

# CITY OF BLOOMINGTON



May 26, 2016 @ 5:30 p.m.  
COUNCIL CHAMBERS #115  
CITY HALL

CITY OF BLOOMINGTON  
BOARD OF ZONING APPEALS  
May 26, 2016 at 5:30 p.m.

\*Council Chambers - Room #115

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**ROLL CALL**

**MINUTES TO BE APPROVED:** April 21, 2016

**REPORTS, RESOLUTIONS, AND COMMUNICATIONS:**

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**PETITIONS:**

- V-9-16 **Three Guys Funding, LLC**  
1909 W. 3<sup>rd</sup> St.  
Request: Variance from karst conservancy easement standards to allow development within required easement area and within the karst feature.  
Case Manager: Jackie Scanlan

**BLOOMINGTON BOARD OF ZONING APPEALS**  
**STAFF REPORT**  
**LOCATION: 1909 W. 3<sup>rd</sup> Street**

**CASE #: V-9-16**  
**DATE: May 26, 2016**

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**PETITIONER:** Three Guys Funding, LLC  
1428 E. 3<sup>rd</sup> Street, Bloomington

**CONSULTANTS:** Bynum Fanyo & Associates, Inc.  
528 North Walnut Street, Bloomington

Weber Group, Inc.  
5233 Progress Way, Sellersburg

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**REQUEST:** The petitioners are requesting a variance from karst conservancy easement standards to allow development within a karst feature, the required 25-foot easement area, and a building within the required 10-foot setback.

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**Report:** The property is located at 1909 W. 3rd Street and is zoned Commercial Arterial (CA). Surrounding land uses include vacant land and business/professional offices to the north across 3rd Street, single family residences to the west and south, and commercial to the east. The property is vacant except for a billboard at the northeast corner. There are some trees on the site, but no wooded areas that would require preservation. The property largely drains to the east, falling roughly 20 feet from the northwest to the east, and the majority of the property drains to a sinkhole located to the southeast of the property. The outer edge of a second large karst feature is located in the southwest portion of the parcel. This is the karst feature involved in the variance request.

A 5,070 square foot portion of the southwest corner of the site is within an 11.17 acre karst feature that is primarily located to the west of Cory Lane. The last closed contour of the karst feature is the 852 foot elevation contour. 7 residences, 5 commercial structures, and 2 roads are currently located partially or entirely within the 852 foot elevation contour. The UDO requires a 25 foot Karst Conservancy Easement (KCE) outside of the last closed contour. There is an additional requirement of a 10 foot building setback from the KCE. The site plan proposes development including a drive aisle and associated infrastructure within the 852 foot elevation contour. The site plan also proposes a building and surrounding development within the KCE and the building setback.

A variance was received in 2005 by another property within the same karst feature that established the 838 foot elevation contour as the no land disturbance limit in the sinkhole on that site and a subdivision in which it is located. The 841 foot elevation contour was established as the limit inside of which no net loss in storage area for the sinkhole could occur. The 845 foot contour was established as the lowest elevation allowed for building pads. The lowest elevation contour on the petition site that is part of the karst feature is the 848 foot elevation contour, three feet higher than the lowest

building pad limit required of the other site in 2005.

The single family homes along Cory Lane and the southern part of this development site are not located within City limits and are subject to the Monroe County karst protection regulations. The County requires a 50' setback from the flooding limits of large karst features, not a setback from the last closed contour. The County has determined that only the western edge of these lots would be subject to any karst protection regulations related to the 11.17 acre sinkhole.

Based on Plan Commission feedback, the petitioners have designed the drainage on the site so that the amount of the site that currently drains to the karst feature will remain the same after construction. The speed with which that area drains will also remain the same, and all water draining from impervious areas to the karst feature will now be treated by a bioretention area located on the parcel outside of city limits.

The petitioners are requesting a variance from the karst conservancy easement standards to allow development within the karst feature, the required 25-foot easement area, and a building within the required 10-foot setback.

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## CRITERIA AND FINDINGS

**20.09.130 e) Standards for Granting Variances from Development Standards:** A variance from the development standards of the Unified Development Ordinance may be approved only upon determination in writing that each of the following criteria is met:

- 1) *The approval will not be injurious to the public health, safety, morals, and general welfare of the community.*

**STAFF FINDING:** Staff finds that the request is not injurious to the public health, safety, morals, or general welfare of the community. This variance will allow for development in a .116 acre portion of an 11.17 acre karst feature, as well as the karst conservancy area and building setback coupled with the karst feature. The karst feature currently contains 12 buildings and 2 roadways. The proposed development area is separated by 250 feet from the flooding limit established in 2005 and from the majority of the karst feature by a row of developed single-family lots and a roadway. Measures have been taken to ensure runoff to the karst feature will remain the same in acres drained and speed of runoff.

- 2) *The use and value of the area adjacent to the property included in the Development Standards Variance will not be affected in a substantially adverse manner.*

**STAFF FINDING:** Staff finds no adverse impacts to the use and value of the surrounding area associated with the proposed variance. The variance involved the edge of a karst feature that extends west and northwest from the petition site. The immediate surrounding properties in the karst feature are already developed.

The petition site will meet all other UDO development requirements, including buffering and landscaping. Measures have been taken to ensure runoff to the karst feature will remain the same in acres drained and speed of runoff; and that runoff from the impervious areas in that acreage will be treated in a bioretention feature for improved water quality.

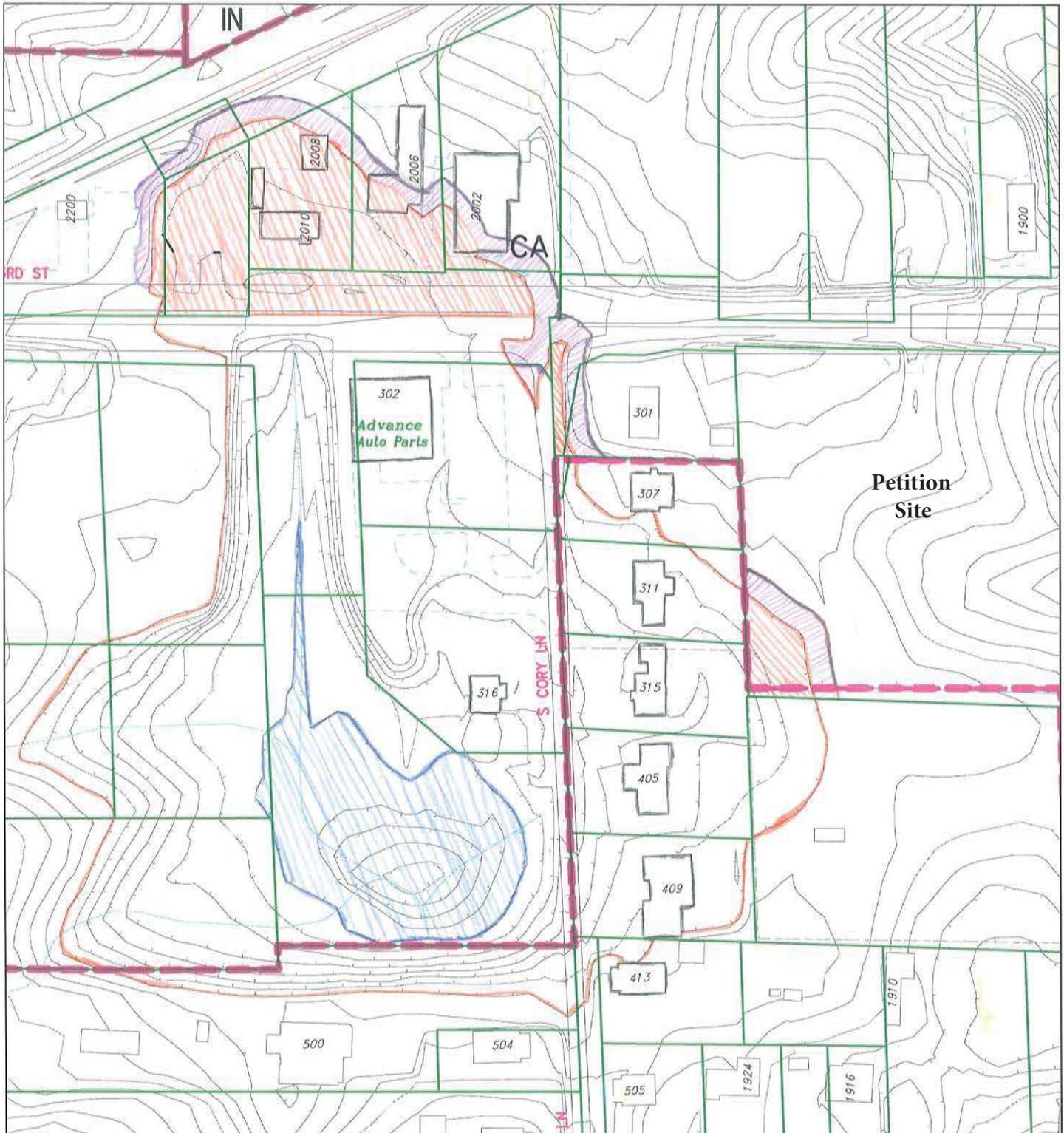
- 3) *The strict application of the terms of the Unified Development Ordinance will result in practical difficulties in the use of the property; that the practical difficulties are peculiar to the property in question; that the Development Standards Variance will relieve the practical difficulties.*

**STAFF FINDING:** Staff finds peculiar condition in the fact that only 1 percent of the karst feature is located on this parcel; all of the contiguous parcels that are in the UDO-defined karst feature are developed; and the 1 percent area is not contiguous to any other portion of the karst feature in which development is currently restricted. Not only is the 1 percent area non-contiguous, it is separated from the bulk of the karst feature by developed home sites and a roadway, including being 250 feet from the established flood limit. Practical difficulty is found in that strict adherence to the UDO will not allow development to occur in a .116 acre portion of the karst feature, as well as the 25 foot karst conservancy easement and no building within the 10 foot setback, which are all outside of previously established protection zones for this large 11.17 acre karst feature. Restricting development of the 1 percent area that is on the extreme outside edge of the 11.17 acre karst feature does not contribute to its protection, which is the stated function of the regulation.

