



**Narrative to Support Special Exception Application
FOR
PROPOSED WORK AT 1500 STATE FARM BLVD**

IN PARTNERSHIP WITH



AND



Bonumose Narrative to Support Special Exception Application

This is a formal written request to accompany the Application for a Special Exception on behalf of Bonumose, Inc. and regarding Section 23.2.1 - By right (permitted uses within a Commercial Office Zoning District), Item 16. This item states “Laboratories/Research and Development/Experimental Testing; gross floor area of the establishment does not exceed 4,000 square feet per site; ***provided that the gross floor area of the establishment may exceed 4,000 square feet per site by special exception approved by the board of supervisors.***” This written request will cover (i.) who is Bonumose; (ii.) a description of the proposed use / Bonumose’s technology; and (iii.) compliance with Section 33.40 of Albemarle County Zoning Code, the 2015 Albemarle County Comprehensive Plan, and the 2019 Pantops Master Plan.

I. Bonumose’s Strong Ties to Albemarle County

Bonumose’s mission is to make healthy sugar affordable for the mass market.

Bonumose is a 5-year old food technology and enzyme technology research and development company based in Albemarle County. Ed Rogers (U.Va. 1988; U.Va. Law 1991) and Dr. Daniel Wichelecki co-founded Bonumose in Albemarle County in 2016. Mr. Rogers and Dr. Wichelecki co-founded Bonumose to complete the R&D then commercialize Dr. Wichelecki’s invention for producing Tagatose (a healthy version of sugar) at low-cost. Since the time of formation, Bonumose has extended its technology platform to enable production of additional healthy sugars for use as food ingredients, animal feed nutrients, dietary supplements, crop protection inputs, active pharmaceutical ingredients (APIs), and other uses.

For the company’s first year, Mr. Rogers worked out of co-working space at the U.Va. Licensing & Ventures Group, and Dr. Wichelecki worked in a lab in Blacksburg, VA, where he was living at the time. In July 2017, Mr. Rogers and Dr. Wichelecki moved into the U.Va. Research Park on Seminole Trail. Incidentally, the building (1725 Discovery Drive) was completely empty at the time but quickly became fully occupied after Bonumose moved in.

After raising investment capital from two corporate strategic investors from Japan and Thailand, Bonumose began hiring outside employees. Bonumose currently has 11 full-time employees, including 6 PhDs. Two employees of the PhDs were hired from U.Va.; another employee is a 2019 graduate of U.Va. (undergraduate program); another was a trailing spouse of a U.Va. employee; and Mr. Rogers has two degrees from U.Va. In addition, Bonumose has had 5 paid interns from U.Va. and would have hired more but for the lack of space at its current location.

Bonumose has raised nearly \$18 million in investment capital to date. Although less than 2% of the investment has come from Virginia, Bonumose’s leadership purposely has chosen to grow the business in Central Virginia.

II. Bonumose's Technology

Bonumose's primary R&D focus is Tagatose. Tagatose is a naturally-occurring monosaccharide (sugar) found in tiny quantities in some fruits, grains, and the cacao (cocoa) tree. It has nearly the exact same sweetness level of regular sugar (sucrose). Tagatose closely matches the many other functions sucrose performs in foods, such as: bulking and structure; caramelization; water activity reduction to reduce microbial contamination; freezing point depression (e.g., for creamy ice cream); and many more.

Although Tagatose is nearly a drop-in replacement for regular sugar in food preparation, Tagatose does not have the health detriments often associated with excess consumption of sugar.

- Tagatose does not cause tooth decay, and has even been proven to help remove dental plaque.
- Tagatose does not cause an increase in blood glucose levels, and has even been proven to reduce blood sugar levels – potentially as effectively as Metformin®, the traditional first-line treatment for diabetes.
- Tagatose is low-calorie. According to the FDA, Tagatose has only 40% of the calories of regular sugar. Some research shows that because of the way tagatose blocks the absorption of sugar and starch in the bloodstream, Tagatose arguably has less than zero calories.
- Tagatose is a prebiotic, which means the body treats it as soluble fiber. Tagatose mostly by-passes the small intestine and goes into the large intestine where it feeds the good gut bacteria, thus leading to gut health and all of the positive health outcomes associated with a healthy gut.
- Tagatose potentially has a host of other health benefits, including anti-viral and anti-cancer effects.

