Louisburg Planning Commission Regular Meeting
6:30P.M. May 29, 2019
City Council Meeting Room
215 South Broadway
AGENDA

Item 1: **ROLL CALL:**

Item 2: **ADOPTION OF THE AGENDA:**

Item 3: **APPROVAL OF THE MINUTES:**

- Minutes from the April 24, 2019 Meeting

Item 4: **PUBLIC COMMENTS:**

Persons who wish to address the Planning Commission regarding items not on the agenda may do so at this time. Speakers will be limited to three (3) minutes. Any presentation is for informational purposes only.

PUBLIC HEARING BUSINESS ITEMS:

Item 5: None

NON-PUBLIC HEARING BUSINESS ITEMS:

Item 6: Discussion concerning Feather Advertisement Signs. A request was made from a potential business owner to install three feather signs in front of 1005 West Amity. These signs would be up for approximately 90 days annually. This type of signage is currently not allowed in the Zoning Regulations.

OLD BUSINESS: Any old business the Commission may wish to discuss

Item 7: A discussion concerning Solar Panel requirements.

NEW BUSINESS:

Item 8: **None**

Item 9: **REPORTS:**

None

Item 10: **ADJOURNMENT:**

LOUISBURG PLANNING COMMISSION MEETING MINUTES
Wednesday April 24, 2019

The Planning Commission of the City of Louisburg, Kansas met at 6:30 p.m. in the City Hall Council Chambers with Chairperson Andy Sauber presiding.

ATTENDANCE:

Commission Members:	Nate Apple, Brandon Fosbinder, Donna Cook, George Bazin and Les Page
Recording Secretary:	Rusty Whitham
Visitors:	Kim Stevens and Bob Bazin

ITEM 1: ROLL CALL

ITEM 2: ADOPTION OF THE AGENDA:

A motion was made by Brandon Fosbinder to adopt the agenda. The motion was seconded by Donna Cook. Motion passed 6-0.

ITEM 3: APPROVAL OF THE MINUTES:

A motion was made by Nate Apple to approve the minutes from the March 27, 2019 regular meeting. Brandon Fosbinder seconded the motion. Motion passed 6-0. Les Page and Brandon Fosbinder abstained.

ITEM 4: PUBLIC COMMENTS: Persons who wish to address the Planning Commission regarding items not on the agenda may do so at this time. Speakers will be limited to three (3) minutes. Any presentation is for information purposes only.

None

PUBLIC HEARING BUSINESS ITEMS:

Item 5: 19001-Z (ReZone) Five Vacant tracts of land within the Southtrails Subdivision. The applicant wishes to re-zone the properties from "C-3" General Business District to "PUD" Planned Unit Development District. **(This item has been is postponed. This rezoning request will be rescheduled and discussed at a future Planning Commission meeting).**

NON-PUBLIC HEARING BUSINESS ITEMS:

Item 6: Discussion concerning a fence request at 207 South 6th Street. The type of fence requested by the property owner must be approved by the Planning Commission in accordance with City Ordinance 1099.

After a brief discussion with the property owner, Kim Stevens, a motion was made by Brandon Fosbinder to approve the replacement of the existing six (6) foot high privacy fence with a new fence of the same height consisting of the materials pictured below. Donna Cook seconded the motion. The motion passed 6-0.

Staff reminded the property owner that she should submit a permit application prior to installing the new fence. Kim Stevens suggested that she will turnin a permit application next week.

No further discussion occurred concerning his item.

Item 7: Review and Approval of Meeting Schedule & Submittal Deadlines (June 19, 2019 – December 2020)

After a brief discussion, a motion was made by Les Page to approve the Meeting Schedule & Submittal Deadlines as submitted without corrections. George Bazin seconded the motion. The motion passed 6-0.

No further discussion occurred concerning his item.

Item 8: Discussion concerning a hard surfaced driveway that was not constructed in accordance with stipulations outlined in Special Use Permit 16002-SUP.

Staff explained that a letter was sent to the property owner, reminding him of the requirement to hard surface the driveway in accordance with stipulations outlined in City Ordinance 1063. The letter requested that the driveway leading to the accessory building be hard surfaced within 45 days of receipt of the letter.