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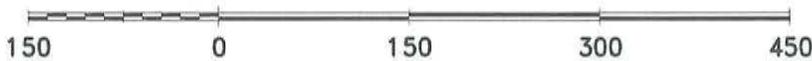
**RECOMMENDATION:** Based upon the written findings above, staff recommends approval of this petition with the following condition:

1. The petitioner shall record a Written Commitment to use no pesticides and a minimal amount of salt chemicals on the site. The commitment must be recorded vbefore any occupancy permits are issued.

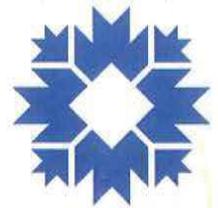


-  - No disturbance area within last closed contour
-  - No disturbance area within 25' Karst Conservancy Easement
-  - No disturbance area within 838' elevation contour

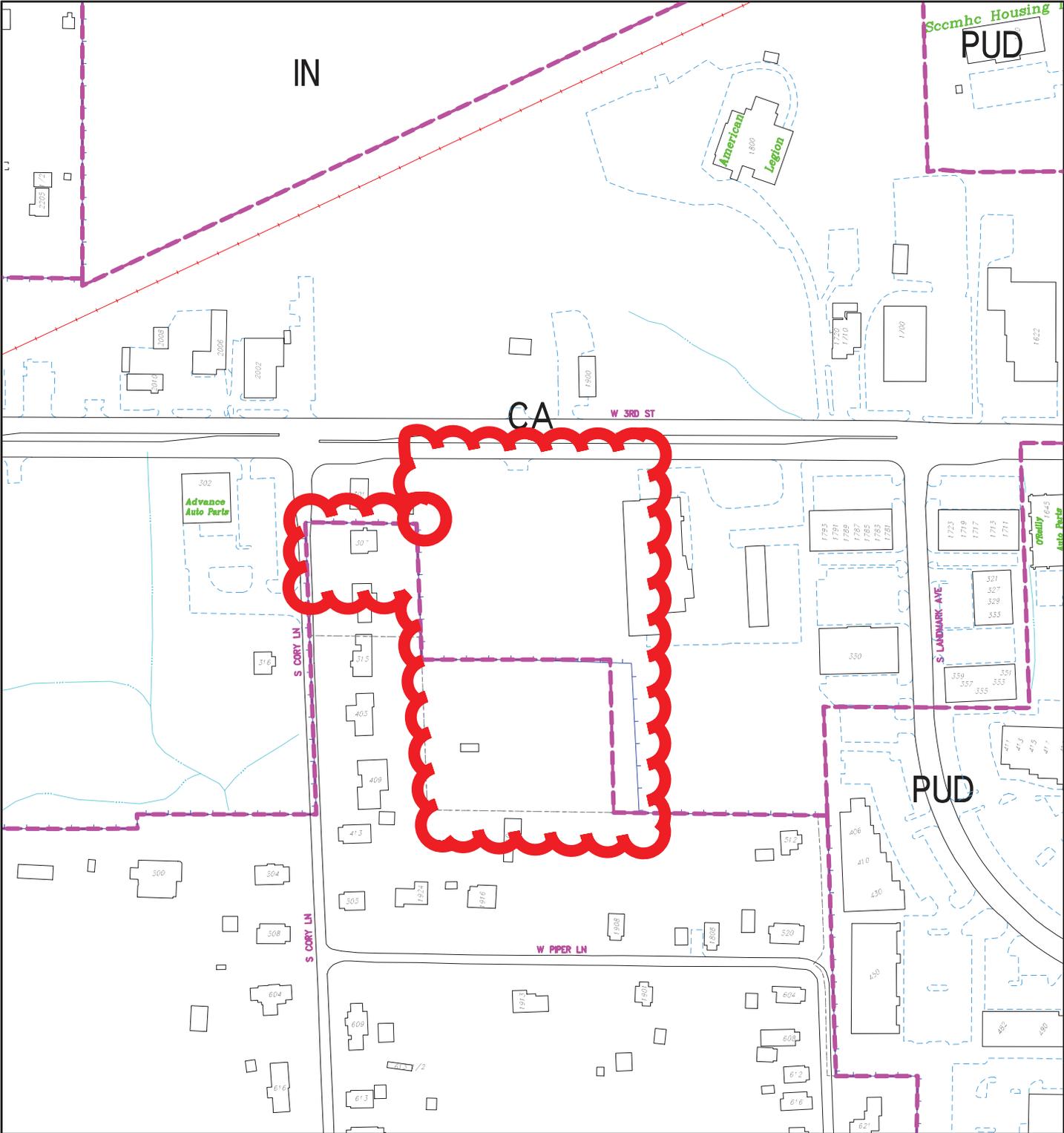
By: scanlanj  
3 Mar 16



City of Bloomington  
Planning & Transportation



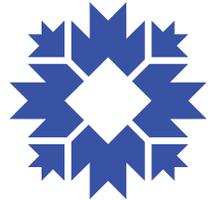
Scale: 1" = 150'



By: roachja  
23 Dec 15



City of Bloomington  
Planning & Transportation



Scale: 1" = 250'

For reference only; map information NOT warranted.

# MEMORANDUM

Date: April 22, 2016

To: Bloomington Plan Commission

From: Bloomington Environmental Commission

Through: Linda Pride Thompson, Senior Environmental Planner

Subject: SP-1-16, Mother Bear's Pizza Commercial Site, Three Guys Funding  
1909 West 3<sup>rd</sup> Street

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The purpose of this memo is to convey our environmental concerns and recommendations with the hope that action will be taken to improve the environmental integrity of this proposed plan. This request is for a Plan Commission approval of the Site Plan, then at a later date the petition will go to the Board of Zoning Appeals to request a Variance to the Environmental Standards; Karst Geology (20.05.042).

The EC is still opposed to this environmental-protection variance, and believes that the cumulative effect of encroachment is deleterious to the karst system, and earlier precedence does not justify further damage. In other words, previous sinkhole filling does not justify further sinkhole filling.

Part of this site lies within one of Bloomington's largest known sinkholes, and for this particular design to be built, a variance from our Bloomington Municipal Code (BMC) would need to be granted, and violate our publically vetted karst regulations. If the developer set aside the Karst Conservation Easement (KCE) on just the main city parcel, there would still be about 2.5 acres left to develop, which the EC does not consider a hardship.

The EC believes that the changes made from the first hearing, moving the building footprint a few feet and changing a bit of the stormwater design, still does not justify a variance in the regulations. The same variance will still be requested; construction within a sinkhole, the elimination of the Karst Conservancy Easement, and the elimination of the karst building setback.

The EC requests that the audience of this memorandum read the previous memoranda written by the EC to the Plan Commission, to familiarize themselves with some technical aspects of a karst system and why the city has regulations to protect them.

The EC does not believe that the changes made to the Site Plan that are related to the sinkhole are significant, and is still opposed to the variance of the 20.05.042 EN-05 [Environmental Standards; Karst Geology].

## **ISSUES OF CODE COMPLIANCE**

### 1.) KARST GEOLOGY

The EC was aware that the Plan Commission was uncomfortable with the old karst study, and recommended that the Petitioner commission an independent geologic or hydrogeologic consulting firm to evaluate the karst system at this location, which they did.

The report described that dye tracing showed that this sinkhole leads directly to Stony Springs East spring with minimal filtration. “Therefore it is critical to maintain or improve the quality of water draining to the Sinkhole.”

The report also recommended that “a low salt, no herbicide/pesticide spray policy should be considered for the Site.” The EC also recommends that this be made a requirement of the Site. (The term pesticide includes all of the following: herbicide, insecticide, insect growth regulator, nematicide, termiticide, molluscicide, piscicide, avicide, rodenticide, predacide, bactericide, insect repellent, animal repellent, antimicrobial, fungicide, disinfectant (antimicrobial), and sanitizer.)

The report stated that it is likely that erosion and siltation during construction could create a large impact on the sinkhole and the groundwater regime. However, the report is incorrect to say that no excavation will occur inside the 852 foot contour line defining the sinkhole. The plan shows that the edge of the building will be touching that contour line (it is impossible in the real world to construct a building without going outside the line drawn on a plan.) Also, the street, sidewalk, parking, grading, and fill placement will all occur within the sinkhole.

It is possible, perhaps even likely, that a sinkhole or spring that is not yet visible on the surface will be exposed during excavation. The EC recommends that the Petitioner have a plan ready to address what will be done when they expose another sinkhole or a spring. This plan should be crafted and submitted to the Planning and Transportation Department for approval.

In a karst drainage system it is possible for changes to occur rapidly and without warning; that is one of many reasons to protect these systems. There are many examples of springs or wells that have suddenly stopped producing water, or a sinkhole that instantaneously collapses when it had been gradually subsiding before. Because the water regime is partly underground, it may not be visible on the surface that changes have occurred, or are about to, in the subsurface.

## **ISSUES OF SOUND ENVIRONMENTAL DESIGN**

### 2.) GREEN BUILDING & SITE DESIGN

The EC is pleased that the Petitioner committed to several “green building” features including low flow appliances, roofing material with a solar reflective index of 0.65, an area for recycling, all LED lighting, and permeable pavers. The EC recommends a couple more green building practices be employed that would really make these buildings a step above most others in town.

a. Use locally sourced, real limestone or sandstone instead of cast concrete or concrete blocks on

the facade of the building. Concrete building materials carry a large environmental footprint and are not produced here in our backyard like limestone is. Using locally produced and sourced materials ensures a smaller environmental footprint and enhances the community sense of the development.

b. Install solar photovoltaic cells to reduce the use of greenhouse-gas emitting pollutants.