The problem, however, is that Tagatose currently is expensive. Its concentration in plants is too tiny to harvest. Tagatose can be made from lactose (milk sugar), but the process is complicated, low-yielding, and expensive. The current wholesale price for tagatose currently is around \$25/pound, compared to \$0.40/pound for refined sugar and \$0.45/pound for high-fructose corn syrup (HFCS).

Dr. Wichelecki invented a method of using enzymes to convert abundant, plant-based starch to pure tagatose. The starch can come from corn, potatoes, pea protein by-product, and multiple other sources. Bonumose's method for producing tagatose from starch involves fewer steps and potentially is lower cost than the method corn refiners use to produce HFCS from starch. *This is Bonumose's mission: to make healthy sugar as inexpensive as traditional sugars – affordable for the mass market.*

Bonumose's method is patented in the United States, Canada, Europe, Japan, China, and multiple other countries. The global market for sugars and sweeteners is \$120 billion per year. After Bonumose's process has been optimized at the next stage of R&D, Bonumose will start building commercial-scale manufacturing locations adjacent to large sources of starch supply. In partnership with well-established

food ingredient distributors such as American Sugar Refining (Domino Sugar), Bonumose will sell its Tagatose to food & beverage manufacturers for use in their sweetened products. In addition, Bonumose will introduce a consumer-branded version of Tagatose for sale in grocery stores and available at sweetener stations in cafes and quick serve restaurants, making available to consumers of all income levels a great-tasting, healthy, and affordable replacement for regular sugar.

Bonumose's potential recently attracted investment from (a) global leading confectionery company Hershey's and (b) American Sugar Refining, the world's largest cane sugar refiner. Bonumose was Hershey's first venture investment in a food ingredient company and Bonumose was ASR's first venture investment ever.

Incredible as it sounds, Bonumose's technology was the victim of Chinese economic espionage. In early 2017, Bonumose learned about a Chinese patent application that was a copycat of Bonumose's then unpublished Tagatose patent application. After an investigation, Bonumose filed a federal lawsuit against a U.S. company and a U.S. individual it believed were responsible for misappropriating Bonumose's trade secrets and providing them to their Chinese associates. In the course of the litigation, Bonumose discovered its opponents' legal fees were being funded by the Chinese Academy of Sciences, which is owned by the Chinese Communist government. According to records discovered by Bonumose, the Chinese Communist government paid over \$1 million to try to crush a young Bonumose. Refusing to back down, Bonumose ultimately established its case so effectively that the counterparties agreed to a favorable settlement after 2 years of litigation.

Additional products in Bonumose's R&D pipeline include Allulose (healthy sweetener), Allose (healthy sweetener and potential anti-cancer API), Mannose (dietary supplement), Inositol (animal feed supplement), and more. Furthermore, Bonumose has executed a Letter of Intent to supply Tagatose to a European crop protection company that is registering bio-fungicides that use Tagatose as the active ingredient against several harmful plant pathogens.

III. Bonumose's Growing Needs for R&D Space and the Need for a Special Exception

Figure 1 shows a diagram of Bonumose's process.