Brandon Fosbinder mentioned that the property owner has begun discussions with contractor to hard surface the driveway.

Donna Cook asked what was the original timeframe to get the driveway surfaced. Staff stated one (1) year.

Staff agreed to keep the Planning Commission informed of this issue.

No further discussion occurred concerning his item.

Item 9: A discussion with Bob Bazin concerning a gravel parking lot that was installed on the vacant property east of NAPA Auto Parts Store owned by Bazin.

George Bazin recused himself from the discussion.

After a lengthy discussion, Donna Cook made a motion to allow the property owner to leave the recently installed gravel area in place. Les Page seconded the motion. The motion passed 5-0. George Bazin abstained.

OLD BUSINESS: Any old business the Commission may wish to discuss

Item 10: A discussion concerning a proposed Concrete Standards/Policy. This is a continued discussion that began during the December 19, 2018 Planning Commission Meeting.

After a brief discussion, a motion was made by Les Page to approve the Concrete Standards/Policy as submitted without corrections. George Bazin seconded the motion. The motion passed 6-0.

No further discussion occurred concerning this item.

NEW BUSINESS:

Item 11: Staff mentioned it was discovered that a gravel off-street parking area being established in front of a residential home along South Elm Street. Staff explained that a large area in front of the home was recently been excavated and gravel has not yet been placed. During a discussion with the homeowner it mentioned that he wants a gravel area in front of their home and should be completed in a couple of days.

Staff asked the Planning Commission if this gravel off-street parking area would be allowed to stay. Staff provided the entire board a copy of the City Ordinance 947. Reference below verbiage from ordnance:

> *"Off-street parking spaces shall comply with the design standards relating to curb length, stall depth, driveway width, island width, barriers, and ingress and egress as contained in the Off-Street Parking Standards of this article. No new parking spaces shall be created parallel to the edge of the pavement on streets that do not have curb and gutter, whether in the right-of-way or on private property. Any new spaces will be created perpendicular to the street and designed and constructed such as to not impede stormwater flow, or damage the edges of the existing street surface."*

It was explained by a Planning Commission Member that the key element of this ordinance is that no gravel area shall ***impede stormwater flow.*** It was also mentioned that if this gravel area needs to be removed as determined by staff and the homeowner is upset have them talk to the Planning Commission.

REPORTS:

Item 12: None

Item 13: ADJOURNMENT:

A motion was made by Brandon Fosbinder to adjourn the meeting. George Bazin seconded the motion. The motion passed 6-0. Meeting adjourned at 7:26p.m.

Submitted by Rusty Whitham

MEMO – Item #6

To: Planning Commission
From: Staff
Date: May 29, 2019
Re: Feather Advertisement Signs

A request was made from a potential business owner to install three feather signs in front of 1005 West Amity. These signs would be up for approximately 90 days annually during tax the season. This type of temporary signage is currently not allowed. The Zoning Regulations allow the business owner to request Special Temporary Event Sign Permit. This permit allows the owner to display up to five (5) signs with only one (1) sign allowed on a single lot. These signs may be displayed for only 21 days per year. Feather style signs may be allowed using a Special Temporary Sign Permit.

The Planning Commission may consider a text amendment to the Zoning Regulations to allow for the type of signage with number of signs requested by this potential business owner:

Louisburg
CLOSE-KNIT • CLOSE TO EVERYTHING

To: Louisburg Planning Commission

From: City Staff

Date: May 24, 2019

Re: Solar Policy

Provided in the packet is the latest version of the Solar Policy with changes discussed by Planning Commission at the February and March meetings.

The mark-ups in the draft policy were provided by Laura Machala, the solar energy coordinator for MARC, the Mid-America Regional Council. Laura would be considered a local expert in the field of solar.

Laura also provided regulations from Olathe, Raymore, Johnson County and Clay County for comparison.

MARC has a wealth of information on solar on its website at:
http://marc.org/Environment/Energy/Renewable-Energy/Solar-Ready-II

Included on the website are a sample application and checklist as well as solar ready construction guidelines. Copies of these documents are included in the packet.

Recommendation: Staff recommends that commissioners consider the changes, direct staff to make such changes and forward to City Council for final approval.