### **EC RECOMMENDATIONS**

- 1.) The site plan shall comply with all karst protection standards in the UDO.
- 2.) The Petitioner shall make a commitment to use no pesticides, and a minimal amount of salt chemicals on the site.
- 3.) The Petitioner shall create a plan to be approved by the Planning and Transportation Department that describes what will be done in the case of revealing other karst features during excavation.
- 4.) Along with the green building practiced already committed to, the Petitioner should use locally sourced limestone or sandstone, and install solar photovoltaic cells to make these buildings some of Bloomington's greenest high performance, low-carbon footprint structures.

# MEMORANDUM

Date: February 24, 2016

To: Bloomington Plan Commission

From: Bloomington Environmental Commission

Through: Linda Thompson, Senior Environmental Planner

Subject: SP-1-16, Mother Bear's Pizza Commercial Site, Three Guys Funding  
1909 West 3<sup>rd</sup> Street

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The purpose of this memo is to convey our environmental concerns and recommendations with the hope that action will be taken to improve the environmental integrity of this proposed plan. The request is for a Board of Zoning Appeals recommendation for a Variance to the Environmental Standards; Karst Geology (20.05.042), and a Site Plan approval for three commercial buildings within the CA zoning district.

The EC is opposed to this environmental-protection variance, and believes that the cumulative effect of encroachment is deleterious to the karst system, and earlier precedence does not justify further damage. In other words, previous sinkhole filling does not justify further sinkhole filling.

Part of this site lies within one of Bloomington's largest known sinkholes. For this particular development design to be built, a variance from our Bloomington Municipal Code (BMC) would need to be granted, and our publically-vetted karst regulations would be disregarded. If the developer set aside the Karst Conservation Easement (KCE) on just the main city parcel, there would still be about 2.5 acres left to develop.

There have been past encroachments into this sinkhole on adjacent properties, some of which were executed prior to city prohibitions, carried out illegally, or granted a legitimate variance by the city. There were karst preservation variances granted to Swifty in 2015 for work done on existing fill that had been in place for a very long time, and to Advanced Auto in 2005 to fill a large section of the sinkhole for development of the store; and an after-the-fact variance to Don Cowden Enterprises in 2004 for fill that was placed in the sinkhole without a variance.

The sinkhole that extends onto this property covers about ten (10) acres. This is depicted clearly on aerial photographs from 1939 viewed in three dimensions with a stereo zoom transfer scope, on the U.S.G.S. 7.5 topographic map Bloomington Quadrangle from 1956, and the City of Bloomington geographic information system (GIS). Although this information makes the fact that this is a sinkhole indisputable, the EC confirmed it through eight (8) additional sources in 2004.

Past dye-trace results show that this sinkhole is a direct, stormwater conduit to Stoney Springs

East, which is adjacent to, and flows immediately into Twin Lakes City Park. In one study of this sinkhole-spring system, the dye traveled from the sinkhole to the spring the quickest of all the dye traces performed in the study area. This indicates a direct route that performs the least amount of filtration of the underground streams in this study area.

This sinkhole is not unusual in its breadth or depth. It has survived as one of the larger ones left within the municipal boundaries; however, to the west and the north of this site are sinkholes more than twice its size, and still within the municipal boundary. This sinkhole is surrounded by additional sinkholes and springs of all sizes, and is part of a vast underground system. The main \*swallow hole grouping is located near the far southwestern side of the sinkhole.

**\*swallow hole:** A place where water disappears underground in a limestone region. A swallow hole generally implies water loss in a closed depression or blind valley.

**swallet:** (British) A place where water disappears underground in a limestone region. Swallet may refer to water loss into alluvium at a streambed, even though there is no depression.

A number of years ago, the EC penned several memorandums to both the BZA and the Plan Commission attempting to dissuade them from allowing fill and development in this sinkhole. This attempt failed and variances were granted. As further background to describe the EC's rationale, those old memos are attached for your reference.

## **ISSUES OF CODE COMPLIANCE**

### 1.) KARST GEOLOGY

The Bloomington Municipal Code, Title 20.05.042 Environmental Standards; Karst Geology, states that no land-disturbing activity, permanent or temporary structures, or the placement of any fill material shall be allowed within a KCE (Karst Conservancy Easement). Also, stormwater discharge into a karst feature shall not be increased over its pre-development rate. In addition, such discharge into a karst feature shall not be substantially reduced from pre-development conditions.

The karst feature is defined as the last closed contour of the sinkhole and is about 852 ft. above sea level. A twenty five (25) foot KCE buffer and a 10 foot building setback, as described in the BMC, would be measured horizontally from there. The EC believes that these protective regulations should be followed, and no variance to skirt them should be granted.

## **ISSUES OF SOUND ENVIRONMENTAL DESIGN**

### 1.) GREEN BUILDING & SITE DESIGN

The Petitioner has not committed to any "green building" features. The EC recommends that green building practices be employed at this site, thus we offer some specific recommendations that include the following three actions.

- a. Use locally-sourced, real limestone or sandstone instead of cast concrete or concrete blocks on

the facade of the building. Concrete building materials carry a very large environmental footprint, and are not produced here in our backyard like limestone is. Using locally-produced and sourced materials ensures a smaller environmental footprint and enhances the community sense of the facility.

- b. Use roofing material that is not simply white, but also contains reflective material. A white roof should have a minimum initial Solar Reflective Index of 0.65, and an aged index of 0.55. It should be overlaid with a reflective coating or covered with a white, granulated cap sheet.
- c. Install solar photovoltaic cells to reduce the use of greenhouse-gas emitting pollutants.

Green building and environmental stewardship are of utmost importance to the people of Bloomington and sustainable features are consistent with the spirit of the Unified Development Ordinance (UDO). Additionally, they are supported by Bloomington's overall commitment to sustainability and its green building initiative (<http://Bloomington.in.gov/greenbuild>). Sustainable building practices are explicitly called for by the Mayors' Climate Protection Agreement signed by former Mayor Kruzan; by City Council Resolution 06-05 supporting the Kyoto Protocol and reduction of our community's greenhouse gas emissions; by City Council Resolution 06-07, which recognizes and calls for planning for peak oil; and by a report from the Bloomington Peak Oil Task Force, *Redefining Prosperity: Energy Descent and Community Resilience Report*.

## 2.) RECYCLING

The EC recommends that space be allocated for recyclable-materials collection, which will reduce the facilities' carbon footprint and promote healthy indoor and outdoor environments. Recycling has become an important norm that has many benefits in energy and resource conservation. Recycling is thus an important contributor to Bloomington's environmental quality and sustainability and is expected in a 21<sup>st</sup>-century structure.

## EC RECOMMENDATIONS

- 1.) The site plan shall comply with all karst protection standards in the UDO.
- 2.) The Petitioner should apply green building and site design practices to create a high performance, low-carbon footprint structure.
- 3.) The Petitioner should provide space for recyclable materials to be stored for collection, and a recycling contractor to pick it up.

## MEMORANDUM

**TO:** City of Bloomington Board of Zoning Appeals

**FROM:** Environmental Commission

**THROUGH:** Linda Thompson, Senior Environmental Planner

**DATE:** January 14, 2005

**SUBJECT:** V- 55 - 04 Third St. & Cory Lane Sinkhole

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This memorandum contains environmental information and recommendations regarding a variance from the Bloomington Municipal Code, 20.06.05.02 Standards for Sites Having Environmental Constraints -Karst Terrain, Wetlands, Steep Slopes, Water Resources. The Bloomington Environmental Commission (EC) has reviewed the petition and has the following comments and recommendations that should be considered prior to a decision on the variance. The comments that are italicized behind the symbol “►” are the EC’s highest priorities.

### **Site Description:**

The site of about ten (10) acres lies within a single sinkhole. This is depicted clearly on aerial photographs from 1939 viewed in three dimensions with a stereo zoom transfer scope, and on the U.S.G.S. 7.5 topographic map Bloomington Quadrangle from 1956. (See attachment 1). Although this information makes the fact that this is a sinkhole indisputable, the EC confirmed it through an independent, world-renowned karst consultant, P.E. LeMoreaux, and the Indiana Geological Survey.

Past dye-trace results show that this sinkhole is a direct, stormwater conduit to Stoney Springs East, adjacent to Twin Lakes City Park. In fact, in one study of this sinkhole-spring system, the dye traveled from the sinkhole to the spring the quickest of all the dye traces performed in the study area. (See attachment 2). From “A Karst Groundwater Study To Delineate The Quarry Spring Basin Groundwaters Near The Lemon Lane Landfill, West-Central Bloomington, Indiana” James Fitch, Jr., 1994). This indicates a direct route that performs the least amount of filtration of the underground streams in this study area.

The Third and Cory sinkhole is not unusual in its breadth or depth. It is one of the larger ones within the municipal boundaries. However, to the west and the north of this site are sinkholes more than twice its size, and still within the municipal boundary. This sinkhole is surrounded by additional sinkholes and springs of all sizes, and is part of a vast underground system.

## **Environmental Concerns and Recommendations:**

A.) The EC recommends denial of the variance for many reasons. The following outlines the main reasons.

