITH PLS-2002014103 CAP.	
(M)	—	MEASURED (P)— PLAT	BSL— BUILDING SETBACK LINE

LOCATION SKETCH
1" = 1000'



CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
G1	29.87	47.65	42.33	N 46°58'23" E	90°14'49"



NOTES:

RECORD SOURCE PLAT: SPENCE ADDITION AND GLEN ADDITION TO GLEN OAKS ESTATES, PLAT BOOK G, PAGE 153 BY PLS-2190.

REFERENCE PLAT: FINAL PLAT OF SOUTH HAVEN ESTATES, PLAT BOOK G, PAGE 882, DOC #2001L10198, SLIDE #1188 BY PLS-2671.

RECORD SOURCE DEED: IVAN-CO; DEED IN BOOK 2021 AT PAGE 016708.

RECORD SOURCE FOR SINKHOLE EVALUATION: DONALD C. NOWACK, P.E., R.G., PPI PROJECT No. 284276 DATED DECEMBER 6, 2022.

CURRENT ZONING: R-1

PROPERTY SHOWN HEREON DOES NOT LIE WITHIN A F.E.M.A. IDENTIFIED FLOOD HAZARD AREA ACCORDING TO THE FLOOD INSURANCE RATE MAP COMMUNITY PANEL MAP No. 29043C0065C, EFFECTIVE DECEMBER 17, 2010.

OWNER/DEVELOPER: IVAN-CO

DESCRIPTION:


ALL OF LOTS ONE (1), TWO (2), THREE (3) AND FOUR (4) OF SPENCE ADDITION TO GLEN OAKS ESTATES, A SUBDIVISION IN CHRISTIAN COUNTY, MISSOURI ACCORDING TO THE RECORDED PLAT THEREOF IN PLAT BOOK G AT PAGE 153.

SUBJECT TO EASEMENTS, COVENANTS AND RESTRICTIONS OF RECORD.

DECLARATION NOTES:

MONUMENTS AND IRON PINS SHOWN AS SET WERE PLACED UNDER THE PERSONAL SUPERVISION OF BRADLEY N. MACKEY, PLS-2002014103. LOCATION OF IMPROVEMENTS AS SHOWN HEREON WAS TAKEN FROM VISUAL INSPECTION OF PHYSICAL EVIDENCE ON THE PREMISES AND EASEMENTS, IF ANY ARE SHOWN, ARE THOSE WRITTEN, PROVIDED, OR DISCOVERED; AND THESE ITEMS MAY NOT BE ALL INCLUSIVE. PROPERTY BOUNDARIES AS SHOWN ARE GENERALLY BASED ON DEEDS OF RECORD. VARIATIONS FOUND OUT OF HARMONY AGREEMENT WITH RECORD TITLE LINES ARE AS SHOWN. THIS SURVEY IS CLASSIFIED AS URBAN.

DECLARATION:
I, BRADLEY N. MACKEY, PROFESSIONAL LAND SURVEYOR #2002014103, HEREBY CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY UNDER MY SUPERVISION AND THE RESULTS OF SAID SURVEY ARE REPRESENTED ON THIS PLAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF. I DID ATTEMPT TO MEET THE CURRENT STANDARDS FOR PROPERTY BOUNDARY SURVEYS OF THE MISSOURI DEPARTMENT OF AGRICULTURE, AND THE STANDARDS ADOPTED BY THE BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, PROFESSIONAL LAND SURVEYORS AND PROFESSIONAL LANDSCAPE ARCHITECTS. WITNESS BY MY SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 24th DAY OF JANUARY, 2023.

 MACKEY SURVEYING LAND SURVEYORS AND PLANNERS 162 OAK TREE ACRES LANE, BRANSON, MO 65616	
CLIENT: IVAN-CO	417-300-1781 JOB No.: 22-1147-5-2
DESCRIPTION: PROPERTY BOUNDARY SURVEY	DATE: 01/24/2023
LOCATION: LOTS 1-4, SPENCE ADDITION TO GLEN OAKS ESTATES; NE1/4, SEC. 22, T27N, R22W IN THE CITY OF NIXA, CHRISTIAN COUNTY, MISSOURI.	SCALE: 1" = 40'
ORDERED BY: VIKTOR GOSSSEN	DWG. No.: 1147-5-2
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