Louisburg KS

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Solar Panel System Design Standards

City of Louisburg, KS

Background and Purpose

These Design Guidelines for solar panels provides guidance to the property owners on the aesthetic requirements and specifications for all solar panel systems in the City of Louisburg. Applications that conform to these standards will be reviewed by the Planning and Zoning Department. Any application that does not conform to these guidelines would require approval by the City of Louisburg Planning Commission.

The Design Guidelines are intended to allow sufficient flexibility to respond to and integrate future advances in solar technology as well as innovations that improve the ability for these facilities to integrate into the surrounding environment. Due to the rapid advances in solar technology, the Design Guidelines will be evaluated periodically to ensure the provisions respond and adapt accordingly to these evolving technologies. To be sure the application is the most current, applicants are encouraged to download the application on the City website: https://louisburgkansas.gov/248/Building-Permits

These guidelines are administered by the City of Louisburg Planning and Zoning Department. The department may be reached at 913-837-5811.

Solar Panel Systems in Residential Zoning Districts (R-1, R-2, R3 and M-P)

Solar panels may be installed in Residential Zoning Districts as long as the following performance standards are met. All solar panels shall meet or exceed the current standards expressed in the adopted building codes. A building permit must be obtained prior to the installation of any solar collector system. **A combination of one (1) ground and one (1) roof mounted solar panels shall be allowed on a single lot as long sets of panels are connected into one system.**

Comment [LM1]: I have not seen this provision before. I feel like it is a little ambiguous. What does "one panel" refer to exactly? While this is restrictive and I would recommend not including it, if you do, I would replace the word "panel" with "installation."

1. **Installation on a pitched roof:**
   a. Applicant shall consult the local electrical utility company and obtain proper permitting.
   b. Roof-mounted solar panels shall not be on the front or side roofs in any Residential Zoning Districts.

Comment [LM2]: This is considered restrictive. What if a property's south-facing roof faces the front or side? You can include language that it should be installed on a rear facing roof unless doing so would result in a significant reduction in energy production. Or, a lot of places require panels be mounted flush with the roof if they are front-facing. This is generally the practice anyway.

   c. Roof-mounted solar panels located on the rear side of roofs shall not extend above the peak of the roof plane on which they are mounted, and no portion of any such solar panel shall extend more than four (4) feet perpendicular to the point on the roof where it is mounted.
   d. The permit applicant must submit all manufacture's data and a stamped letter/documents from a licensed Kansas Engineer certifying that the roof structure will support all solar panels and accessory equipment before a permit is issued. The applicant shall also submit documents from the electrical utility company indicating that they have been approved for the installation of the solar panel system.

Comment [LM3]: This is considered restrictive for small, residential installations. Please see this solar permit checklist that MARC developed as part of our recent solar work. It is for systems that are 15 kW and under and if the steps are followed and correct boxes checked, there is no need for an engineer to certify that the structure is sound. http://marc.org/Environment/Energy/Solar-Resources/Solar-Permit-Checklist

   e. **All solar panel systems shall be installed by a licensed Electrical Contractor.**

f. Solar panels shall not be installed on any accessory building.

Comment [LM4]: This is also considered restrictive

g. Property owners are required to consult their Homeowners Associations (HOA) if applicable prior to submitting a permit application

Comment [LM5]: In my opinion, this is a little strange to have in the code. How will you check that they did this?

2. **Installation on a flat roof:**

a. Applicant shall consult the local electrical utility company and obtain proper permitting.

b. Roof-mounted solar panels may be mounted on a flat roof at an optimum angle to the sun for maximum energy production when the building parapet or roof design provides full screening of the solar panels and associated equipment from public streets and neighboring properties.

c. For installation on a building without a parapet, roof-mounted solar collector panels shall be placed in the most obscure location without reducing the operating efficiency of the collectors, such as the center of the roof. Solar panels and associated equipment may be permitted on the roof so long as they are screened from view from public streets and neighboring properties.

d. The permit applicant must submit all manufacturer's data and a stamped letter/documents from a licensed Kansas Engineer certifying that the roof structure will support all solar panels and accessory equipment before a permit is issued. The applicant shall also submit documents from the electrical utility company indicating that they have been approved for the installation of the solar panel system.

e. **All solar panel systems shall be installed by a licensed Electrical Contractor.**

f. Solar panels shall not be installed on any accessory building

g. Property owners are required to consult their Homeowners Associations (HOA) if applicable prior to submitting a permit application.