1. ► *The overwhelming reason for recommending denial of this variance is that the petition is in direct conflict with the City's Zoning Ordinance (ZO) because the site lies, both horizontally and vertically, within a sinkhole (small exception on far west side). By allowing one developer to disregard the ZO sets the precedence for anyone else to as well. The Bloomington Municipal Code (BMC) clearly states under 20.06.05.02 (d) Environmental Review Plan for Karst Terrain (C);*

*"For non-residentially zoned areas, any land disturbing activity, including the construction of buildings or pavements over, or within a minimum of twenty-five feet from the last closed contour line of a surface karst feature is prohibited. The last closed contour line will be defined as shown on the City of Bloomington's Geographic Information System (GIS)."*

*This ordinance was promulgated Oct.4, 2001. The EC is uncertain why or how the ordinance was previously disregarded and on Jan. 31, 2003 a Certificate of Zoning Compliance (application # C02-358, grading –Engineering # C02-GRD-021) was issued by the City. Subsequently, most of the northern portion of the sinkhole was filled. The EC finds no justification to continue this behavior, and believes it would be irresponsible of them to agree with approval of this proposal.*

2. ► *Of high concern to the EC is that in 2003 the Planning staff decided not to follow the ZO, and create a new criterion for this sinkhole and the variance without any public input. This was a large policy issue. The EC had no knowledge of it, therefore had no input on this action at the time. Because this creates the impression of impropriety, the EC would like some assurance that this will not be repeated.*

3. ► *The EC believes that there is no way to avoid an unwanted precedent for filling in other sinkholes if this after-the-fact variance is granted.*

4. ► *Although the land owner has already filled part of the sinkhole, the current after-fill contour lines show that the site is still below and within the 25 ft. buffer of the last closed contour (between 850' and 860' amsl). Therefore, regardless of the fill, the plan still does not comply with the ZO with respect to karst features. The EC believes that because the ordinance became effective before both the grading permit and this variance were requested, there is no justification for considering a denial of this variance a "taking" of property.*

5. ► *The BMC Zoning Ordinance (20.06.05.02) also states that an Environmental Review Plan for Karst Terrain shall be submitted. Included in the Plan shall be "A comprehensive report by a geotechnical consultant or professional engineer..." The EC*

*believes that neither the geotechnical report nor the Plan was comprehensive enough to make a scientific decision on the validity of building inside a sinkhole. (See attachment 3). At the least, there still needs to be geophysical research completed to prove that the area around the swallow hole and the proposed detention pond will be able to hold water and have the structural integrity to hold all the added weight. The EC bases this belief on the vast experience of the Commissioners, reports compiled by other consulting companies that specialize in karst issues, and the fact that three other swallow holes currently exist on the property.*

6. ► *The EC is very uncomfortable with the plan that the City buy and assume responsibility for the detention pond, the swallow hole, and the water quality in a karst system, for a private developer.*

7. ► *The EC believes that the most recent plan submitted is too vague to make a recommendation on. There is no current grading plan: it appears that some lots are too small for development and water quality BMPs; and there is no information on the size and effectiveness of the “biofiltration islands” depicted.*

8. ► *The EC believes that allowing this one-time ZO change will not meet the City’s ZO, but the County’s as well. At least two rules have been disregarded. The first is filling in a sinkhole. The second is eliminating the buffer zone than the County.*

9. ► *The EC requests proof, via the petitioner, from EPA that this swallow hole is not classified as a class V injection well. It also requests proof that the site does not need a 401 Certification from IDEM.*

10. The EC has concerns about the lack of environmental protection measures proposed for the subdivision plan and one site plan. However, because this meeting is intended to address only the zoning variance, the EC will not elaborate on these shortfalls.

## MEMORANDUM

**TO:** City of Bloomington Plan Commission

**FROM:** Environmental Commission

**THROUGH:** Linda Thompson, Senior Environmental Planner

**DATE:** 4 April 2005

**SUBJECT:** SP-25-04 Advanced Auto Parts, and Don Cowden Enterprises  
Third St. & Cory Lane

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This memorandum contains environmental information and recommendations regarding a subdivision request from one petitioner, and a site plan request from a second petitioner. The Bloomington Environmental Commission (EC) has reviewed these two petitions and has the following comments and recommendations that should be taken into account prior to approval of the requests.

### **Site Description:**

The site of about ten (10) acres lies within a single sinkhole. This is depicted clearly on aerial photographs from 1939 viewed in three dimensions with a stereo zoom transfer scope, on the U.S.G.S. 7.5 topographic map Bloomington Quadrangle from 1956, and the City of Bloomington geographic information system (GIS). Although this information makes the fact that this is a sinkhole indisputable, the EC confirmed it through eight (8) additional sources.

Past dye-trace results show that this sinkhole is a direct, stormwater conduit to Stoney Springs East, which is adjacent to, and flows immediately into Twin Lakes City Park. In one study of this sinkhole-spring system, the dye traveled from the sinkhole to the spring the quickest of all the dye traces performed in the study area. This indicates a direct route that performs the least amount of filtration of the underground streams in this study area.

The Third and Cory sinkhole is not unusual in its breadth or depth. It has survived as one of the larger ones left within the municipal boundaries; however, to the west and the north of this site are sinkholes more than twice its size, and still within the municipal boundary. This sinkhole is surrounded by additional sinkholes and springs of all sizes, and is part of a vast underground system.

The main \*swallow hole grouping is located near the far southern side of the sinkhole. At the opposite side, near Third Street, and also on the east side behind the southernmost house are two additional groupings of swallow holes. Those on the east side of the site still have not been addressed by the petitioner.

The last closed contour of the sinkhole is about 852 ft. above sea level. A twenty five (25) foot

sinkhole buffer, as described in the Bloomington Municipal Code would be measured horizontally from there.

**\*swallow hole:** A place where water disappears underground in a limestone region. A swallow hole generally implies water loss in a closed depression or blind valley.

**swallet:** (British) A place where water disappears underground in a limestone region. Swallet may refer to water loss into alluvium at a streambed, even though there is no depression.

### **Environmental Concerns and Recommendations:**

1. A twenty-five (25) foot sinkhole buffer should be required even though a variance for filling in a sinkhole was granted by the BZA. The twenty five (25) feet should be measured from the 842 ft. contour line, which is the 100-year flood elevation calculated for the sinkhole.
2. Although the EC believes that only lots 1, 2, and 4 should be built upon, they feel strongly that lots five (5) and seven (7) are too small for development and proper protection of the swallow hole. The EC recommends that lots five and seven remain undeveloped.
3. The EC recommends that no additional fill be allowed in this sinkhole. Most of the sinkhole was filled prior to obtaining a proper zoning variance, and the EC sees no justification in continuing to fill an important sinkhole.
4. The EC believes there should be a quality geophysical study to determine if lot three (3) will structurally hold a detention pond. Two (2) soil borings does not constitute a comprehensive geophysical study of a sinkhole.
5. Although the petitioner for Advanced Auto has agreed to use all native plant material, which functions better than exotic plants for filtering and erosion control, the EC would like a condition of approval for the subdivision to include a restriction to native plants also.
6. The EC recommends past water quality data from Stoney Springs be located by the petitioner to use as a baseline for water quality prior to additional land disturbing activities. If no such data can be found, the petitioner shall collect baseline water quality data. Using a set schedule of at least quarterly, the petitioner shall monitor the water emitting from Stoney Springs to evaluate the impact of development within the sinkhole and the karst water system.
7. The petitioner should construct and maintain **maximum and redundant** soil erosion control measures on the site as a condition of approval.
8. The EC recommends no City Grading permit is issued until the DNR Rule 5 permit is issued. Although this is an IDEM/DNR regulation, if the sediment basins or their locations are not approved by DNR, the site plan will have to be modified. Strict erosion control measures are necessary at this site because of so much fill that has no record of any compaction.

## MEMORANDUM

**To:** City of Bloomington Plan Commission

**From:** Environmental Commission

**Through:** Linda Thompson, Senior Environmental Planner

**Date:** 2 May 2005

**Subject:** SP-25-04 Advanced Auto Parts, and Don Cowden Enterprises  
Third St. & Cory Lane

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The Bloomington Environmental Commission (EC) reviewed this dual petition and still strongly holds the opinion that this sinkhole should not have been filled in for development. However, because this opinion has been over ridden, the EC has narrowed its recommendations down to the following list. The EC asks that these recommendations be included as conditions of approval, if the Planning Commission decides to approve any part of the proposal.

Much information about why the EC believes it was a poor decision for the City to bypass several sections of its own ordinance to allow this sinkhole to be filled has already been given to the Planning Commission, Board of Zoning Appeals (BZA), Planning Department, and the Mayor. The EC is particularly disturbed that neither it nor the public was consulted for four full years while this development has been under consideration, during which time significant decisions have been made potentially to the detriment of our community's environmental health. The EC will not repeat all of the past issues in this memorandum, but has included some of them as an attachment for public information. However, a few quick chronological facts are as follows:

1. - 1994-1995                      Mr. Cowden buys property.
2. - May 1, 1995 (old) Zoning ordinance adopted, which states "...construction of buildings or pavements over, or within twenty-five ft. of a surface karst feature shall be avoided to the maximum extent possible".
3. - March 14 2001              Mr. Cowden is issued a grading permit.              (\*\*180 days = about September 14, 2001)
4. - Oct. 4, 2001 Mayor signed into law the current karst ordinance. "For non-residentially zoned areas, any land disturbing activity, including the construction of buildings or pavements over, or within a minimum of twenty-five feet from the last closed contour line of a surface karst feature is prohibited. The last closed contour line will be defined as shown on the City of Bloomington's Geographic Information System (GIS).

\*\*Also in ZO 20.06.05.03 I, Siltation and Erosion, Permits: "Duration. Permits shall be valid

for a period of one hundred eighty days, or run concurrently with the building permit or other construction authorizations, whichever is longer”.

5. - June 26, 2002 A Request for Additional Information from Planning was sent. “Approval from Plan Commission and /or BZA is required”. “Per BMC 20.06.05.03 (E) (6), this grading permit shall not be approved in advance of Plan Commission approval for commercial site plan on this property”. (Oct.4 2001 ord.)

6. - July 12, 2002 Planning sends letter to Mr. Cowden stating the original permit has expired. Therefore “staff has determined that the proposed land disturbing activity does not comply with BMC 20.06.05.02 (D) (2) (C) as amended 10/4/01”.

7. - Nov. 14, 2002 Letter from Smith Neubecker to Planning stating Mr. Cowden wanted to fill the site and requests a grading permit. Says using 100 yr. storm, the sinkhole would be filled to 837 ft. Requested they use 838 ft.

8. - Jan. 31, 2003 Certificate of Zoning Compliance issued by Planning.