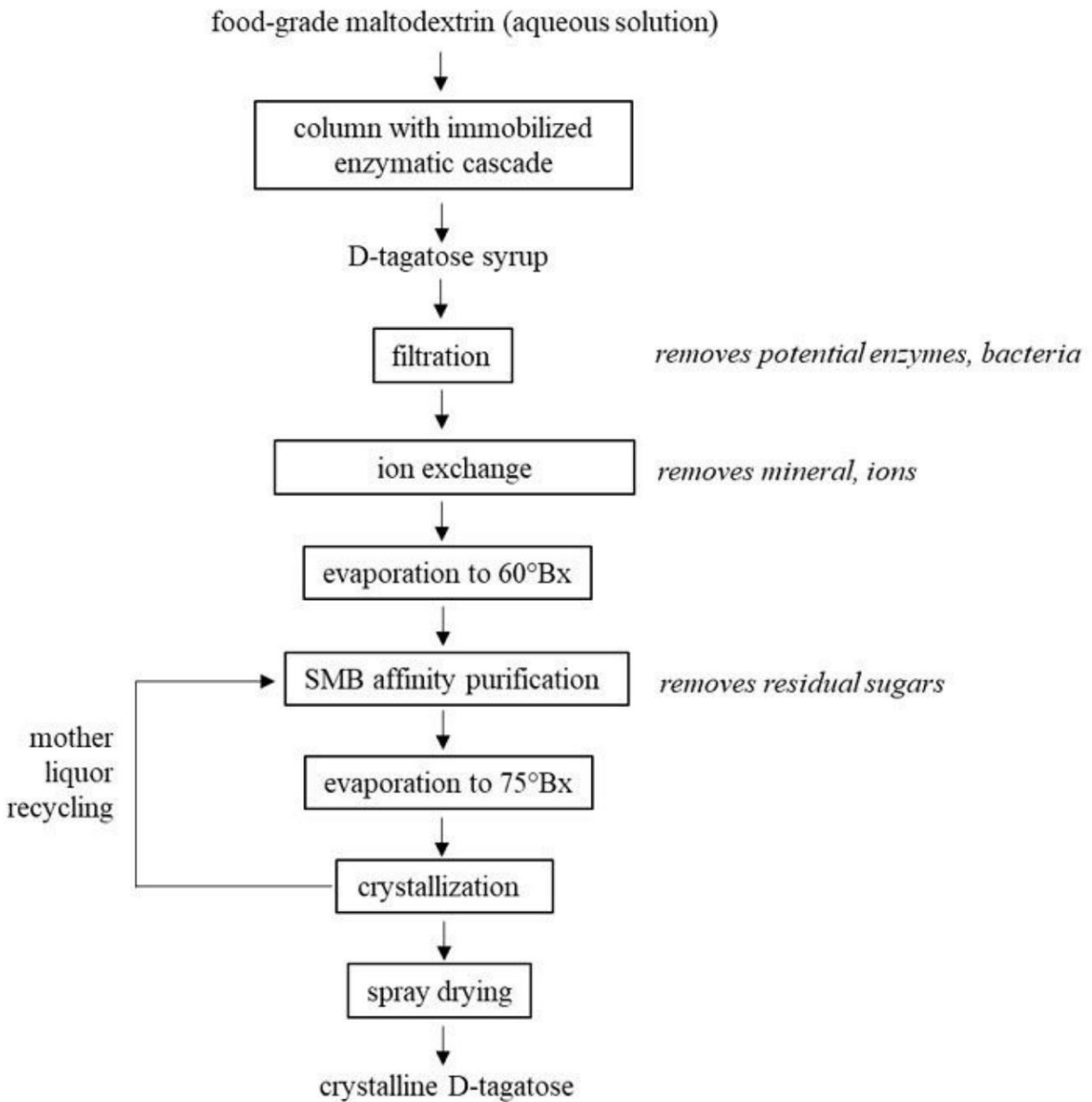


Figure 1 - Process Flow Diagram

For the past 5 years Bonumose has been operating the process at increasingly larger lab-scales at the U.Va. Research Park (n/k/a North Fork).

From December 2019-February 2020, Bonumose operated a small pilot plant in an office park in Boca Raton, Florida, in collaboration with ASR/Domino.

Now Bonumose needs to install and operate larger pilot-scale equipment to advance the development leading to commercial-scale production. Bonumose needs approximately 10,000 SF for the equipment shown in Figure 1. These are scaled-down versions of the equipment unit operations Bonumose will be installing at commercial-scale facilities after successful demonstration in Virginia.

Using the larger R&D space, Bonumose will:

- Optimize Bonumose's process at larger than lab-scale so we can adjust operating conditions and develop the data that will inform our construction of commercial-scale plants.
- Demonstrate the process for Bonumose's customers and investors.
- Provide samples for food product testing by food & beverage customer.

Bonumose is planning the first commercial-scale facility for either Idaho or North Dakota to start-up in Q4 2022 or early 2023. At that time, Bonumose will start doing advanced R&D on the new products in our development pipeline, as referenced above.