Comment [LM6]: Same as previous comment.

3. **Ground-mounted installation:**

a. Applicant shall consult the local electrical utility company and obtain proper permitting.

b. Ground-mounted solar panels shall not exceed more than seven (7) feet in total height and shall be located within the rear or side yard at least five (5) feet inside the property line.

c. All lines serving a ground-mounted solar collector shall be located underground.

d. All ground-mounted solar panels shall be installed in the rear or side yard and be screened with an eight (8) foot privacy fence.

Comment [LM7]: This is very restrictive. I don't think I've seen this provision in another ordinance

e. **All solar panel systems shall be installed by a licensed Electrical Contractor.**

f. All ground-mounted solar panel systems are considered an accessory item and as such shall be constructed on the same lot as the residential dwelling. In addition, ground-mounted solar panel systems shall not be constructed in any easements or Right-of-Way (ROW).

g. For residential lots less than one acre in size, the surface area of the ground-mounted solar panels shall not exceed two (2) percent coverage of total lot area, with a maximum coverage of two hundred (200) square feet. For residential lots one acre or larger in size, the surface area of the ground-mounted solar panels shall not exceed two (2) percent coverage of the total lot area, with a maximum lot coverage of seven hundred (700) square feet. A larger solar panel system may be allowed upon issuance of a Special Use Permit (SUP).

h. No more than one ground-mounted solar panel system be installed on a single residential lot.

i. The permit applicant must submit all manufacturer's data and site-plan before a permit is issued.

j. Property owners are required to consult their Homeowners Associations (HOA) if applicable prior to submitting a permit application.

k. The permit applicant must submit all manufacturer's data and a stamped letter/documents from a licensed Kansas Engineer certifying that the roof structure will support all solar panels and accessory equipment before a permit is issued. The applicant shall also submit documents from the electrical utility company indicating that they have been approved for the installation of the solar panel system.

Solar in all other Zoning Districts except A-L Agricultural District

Solar panel system may be installed in all other Zoning Districts except A-L Agricultural District as long as the following performance standards are met. All solar panels shall meet or exceed the current standards expressed in the adopted building codes. A building permit must be obtained prior to the installation of any solar collector system. **A combination of one (1) ground and one (1) roof mounted solar panels shall be allowed on a single lot as long sets of panels are connected into one system.**

1. Installation on a pitched and flat roof systems:

a. Applicant shall consult the local electrical utility company and obtain proper permitting.

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Comment [LM8]: Same

Comment [LM9]: Aren't you talking about ground-mounted systems here?

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Comment [LM10]: Why is this?

Comment [LM11]: See my previous comment about this

b. Mounted solar panels shall be screened from view (one hundred (100) percent opacity) or isolated so as not to be visible from ground level of any adjacent public thoroughfare or residentially-zoned area, up to a maximum of three hundred (300) feet away. The appearance of roof screens shall be coordinated with the building to maintain a unified appearance.

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Comment [LM12]: Very restrictive

c. The permit applicant must submit all manufacturer's data and a stamped letter/documents from a licensed Kansas Engineer certifying that the roof structure will support all solar panels and accessory equipment before a permit is issued. The applicant shall also submit documents from the electrical utility company indicating that they have been approved for the installation of the solar panel system.

d. **All solar panel systems shall be installed by a licensed Electrical Contractor.**

2. Ground-mounted installation:

a. Applicant shall consult the local electrical utility company and obtain proper permitting.

b. All electrical and mechanical equipment located adjacent to the building and visible from any adjacent public thoroughfare or a residentially-zoned area shall be screened from view (one hundred (100) percent opacity), up to a maximum of three hundred (300) feet away. Such screens and enclosures shall be treated as integral elements of the building's appearance.