9. - Feb 3, 2003 Grading Permit issued by Engineering Dept. (2 dates given; April 23, 2003).

10. - Jan 20, 2005 BZA grants an after-the-fact variance to Cowden to fill in a sinkhole. This was the only opportunity for public comment.

### **Recommendations:**

1. One of the remaining questions about this petition is the appropriate number of lots for this parcel. An after-the-fact variance to fill the sinkhole has already been granted by the BZA; therefore, that is not negotiable and even more fill is allowed to be added, and surely will be. Additional fill is not in question. The question becomes one of appropriate density of buildings and parking lots within the sinkhole. This can probably be controlled by the number of lots the site is divided into.

The EC believes that the south end of the parcel, closest to the swallow hole, should not be built upon. It can concede only to development of the northernmost end of the sinkhole, adjacent to Third Street. Therefore, the EC recommends the subdivision be configured differently. One reasonable option is to subdivide it into four (4) lots that better protect the swallow hole. A possible lot configuration is as follows:

- lots 4 and 5 combined into one lot,
- lot 3 remains as is, and sold to the City as planned,
- lot 2 remain as is,
- lots 1,6,7, and 8 be combined into one lot, and the road that extends to the south be eliminated.

This way, the developer can continue to have a place to bring excess dirt from other developments, sell business lots along Third Street, and still protect the swallow hole and sinkhole as much as possible.

2. The EC recommends creating a tree conservancy on the forested parts of the property. The conservancy should extend from Third Street on the west side of the parcel, southward to the south end of the property, then follow the southern boundary to the east property line. The width of the conservancy should follow the drip line of the trees. There is a clear community consensus, expressed in the GPP, to preserve and even expand tree cover in Bloomington. This part of the parcel presents an ideal opportunity for quality green space preservation.

3. The petitioner has agreed to implement a partial twenty-five (25) foot protective buffer around the 838 ft. contour line. The EC recommends the use of the 841 ft. contour line, which is the 100-year flood elevation calculated for the swallow hole by the petitioner. The EC further recommends that the buffer be implemented around the entire flood-elevation contour, not just the spots where it is convenient.

4. The EC recommends that water quality data from Stoney Springs be collected as a baseline prior to additional land disturbing activities, and that water quality be monitored during and after development. Without knowing what the current water quality is, and with no future monitoring to compare to it, there is no way to judge the outcome of development in a sinkhole and learn from our experiences for future policy making. When the petitioner creates a list of parameters intended to be measured during each sampling event, the parameters should be approved by the EC. The petitioner should set up a monitoring schedule of at least semi-annually (spring and fall), until the subdivision is built out completely, then annually for the first three years after build out is complete. Additional monitoring should be required of the City during and after Third Street improvements take place.

If the Planning Commission is unwilling to require monitoring as a condition of approval, the City should agree to monitor the water itself. If the City is going to take ownership of a stormwater management structure that captures runoff from private developments and Third Street, and sends the stormwater into a sinkhole that is known to lead to a City park, then it is reasonable that the City should be monitoring the quality in order to be accountable and responsible to the public and to the environment.

5. The EC recommends that the petitioner research the old clay tile that flows from offsite, apparently from the kennel adjacent to the property, directly into the swallow hole. The effluent from this pipe visually looks like soap and hair. Before the City buys lot 3 and takes responsibility for the water quality of the sinkhole, this pollution source should be remedied by the current landowner.

6. The EC recommends that Advanced Auto route the surface water exiting their biofiltration island, to the upslope end of the water quality basins (nearest Third Street). Routing the water through the entire filtration process is necessary to ensure adequate filtration of the stormwater runoff. The petitioner for the majority of the site has agreed to maximum and redundant BMPS, and the EC believes this corner (albeit a separate petitioner) is no exception.

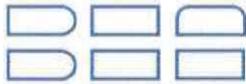
7. Advanced Auto has not shown a catchment swale similar to that on the west side of the site that diverts any stormwater that overflows from the bio filtration island to the head of the constructed filtration basins (detention), such that it can be filtered. The building pad on lot 4 is higher than the one on the proposed lot 5, so it is not apparent how this can be achieved. The EC recommends the grading on lot 4 be modified to include a swale that can traverse from the south end of lot 5 all the way to Third Street, then empty into the constructed detention basin to capture overflow stormwater.

8. Although the petitioner for Advanced Auto has agreed to use all native plant material for their landscaping, the EC recommends that the entire subdivision should also be required to use all native plants for future landscaping, and for the slopes that will be created adjacent to the swallow hole and the water quality basins.

9. The EC recommends that the petitioner construct and maintain maximum and redundant soil erosion control measures on the site. The petitioner verbally agreed to this request, but no plans have been submitted.

10. The EC recommends no City Grading permit is issued until the DNR Rule 5 permit is issued. Although this is an IDEM/DNR regulation, if the sediment basins or their locations are not approved by DNR, the site plan will have to be modified. Strict erosion control measures are necessary at this site because of so much fill that has no record of any compaction. The petitioner has verbally agreed to this request.





BYNUM FANYO & ASSOCIATES, INC.

24  
ARCHITECTURE  
CIVIL ENGINEERING  
PLANNING

February 24, 2016

City of Bloomington Board of Zoning Appeals  
401 N. Morton Street  
Bloomington, Indiana 47404

RE: Mother Bears Pizza Commercial Site  
1909 West Third Street

Dear BZA:

Please accept this letter and findings of fact as our request to seek a variance from UDO 20.05.042 Karst Geology. Our property is partially located in the last closed contour of a large sinkhole located west of Cory Lane approximately 500' from our west property line. This karst feature has been the subject of several previous variance request dating back to 2005 when a geotechnical study was performed and recommendations were made for development to occur within the limits of the last closed contour. This karst feature contains within its limits approximately 14 single family homes, several commercial properties and 1000 feet of West Third Street and Cory Lane.

The recommendations that were made and accepted by the City as adequate to protect the karst feature and existing and proposed development include the creation of three separate protection zones as follows:

1. 838' contour elevation, no disturbance limit. The geotechnical report actually stated the 835' contour but staff recommended to and the BZA approved the limit at 3' higher than the report.
2. 841' contour elevation, no loss of storage capacity in allowed. Grading and filling would be allowed to occur between the 838' and 841' contour elevation as long as the storage volume is preserved.
3. 845' contour elevation, minimum elevation of building pads. This elevation is the minimum elevation necessary to create building pads 4' above the 100-year flood elevation of 841 and 2' higher than that recommended by DNR for flood plains.

Our client's property lies completely out of all of these protection zones. The lowest closed contour on this property is 848. The last closed contour of the karst feature is 852. The site grading plan was developed with the cooperation of the City and County drainage engineers and significantly less storm water from our building or parking areas will drain to this karst feature. With the exception of our entry drive to Cory Lane all storm water will be directed north and east eliminating the impact on this feature.

528 NORTH WALNUT STREET  
812-332-8030

BLOOMINGTON, INDIANA 47404  
FAX 812-339-2990

Petitioner's Statement



BYNUM FANYO & ASSOCIATES, INC.

25  
ARCHITECTURE  
CIVIL ENGINEERING  
PLANNING

With the above protection zones, the storm water collection, filtering and detention systems and the previously granted variances granted to this chapter of the UDO we offer the following findings of fact:

1. *The approval will not be injurious to the public health, safety, morals and general welfare of the community.*

**Finding:** No injury will result as a result of the protection limits being exceeded with this project.

2. *The use and value of the area adjacent to the property included in the development standards variance will not be affected in a substantially adverse manner.*

**Finding:** No adverse impacts will occur with the approval of this request as the proposed property exceeds the limits established for the protection of the karst feature.

3. *The strict application of the terms of the UDO will result in practical difficulties in the use of the property; that the practical difficulties are peculiar to the property in questions; that the development standards variance will relieve the practical difficulties.*

**Finding:** The peculiar condition is that this karst feature has been thoroughly studied both for the hydrologic and hydraulic conditions as well as its geotechnical condition in an effort to allow development within its last closed contour. These studies have identified protection zones and the City has further increased these zones in order to protect the integrity of the karst feature. The result of the protection zones has effectively achieved the same protection of this karst feature as the ordinance as written.

Not approving this variance will reduce the ability of accessing the rear of the commercial structure with emergency and commercial vehicles in an efficient manner when there is no necessity to do so based upon the studies and protection zones implemented by the city and the BZA.

Please feel free to contact us with any questions or concerns you may have. We thank you in advance for your consideration of our request.