In addition to the 10,000 SF for experimental testing equipment, Bonumose needs:

- 2,000 SF for utilities to support the experimental testing equipment (e.g., air compressor, boiler, reverse osmosis water purifier)
- 4,000 SF for wet lab space
- 10,000 SF for inventory storage
- 24,000 SF for offices (State Farm has indicated it would consider a sub-lease at a minimum of 50,000 SF in total. Although Bonumose's needs do not require this much space at this time, Bonumose anticipates adding personnel in the future, thus increasing the required office space needs.)

Herein lies the special exception request, which meets all the factors to be considered by the Board of Supervisors while taking action on a special use permit (applied here to the special exception). These factors are:

1. No substantial detriment to adjacent parcels.

Bonumose's process does not produce noise, light, smells, exhaust, or extraordinary liquid waste. The process is all contained within the refining equipment, so there is no emitted dust, smoke, or off gassing. Any processing / discharged water not reclaimed or recycled will go through an on-site wastewater treatment process before discharging into existing sanitary sewers. ***Using Section 4.14 Performance Standards for Industrial Use, we can assert there is no impact to adjacent parcels based on:***

- **Noise (4.14.1)** - Process is contained within the equipment, the equipment is contained within the existing building. The process is not excessively noisy or intrusive.
- **Vibration (4.14.2)** - None of the equipment is able to produce significant or intrusive levels of vibration. All equipment will be placed on skids or housekeep pads within the facility.

- **4.14.3 Glare and Heat (4.14.3)** - All equipment will be contained indoors and will not produce excessive glare or heat to adjacent parcels.

- **Electrical Disturbance (4.14.4)** - The equipment will use existing service to the State Farm facility. Electrical loads will not be large enough to cause disturbance or disruption of service to adjacent parcels.

Furthermore, traffic impact is minimal, as the anticipated use requires an average total of three trucks per week for deliveries and pick-ups. The facility has existing surface parking lots that provide more than the required amount of parking for Bonumose's use. Currently, Bonumose is **anticipating 20-25 full time research and development employees (present during a standard 9 AM - 5 PM work day), as well as 4-5 employees per shift for continuous process monitoring (anticipated "swing shift" schedule of 8 AM - 8 PM and 8 PM - 8 AM, 7 days per week)**. Bonumose does not anticipate large amounts of visitors, guests, or part-time employees that would generate any significant traffic onto adjacent roadways.

By being a lessee in a large facility, Bonumose is able to take advantage of existing and abundant infrastructure already in place, including parking facilities, electrical service, sanitary sewer service, natural gas, and mechanical systems. While some "re-working" of these systems for Bonumose's specific use is anticipated, there is not an anticipated requirement to largely change, alter, or disrupt any of these aforementioned services already on site.

2. Character of the nearby area is unchanged.

The process will be completely contained within the existing building, at the rear of the facility and not within the viewshed from State Farm Blvd. No changes to the exterior are planned or desired. Any new required mechanical equipment (condenser, chiller plant, boiler) will be contained within the existing enclosed mechanical courtyard, immediately adjacent to the proposed Bonumose area of the State Farm facility (see Figures 2, 3 4, and 5 below). Thus, there will be no change to the character of the nearby area.