Comment [LM13]: Again, this is very restrictive

c. All lines serving a ground-mounted solar collector shall be located underground.

d. Ground-mounted solar panels shall be located within the rear or side yard at least five (5) feet inside the property line.

e. **All solar panel systems shall be installed by a licensed Electrical Contractor.**

f. All ground-mounted solar panel systems are considered an accessory item and as such shall be constructed on the same lot as the as the primary commercial structure. In addition, ground-mounted solar panel systems shall not be constructed in any easements or Right-of-Way (ROW).

g. The permit applicant must submit all manufactures and site-plan before a permit is issued. Site-Plan must be approved by the Planning Commission. The applicant shall also submit documents from the electrical utility company indicating that they have been approved for the installation of the solar panel system.

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Comment [LM14]: Why need to go to PC?

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h. For commercial lots less than one acre in size, the surface area of the ground-mounted solar panels shall not exceed two (2) percent coverage of total lot area, with a maximum coverage of two hundred (200) square feet. For residential lots one acre or larger in size, the surface area of the ground-mounted solar panels shall not exceed two (2) percent coverage of the total lot area, with a maximum lot coverage of seven hundred (700)

square feet. A larger solar panel system may be allowed upon issuance of a Special Use Permit (SUP).

V. Noncommercial Messages

Any commercial sign permitted under this chapter is allowed to contain noncommercial speech in lieu of any commercial speech, subject to all applicable restrictions and performance standards. (Ord. 05-35 § 2, 2005)

W. Exceptions

Exceptions to sign regulations for standard zoning districts may only be granted by the Board of Zoning Appeals through a variance, subject to the provisions of Chapter 18.40 of the Unified Development Ordinance. Deviations to sign regulations for planned zoning districts may be approved by the Planning Commission and Governing Body at the time of rezoning as part of the preliminary development plan. Any deviation or exception to the requirements of this chapter may only be granted upon a finding by the Governing Body that all of the following conditions are met:

1. That the deviation requested arises from such condition which is unique to the property in question, is not ordinarily found in the same zone or district, and is not created by an action or actions of the property owner or applicant;
2. That granting the deviation will not adversely affect the rights of adjacent property owners or residents.
3. That the strict application of the provisions of this ordinance would constitute unnecessary hardship upon the property owner represented in the application.
4. That the deviation desired will not adversely affect the public health, safety, morals order, convenience, prosperity, or general welfare.
5. That granting the deviation will not be opposed to the general spirit and intent of this ordinance. (Ord. 10-39 §18, 2010)

18.50.200 Solar Energy and Solar Systems

Purpose: this section implements PlanOlathe's policy to encourage the use of alternative energy in new development and redevelopment, and permits solar collectors in all zoning districts, subject to performance standards that protect neighborhood character and avoid unreasonable impacts to neighboring property.

A. Applicability

This section applies to solar collectors, defined as:

Photovoltaic Cells	Extremely thin solar energy collection cells, usually made of silicon, that collect solar energy and convert it to direct current (DC) electricity.
Solar Collector	A device used to collect direct sunlight to heat or cool a structure, heat domestic hot water or swimming pools, or to generate electricity.
Solar Energy Conversion System	Equipment and wiring needed to collect, store and convert solar energy into a useable form. Active solar systems rely upon mechanical means to collect light and/or heat from the sun and convert it into usable energy. Passive systems use natural, non-mechanical techniques to obtain energy from the sun including daylighting, south-facing windows, natural shading and ventilation, and building materials that absorb heat from the sun and slowly release it.
Solar Greenhouse	A solar collector that is a structure or part of a structure using glass or similar glazing material to collect direct sunlight for space heating purposes.

B. Generally

1. All solar collectors comply with the adopted building code.
2. Applications for subdivision plat or site plan approval shall address solar energy conversion systems, and shall incorporate passive systems to the extent practical.

C. Installation on a pitched roof

1. Roof-mounted solar collectors located on front or side of pitched roofs shall not extend above the peak of the roof plane on which they are mounted. No portion of the solar collector shall extend more than **24 inches** perpendicular to the point on the roof where it is mounted.
2. Roof-mounted solar collectors located on the rear side of building roofs shall not extend above the peak of the roof plane on which they are mounted. No portion of any the solar collector shall extend more than **4 feet** perpendicular to the point on the roof where it is mounted.