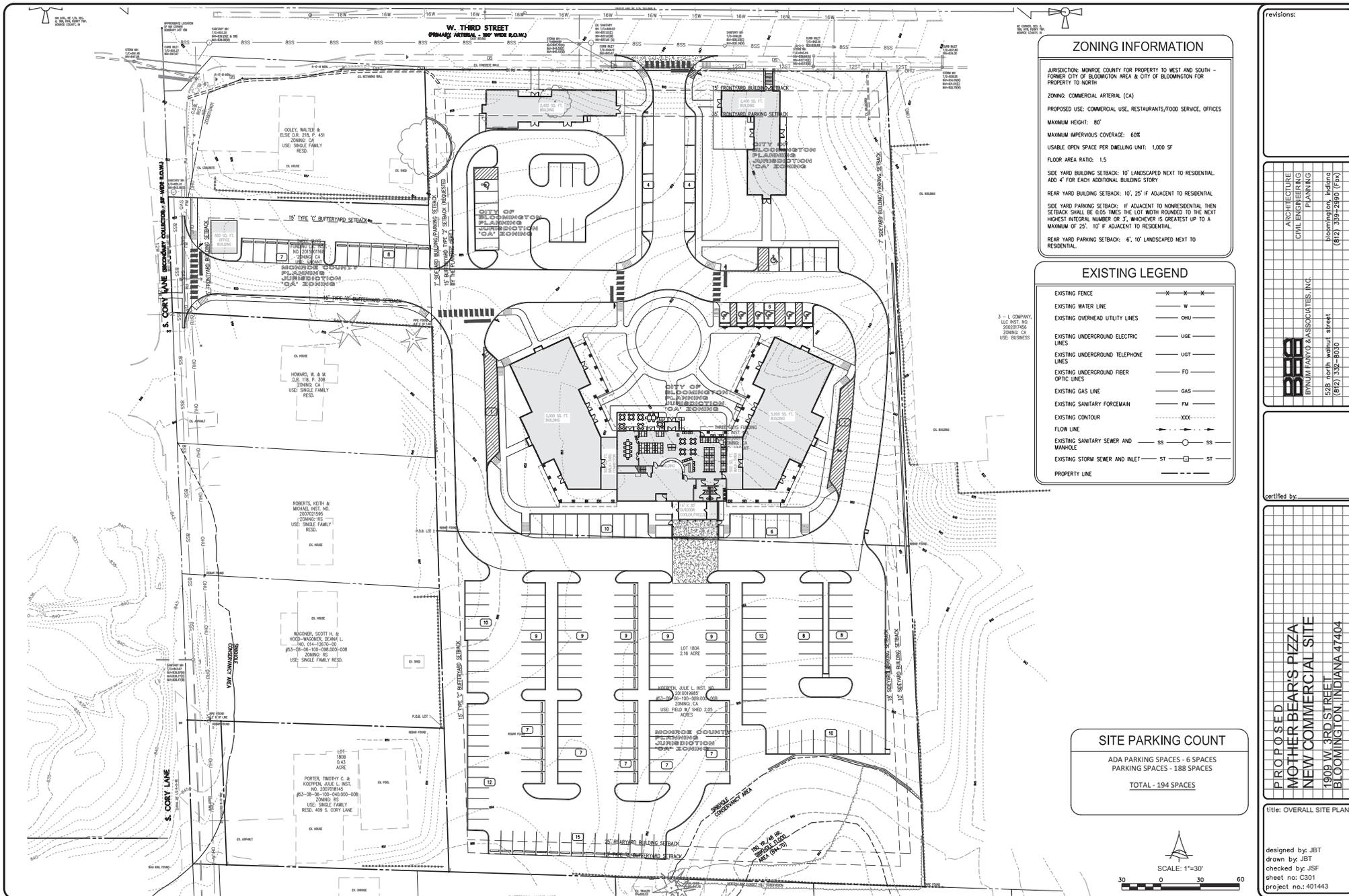
Sincerely,

Jeffrey S. Fanyo, P.E., CFM  
Bynum Fanyo and Associates, Inc.

528 NORTH WALNUT STREET  
812-332-8030

BLOOMINGTON, INDIANA 47404  
FAX 812-339-2990

Petitioner's Statement



### ZONING INFORMATION

JURISDICTION: MONROE COUNTY FOR PROPERTY TO WEST AND SOUTH - FORMER CITY OF BLOOMINGTON AREA & CITY OF BLOOMINGTON FOR PROPERTY TO NORTH

ZONING: COMMERCIAL ARTERIAL (CA)

PROPOSED USE: COMMERCIAL USE, RESTAURANTS/FOOD SERVICE, OFFICES

MAXIMUM HEIGHT: 80'

MAXIMUM IMPERVIOUS COVER: 60%

USABLE OPEN SPACE PER DWELLING UNIT: 1,000 SF

FLOOR AREA RATIO: 1.5

SIDE YARD BUILDING SETBACK: 10' LANDSCAPED NEXT TO RESIDENTIAL. ADD 4' FOR EACH ADDITIONAL BUILDING STORY

REAR YARD BUILDING SETBACK: 10', 25' IF ADJACENT TO RESIDENTIAL

SIDE YARD PARKING SETBACK: IF ADJACENT TO NONRESIDENTIAL THEN SETBACK SHALL BE 0.05 TIMES THE LOT WIDTH ROUNDED TO THE NEXT HIGHEST INTEGRAL NUMBER OR 3', WHICHEVER IS GREATEST UP TO A MAXIMUM OF 25'. 10' IF ADJACENT TO RESIDENTIAL

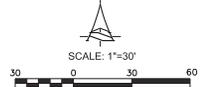
REAR YARD PARKING SETBACK: 6', 10' LANDSCAPED NEXT TO RESIDENTIAL

### EXISTING LEGEND

EXISTING FENCE	---
EXISTING WATER LINE	W
EXISTING OVERHEAD UTILITY LINES	OHU
EXISTING UNDERGROUND ELECTRIC LINES	UGE
EXISTING UNDERGROUND TELEPHONE LINES	UGT
EXISTING UNDERGROUND FIBER OPTIC LINES	FO
EXISTING GAS LINE	GAS
EXISTING SANITARY FORCEMAIN	FM
EXISTING CONTOUR	---XXX---
FLOW LINE	---
EXISTING SANITARY SCHER AND MANHOLE	SS ○ SS
EXISTING STORM SEWER AND INLET	ST □ ST
PROPERTY LINE	---

### SITE PARKING COUNT

ADA PARKING SPACES - 6 SPACES  
 PARKING SPACES - 188 SPACES  
**TOTAL - 194 SPACES**



revisions:

ARCHITECTURE  
 CIVIL ENGINEERING  
 PLANNING

**BEA**  
 BYNUM FANTO & ASSOCIATES, INC.  
 628 North Walnut Street  
 Bloomington, Indiana  
 (812) 338-2900 (Fax)

certified by:

**PROPOSED**  
**MOTHER BEAR'S PIZZA**  
**NEW COMMERCIAL SITE**  
 1908 W. 3RD STREET  
 BLOOMINGTON, INDIANA 47404

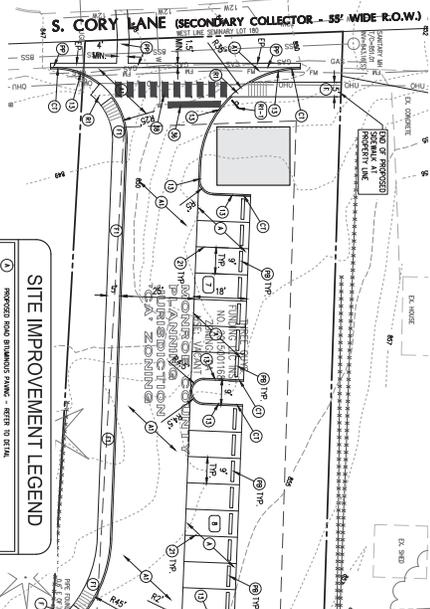
title: OVERALL SITE PLAN

designed by: JBT  
 drawn by: JBT  
 checked by: JSF  
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 project no: 401443

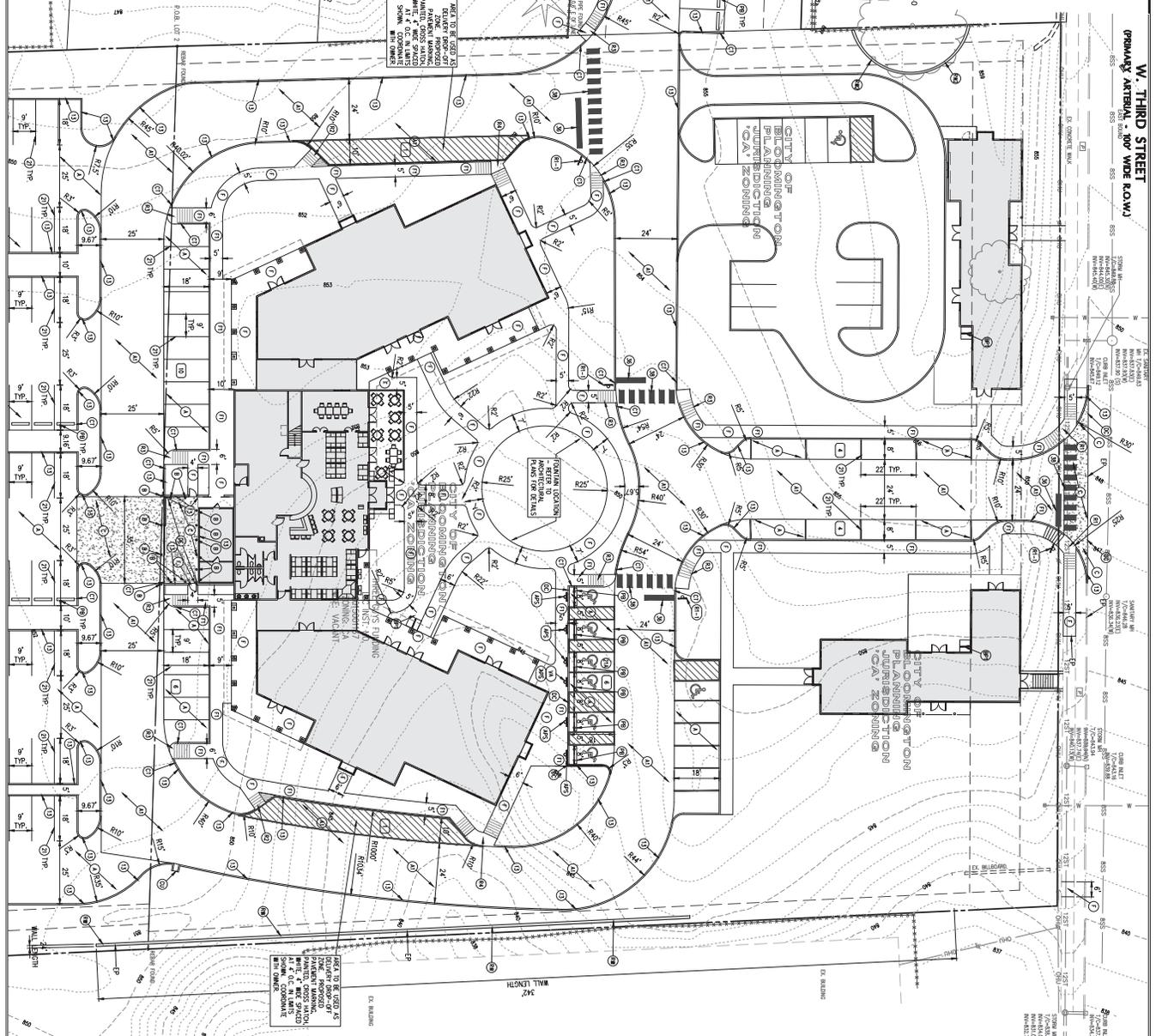
**NOTES TO CONTRACTOR**

CONTRACTOR SHALL VERIFY ALL UTILITY CONDITIONS & DEPT'S AND NOTIFY ENGINEER PRIOR TO ANY EXCAVATION. NO PAVERMENT SHALL BE LAID OR CONTRACTOR FOR UTILITY RESTRICTION OR UNDERGROUND CHANGES REQUIRED DUE TO CHANGING ESTIMATIONS.