Figure 2 - Existing State Farm Operations and Proposed Bonumose Areas



Figure 3 - Existing State Farm Enclosed Mechanical Area and Loading Docks



Figure 4 - Proposed Breakdown of Use

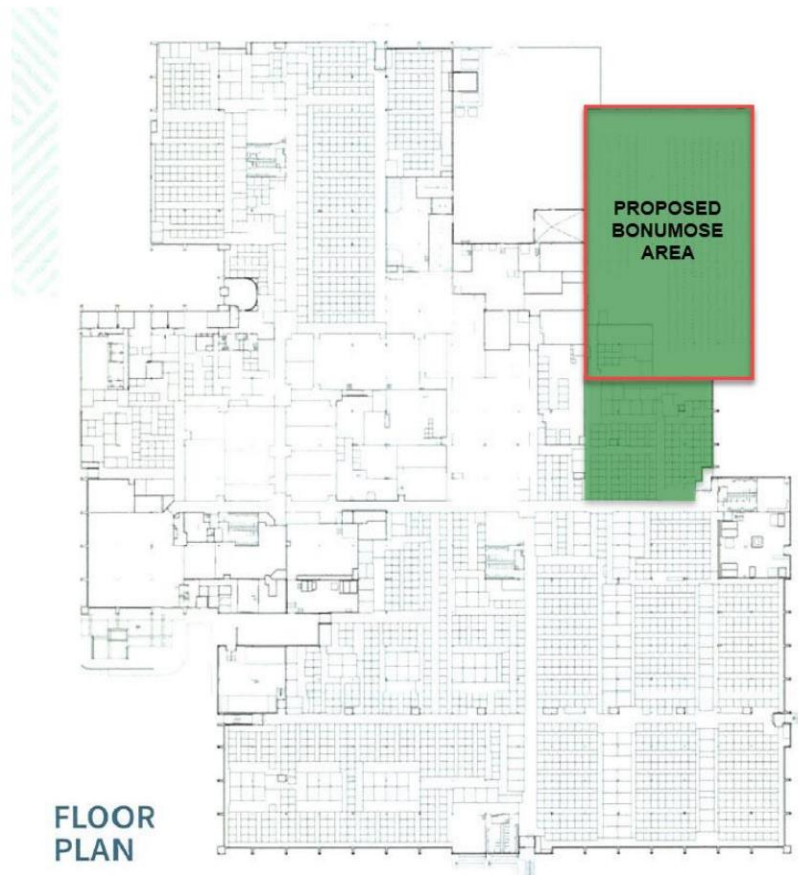


Figure 5 - Overall facility

3. Harmony

Bonumose's role as a bioscience innovator is in keeping with the adjacent Sentara hospital and the associated medical / professional offices found around the Pantops area. Bonumose will offer high-tech and high paying careers in the food processing industry through a research and development laboratory setting that fits well within the existing facility and is in harmony with adjacent facility users. The use is not subject to any "Supplementary Regulations" found in Section 5 of the Albemarle County zoning ordinance, nor will the proposed use have a negative impact on the public health, safety, and general welfare.

4. Consistency with the Comprehensive Plan

Bonumose's request for a Special Exception is consistent with County planning:

- Albemarle County Comprehensive Plan (2015)
 - Economic Development: Objective 3: Selected target industries include: "Bioscience and Medical Devices" ... "Agribusiness and Food Processing"
 - "Strategy 3b: Continue to provide assistance to target industries and businesses that provide jobs in bioscience and medical devices. ... Typically, the industries are high-tech, clean, and high paying."
- Pantops Master Plan (2019)
 - State Farm building: "Office / R&D / Flex / Light Industrial"
 - "Employment District": "Optimal target industries include: biosciences ..."

In the Pantops Master Plan, the State Farm Operations Center is listed as one of the "two primary employment anchors in the Employment District". As of October 2021, one of those two anchors will be completely empty except for facilities management personnel. Bonumose will keep life in the building. We believe Bonumose will attract other life sciences companies. We believe, too, that an insurer such as State Farm subleasing to Bonumose, a healthy sugar company, would be a winning story for Albemarle County to offset the sting of State Farm's closure.

Conclusion

Section 23.2.1 - By right (permitted uses within a Commercial Office Zoning District), Item 16 allows for Laboratories / Research and Development / and Experimental Testing exceeding 4,000 SF through the approval of a Special Exception by the board of supervisors.

Because:

- This allowance for special exception is in this district per Section 23.2.1
- The proposed use satisfies all factors for consideration per Section 33.40
- The proposed use meets all "Performance Standards for Industrial Use" per Section 4.14
- The proposed use is consistent with the goals of the 2015 Albemarle County Comprehensive Plan
- The proposed use is consistent with the 2019 Pantops Master Plan

We formally request for County staff to recommend approval of the Special Exception application, to be considered by the Board of Supervisors at the earliest allowable meeting.