D. Installation on a flat roof

1. Roof-mounted solar collectors may be mounted on a flat roof at an optimum angle to the sun for maximum energy production when the building parapet or roof design provides full screening of the solar panels from public streets.
2. For installation of roof-mounted solar collectors on flat-roof buildings without parapets, panels shall be placed in the most obscure location without reducing the operating efficiency of the collectors, such as the center of the roof. The panels shall be installed at the same angle or as close as possible to the pitch of the roof. Associated equipment is permitted on the roof, if it is screened from view of the public street.
3. Solar collector panels are exempt from the rooftop screening provisions of Section 18.30.070.

E. Installation on the side of a building

1. In any planned zoning district or in any district requiring site plan approval, the construction or installation of any solar collection system on the side of a building shall be subject to either Final Development Plan approval or Site Plan approval by the City.

2. Wall-mounted solar collector panels shall not extend more than five (5) feet to the furthest extension of the solar collection panels from the wall plane on which they are installed.
3. Wall-mounted solar collector panels shall not extend more than 25 percent into any required side setback or 50 percent into any required rear setback. No part of the system shall extend into any required front setback.
4. Wall-mounted solar collectors shall not extend above the top of the wall on which they are mounted.

F. Ground-mounted installation

1. Ground-mounted solar collectors shall not exceed eight (8) feet in total height and shall be located within the rear yard at least 12 feet inside the property line.
2. All lines serving a ground-mounted solar collector shall be located underground.

G. Parking lot light pole installation

1. Twenty (20) percent of the height of a light pole may be added above the light fixture to install a solar collector panel.
2. The overall height of the parking lot light pole and solar collector shall not exceed 40 feet. Any necessary solar collector appurtenances shall be painted to match the light pole and fixture.

H. Nonconformities

1. The Governing Body may permit the installation of solar collectors that cause an existing structure to become nonconforming, or which increase an existing nonconformity, as a special use.
2. The installation may be permitted even if it exceeds the height limit established in the zoning district, if the following conditions are met:

    a. There is no feasible alternative to placing the collector(s) on the roof;
    b. The collector(s) are located so as to minimize view blockage for surrounding properties and shading of property to the north, while still providing adequate solar access for the collectors;
    c. The collector(s) add no more than seven (7) feet of height to the existing structure. To minimize view blockage or shadow impacts, the Governing Body may limit a nonconforming solar collector to less than seven (7) additional feet of height.

18.50.210 Storage in Commercial Districts

A. Applicability

This section applies to the storage of merchandise in any C-1, C-2, C-3, C-4, N, or planned development district.

I. Solar Energy Systems

Solar energy systems shall be a permitted accessory use in all districts subject to compliance with the following requirements:

1. Roof-mounted systems located on front building roofs shall not project more than 24 inches perpendicular to the point on the roof where it is mounted.
2. Roof-mounted systems shall not project above the ridge of a gabled or gambrel roof.
3. Roof-mounted systems shall not project more than four feet above the deck or parapet of a flat or mansard roof. All mounting hardware shall be screened from view according to Section 430.120A.
4. Ground-mounted systems shall not be located in any required yard.
5. Ground-mounted systems on lots under 1 acre shall not be higher than 8 feet.
6. Solar collectors designed as part of an accessory structure such as an awning or canopy shall conform to the standards for that structure.
7. Appurtenant components must be located within an enclosed structure or screened according to Section 430.120.

1. Ground-mounted satellite dish antenna shall not exceed 13 feet in height from the grade where it is mounted.

2. Any satellite dish antenna shall be located within the rear yard or in any side yards which does not abut a street, and satellite dish antenna shall be located at least fifteen (15) feet inside the property lines.

3. All cables and lines serving the satellite dish antenna shall be located underground.

4. Satellite dish antennae shall only be ground mounted and the above provisions shall apply unless otherwise approved as to location or ground mounting by a Conditional Use Permit as provided in Article 23 of these regulations.

5. Nothing contained herein shall relieve a person from the necessity of satisfying any and all governmental licenses or permits required for operation, if any.

F. Solar Collectors: Solar collectors shall be permitted provided that the following performance standards are met:

1. Roof-mounted residential building solar collectors located on front or side building roofs visible from the public right-of-way shall not extend above the peak of the roof plane where it is mounted and no portion of any such solar collector shall extend more than 24 inches as measured perpendicularly to the roof at the point where it is mounted.