THE CURRENT EDITIONS OF THE INDIANA DEPARTMENT OF TRANSPORTATION CITY OF BLOOMINGTON UTILITY SPECIFICATIONS IS TO BE USED WITH THESE PLANS



- SITE IMPROVEMENT LEGEND**
- 1. PROPOSED SIDE WALKWAY PAVING - REFER TO DETAIL
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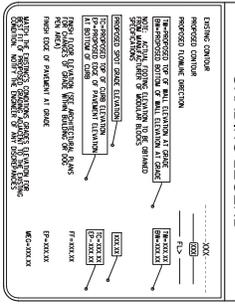
<p>designed by DUB                  drawn by DUB                  sheet no. 0302                  project no. 401443</p>	<p><b>PROPOSED                  MOTHER BEAR'S PIZZA                  NEW COMMERCIAL SITE</b></p> <p>1909 W. 3RD STREET                  BLOOMINGTON, INDIANA 47404</p>	<p>prepared by</p>	<p><b>BEA</b>                  BYNUM FANVO &amp; ASSOCIATES, INC.</p> <p>528 north walnut street                  (812) 332-8030</p>	<p>ARCHITECTURE                  CIVIL ENGINEERING                  PLANNING</p> <p>bloomington, indiana                  (812) 339-2990 (Fax)</p>	<p>PROVISIONS:</p>
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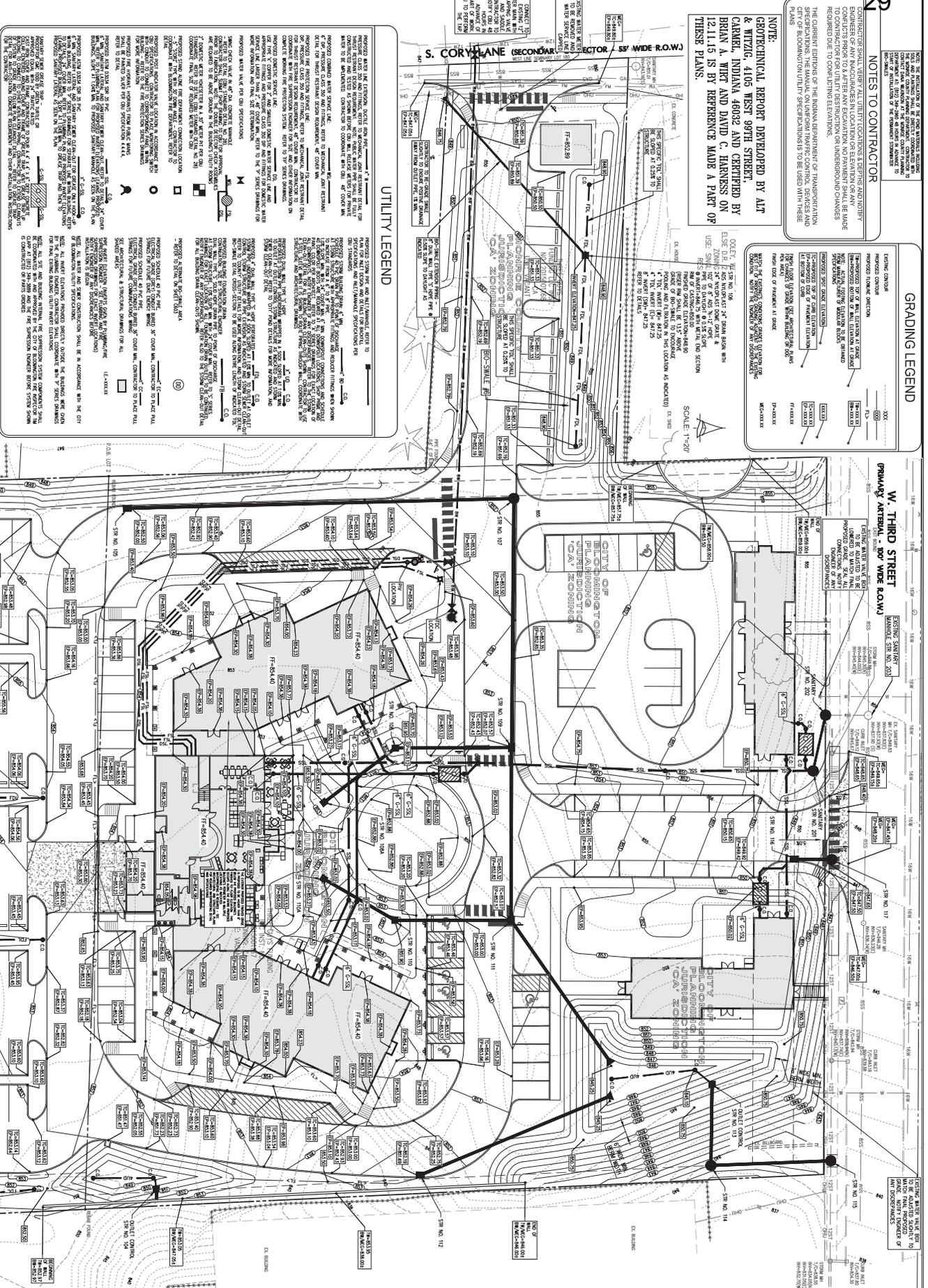
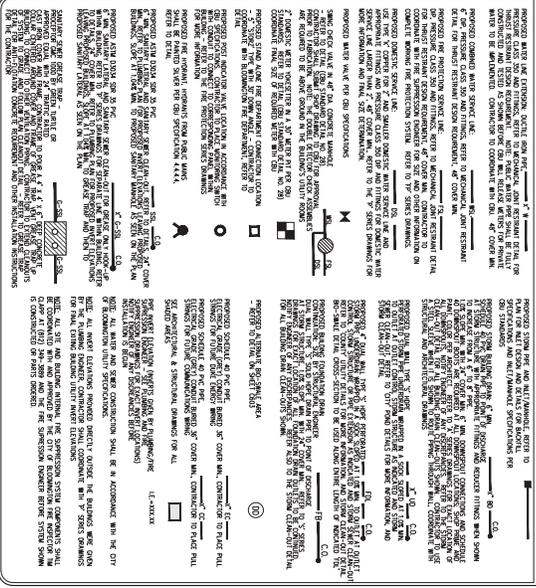
NOTES TO CONTRACTOR  
CONTRACTOR SHALL VERIFY ALL UTILITIES, EXISTING AND PROPOSED, PRIOR TO ANY EXCAVATION. NO AGENCY SHALL BE MADE RESPONSIBLE FOR ANY EXCAVATION. CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH ALL CITY SPECIFICATIONS TO BE USED WITH THESE PLANS.

NOTE:  
GEOLOGICAL REPORT DEVELOPED BY AIT & WITZIG, 4105 WEST 90TH STREET, CARMEL, INDIANA 46032, AND CERTIFIED BY BRIAN A. WITZIG AND DAVID C. HANNESS ON 12.11.16 IS BY REFERENCE MADE A PART OF THESE PLANS.