COUNTY OF ALBEMARLE**APPLICATION FOR A SPECIAL EXCEPTION**

☒ Request for a waiver, modification, variation or substitution permitted by Chapter 18 = **\$457**

☐ Variation to a previously approved Planned Development rezoning application plan or Code of Development = **\$457**

OR

☐ Relief from a condition of approval = **\$457**

Provide the following

☒ 3 copies of a written request specifying the section or sections being requested to be waived, modified, varied or substituted, and any other exhibit documents stating the reasons for the request and addressing the applicable findings of the section authorized to be waived, modified, varied or substituted.

Provide the following

- ☐ 3 copies of the existing approved plan illustrating the area where the change is requested or the applicable section(s) or the Code of Development. Provide a graphic representation of the requested change.
- ☐ 1 copy of a written request specifying the provision of the plan, code or standard for which the variation is sought, and state the reason for the requested variation.

Project Name : Bonumose, Inc.

Current Assigned Application Number (SDP, SP or ZMA) None assigned

Tax map and parcel(s): Parcel ID: 07800-00-00-020F0

Applicant / Contact Person Kevin Schafer, Design Develop LLC

Address 418 E Main Street **City** Charlottesville **State** VA **Zip** 22902

Daytime Phone# (434) 665-4144 **Fax#** () **Email** kschafer@designdevelopllc.com

Owner of Record JDM II SF NATIONAL LLC C/O STATE FARM MUTUAL AUTOMOBILE

Address One State Farm Plaza **City** Bloomington **State** IL **Zip** 61710

Daytime Phone# () **Fax#** () **Email**

COUNTY OF ALBEMARLE**APPLICATION FOR A SPECIAL EXCEPTION****APPLICATION SIGNATURE PAGE**

x

If the person signing the application is someone other than the owner of record, then a signed copy of the "CERTIFICATION THAT NOTICE OF THE APPLICATION HAS BEEN PROVIDED TO THE LANDOWNER" form must be provided in addition to the signing the application below. (page 3)

Owner/Applicant Must Read and Sign

By signing this application, I hereby certify that I own the subject property, or have the legal power to act on behalf of the owner of the subject parcel(s) listed in County Records. I also certify that the information provided on this application and accompanying information is accurate, true, and correct to the best of my knowledge. By signing this application, I am consenting to written comments, letters and or notifications regarding this application being provided to me or my designated contact via fax and or email. This consent does not preclude such written communication from also being sent via first class mail.

Signature of Owner / Agent / Contract Purchaser_____
Date_____
Print Name_____
Daytime phone number of Signatory

FOR OFFICE USE ONLY APPLICATION# _____ Fee Amount \$ _____ Date Paid _____

By who? _____ Receipt # _____ Ck# _____ By _____

COUNTY OF ALBEMARLE**APPLICATION FOR A SPECIAL EXCEPTION****CERTIFICATION THAT NOTICE OF THE****× APPLICATION HAS BEEN PROVIDED TO THE LANDOWNER**

This form must accompany this zoning application if the application is not signed by the owner of the property.

I certify that notice of the application for, Bonumose, Inc.
[Name of the application type & if known the assigned application #]

was provided to JDM II SF National LLC C/O State Farm Mutual Automobile
[Name(s) of the record owners of the parcel]

the owner of record of Tax Map and Parcel Number Parcel ID: 07800-00-00-020F0

by delivering a copy of the application in the manner identified below:

 Hand delivery of a copy of the application to _____
[Name of the record owner if the record owner is a person; if
the owner of record is an entity, identify the recipient of the
record and the recipient's title or office for that entity]

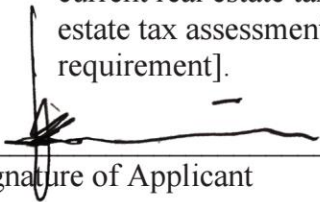
on _____
Date

 x Mailing a copy of the application to JDM II SF National LLC C/O State Farm Mutual Automobile
[Name of the record owner if the record owner is a person; if
the owner of record is an entity, identify the recipient of the
record and the recipient's title or office for that entity]

on 06/04/2021 to the following address One State Farm Plaza
Date

Bloomington, IL 61710

[A ddress; written notice mailed to the owner at the
last known address of the owner as shown on the
current real estate tax assessment books or current real
estate tax assessment records satisfies this
requirement].


Signature of Applicant

Kevin Schafer, Design Develop LLC

Print Applicant Name

05/28/2021

Date