GRADING LEGEND



UTILITY LEGEND



W. THIRD STREET  
PRIMARY ARTERIAL (55' WIDE ROW)

CITY OF BLOOMINGTON  
PLANNING DEPARTMENT  
COMMUNITY DEVELOPMENT DIVISION

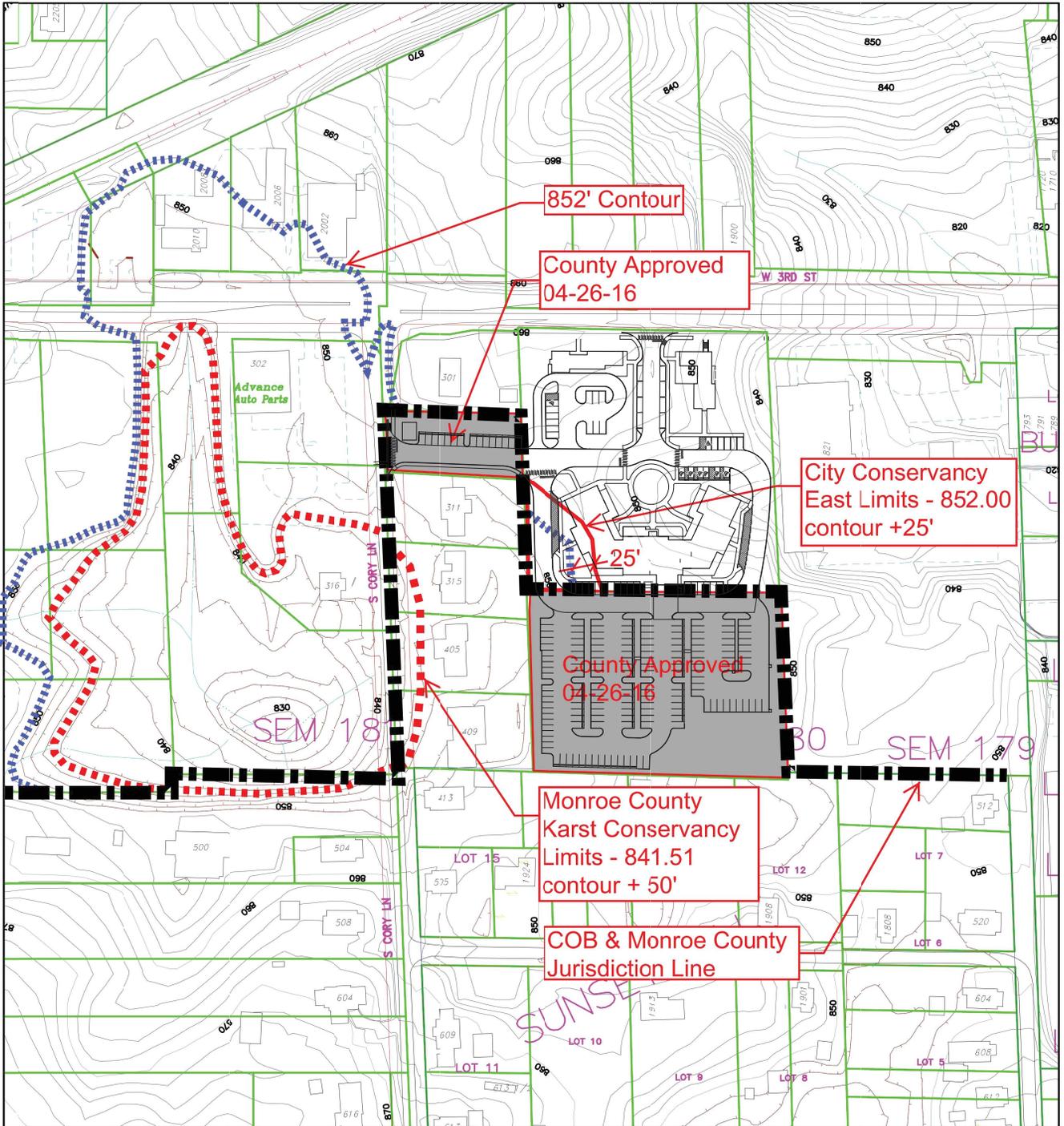
EXISTING METERS HAVE 500' OF 12" ALUMINUM SERVICE TO MAIN WATER SERVICE OF CITY OF BLOOMINGTON

PROPOSED  
MOTHER BEAR'S PIZZA  
NEW COMMERCIAL SITE  
1909 W. 3RD STREET  
BLOOMINGTON, INDIANA 47404

BYNUM FANTO & ASSOCIATES, INC.  
528 North Walnut Street  
(812) 332-8030

ARCHITECTURE  
CIVIL ENGINEERING  
PLANNING  
Bloomington, Indiana  
(812) 339-2990 (Fax)

designed by DUB  
drawn by DUB  
sheet no. 0401  
Project no. 401443



By: roachja  
8 Feb 16



City of Bloomington  
Planning & Transportation



Scale: 1" = 200'

For reference only; map information NOT warranted.

1211 S Walnut St  
Bloomington, IN 47401

Jeffrey S. Fanyo  
Bynum Fanyo and Associates, Inc.  
528 N Walnut St  
Bloomington, IN 47404

Subject:

**Cory Lane Karst Evaluation**

Date: April 14, 2016

Contact:

**Jason Krothe**

Phone:

**812-219-0210**

Email: [jnkrothe@hydrogeologyinc.com](mailto:jnkrothe@hydrogeologyinc.com)

**DRAFT**

Mr. Fanyo:

Hydrogeology Inc. has completed a karst evaluation for the property located at the southeast corner of Cory Lane and W 3<sup>rd</sup> St in Bloomington, Indiana (the Site, Figure 1).

I. Scope

The purpose of this study was to evaluate potential construction impacts to an approximately 10 acre sinkhole (the Sinkhole, Figure 2).

II. Generalized Site Geology

The Site is located within the Mitchell Plateau physiographic region, which is the primary karst forming region in Indiana. Bedrock at the Site ranges in elevation from 826.5 ft to 842.3 ft. This irregular bedrock surface is common in karst topography.

III. Sinkhole

The Sinkhole boundary is defined as the last closed topographic contour (852 ft, Figure 2), with 0.17 acres of the Site falling within the 852 ft contour. The lowest elevation of the Sinkhole, often referred to as the sinkhole eye, is approximately 400 ft southwest of the Site. The eye is likely to be the main drainage point for the sinkhole. The Sinkhole was dye traced to Stoney Springs East which is located 2300 ft to the southwest at a rate of 696 ft/hour (Fitch, 1994).

IV. Water Quality

Groundwater recharge in karst topography predominately occurs through sinkholes and swallets. Water infiltrates into a sinkhole or swallet, then flows along karst conduits and

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finally discharges to springs. There is minimal filtration of the water throughout this shallow groundwater cycle. Therefore, it is critical to maintain or improve the quality of water draining to the Sinkhole located to the southwest of the Site. The portion of the Site within the Sinkhole boundary will drain through a bio-swale prior to entering the main sinkhole area. The bio-swale is designed to remove a minimum of eighty percent of the total suspended solids (TSS). Additionally the grasses, shrubs and other plants will be used with the intention of degrading automotive pollutants from the parking surface.

In addition, to the bio-swale, a low salt no herbicide/pesticide spray policy should be considered for the Site. While the bio-swale should be effective in remediating drainage from the Site, limiting salt, herbicides and pesticides should improve the effectiveness of the bio-swale and achieve the goal of maintaining the existing quality of the water draining to the Sinkhole.

#### V. Water Quantity

The drainage plan for the Site calls for the same amount of drainage to be directed toward the Sinkhole as it currently receives. Development on the Site should not impact water quantity to the sinkhole for that reason.

#### VI. Erosion and Sediment Control

Impacts to the sinkhole are most likely to occur due to erosion and sediment mobilization during construction. Erosion and sediment control will be critical to preventing impacts to the sinkhole. The Rule 5 plan for the Site has been approved by Monroe County. No excavation will occur within the 852 ft contour, which will prevent exposing karst conduits within the Sinkhole. If erosion and sediment controls, as outlined in the Rule 5 plan, are followed correctly, the development within the 852 ft contour should not result in impacts from erosion and sediment.

#### IV. Summary

The Site is located in an area of karst topography including 0.17 acres of an approximately 10 acre Sinkhole inside the property boundary. In order to limit impacts to the Sinkhole from development on the Site, water quality and quantity to the sinkhole should be maintained. The Sinkhole was dye traced 2300 ft to the southwest to Stoney Springs East, at a rate of 696 ft/day. Very little filtration is likely to occur to water entering the Sinkhole and flowing to Stoney Springs East. All water draining from the Site to the Sinkhole will flow through a bio-swale. The bio-swale is designed to remove up to 80% of the TSS and remediate automotive pollutants from the parking lot. Additionally, a low salt, herbicide and pesticide policy is recommended for the Site.

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The existing volume draining to the sinkhole is maintained in the Site design. The same amount of drainage will be directed toward the Sinkhole as it currently receives, so no impacts to water quantity are expected.

Impacts to the Sinkhole are most likely to occur during construction at the Site due to erosion and sediment mobilization. The approved Rule 5 plan, if implemented correctly, should prevent impacts to the Sinkhole from erosion and sediment. No excavation will occur in the 852 ft Sinkhole boundary, which will prevent exposing karst conduits within the sinkhole.

The current site drainage plan, Rule 5 plan, and low salt/spray policy should prevent impacts to the Sinkhole.

Sincerely,

Hydrogeology Inc.



Jason N. Krothe, LPG  
President

hydrogeology inc.

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Bloomington, IN 47401

#### References

Fitch, James R., Jr. "A Karst Groundwater Study To Delineate The Quarry Spring Basin Groundwaters Near The Lemon Lane Landfill, West-Central Bloomington, Indiana." Thesis. Indiana University, 1994. Print.

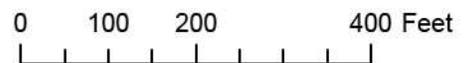


Figure 1: Site

0 100 200 400 Feet



Figure 2: Sinkhole defined by 852 ft topographic contour (red line).





Jacqueline Scanlan <scanlanj@bloomington.in.gov>

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## Fwd: Fw: 2nd Mother Bears Location

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Linda Thompson <thompsol@bloomington.in.gov>

Mon, Apr 4, 2016 at 9:11 AM

To: James Roach <roachja@bloomington.in.gov>, Jacqueline Scanlan <scanlanj@bloomington.in.gov>

FYI

----- Forwarded message -----

From: **Scott Wagoner** <shwags4@gmail.com>

Date: Sun, Apr 3, 2016 at 2:30 PM

Subject: Fw: 2nd Mother Bears Location

To: [environment@bloomington.in.gov](mailto:environment@bloomington.in.gov)

--- Original Message ---

**From:** Scott Wagoner

**To:** [enviroment@bloomington.in.gov](mailto:enviroment@bloomington.in.gov)

**Sent:** Sunday, April 03, 2016 2:23 PM

**Subject:** 2nd Mother Bears Location

Hello,

I recently read an article in the Bloomington Herald about your office's concern about developing further business within a Karst topography at 1909 W 3rd.

My wife and I recently purchased a home at 405 S Cory Lane and were aware, before we purchased the property, the land to the East may become a 2nd Mother Bears. After attending a public hearing and studying the potential development, we would like to express our desire to keep this area as is, to protect what is left of the Karst area.

Also, local inhabitants include a thriving community of deer, cooper hawks, red tail hawks, many species of woodpeckers and other native birds, fox squirrels, and many other types of wildlife. We oppose razing that kind of habitat and threatening a geological formation's destruction.

Thank you for any feedback.

Scott and Deana Wagoner

—  
Linda Pride Thompson  
Senior Environmental Planner  
Environmental Commission Administrator  
Planning and Transportation Department  
City of Bloomington  
401 N. Morton St., Suite 130  
PO Box 100  
Bloomington, Indiana 47402  
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Remonstrance Letter