2. Roof-mounted residential building solar collectors located on the rear or interior side building roofs shall not extend above the peak of the roof plane where it is mounted and no portion of any such solar collector shall extend more than four feet as measured perpendicularly to the roof at the point where it is mounted.

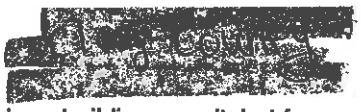
3. Ground-mounted solar collectors shall not exceed 8 feet in total height and shall be located within the rear yard at least 12 feet inside the property lines.

4. All utility service lines serving a ground-mounted solar system shall be located underground.

5. Any system incorporated into a nonresidential building shall be integrated into the basic form and main body of the building. If roof mounted, all collector panels shall fit into the form of the roof; if the building's roof is sloped or if "rack" mounting is used on a flat roof, the mounting must be concealed from view at street level. Exposed rack supports and freestanding collectors apart from the main building shall not be permitted.

6. Roof mounted solar energy systems mounted on "accessory or detached buildings" are allowed on detached garages or swimming pool equipment buildings. Detached "greenhouses" are also acceptable. All such energy systems mounted on accessory or detached buildings shall conform to the requirements outlined in paragraphs F(1) and F (2) above. No freestanding panels or panel racks shall be allowed.

7. If an active solar or photovoltaic solar system is utilized, all components servicing the collector panels shall be concealed including mechanical piping, electrical conduits, and the like.



7. Fences with a height 6 feet or less do not require a building permit, but fences greater than 6 feet but no more than 8 feet must apply for a building permit.

8. No fence shall be constructed of a height greater than 8 feet, except:

    a. fences erected upon public or parochial school grounds or in public parks, in public playgrounds or on other public lands; and

    b. fence heights of greater than 8 feet authorized by Conditional Use Permit (See Sec. 151-3.10).

9. For emergency purposes, a gate or other access shall be provided for all rear yards that are totally enclosed by a fence with a height greater than 30 inches.

10. All fences shall comply with the construction standards of the building code, as applicable.

11. Landscaping walls of two angles shall not be considered fences.

F. Swimming Pools and Hot Tubs

1. Outdoor swimming pools, hot tubs and spas shall be enclosed by a fence or wall with a self-latching gate.

2. The fence or wall shall have a minimum height of 48 inches.

3. Enclosing the entire yard containing the swimming pool, hot tub or spa in accordance with these requirements shall satisfy the intent of this section, but in no case shall swimming pool or hot tub covers, in-lieu of the required fence or wall, satisfy the requirements.

4. Swimming pools, hot tubs and spas shall be setback at least 5 feet from all side and rear property lines, as measured from the water's edge.

5. Swimming pools, hot tubs and spas shall not be allowed within utility easements.

G. Solar Collectors

Solar collectors shall be permitted provided that the following performance standards are met:

1. Roof-mounted residential building solar collectors located on front or side building roofs visible from the public right-of-way shall not extend above the peak of the roof plane where it is mounted and no portion of any such solar collector shall extend more than 24 inches as measured perpendicularly to the roof at the point where it is mounted.

2. Roof-mounted residential building solar collectors located on the rear or interior side building roofs shall not extend above the peak of the roof plane where it is mounted and no portion of any such solar collector shall extend more than four feet as measured perpendicularly to the roof at the point where it is mounted.

3. Ground-mounted solar collectors shall not exceed 8 feet in total height and shall be located within the rear yard at least 12 feet inside the property lines.

4. All utility service lines serving a ground-mounted solar system shall be located underground.

5. Any system incorporated into a nonresidential building shall be integrated into the basic form and main body of the building. If roof mounted, all collector panels shall fit into the form of the roof; if the building's roof is sloped or if "rack" mounting is used on a flat roof, the mounting must be concealed from view at street level. Exposed rack supports and freestanding collectors apart from the main building shall not be permitted.

Photovoltaic System Application and Checklist – For Residential Systems* ≤ 15 kW

Jurisdiction: _____

Project Name: _____ Contact Name: _____

Contractor Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone/Cell: _____ Fax: _____ Email: _____

Project Location: _____

I, _____ have read the information below and acknowledge that all required documents have been provided. I understand that omissions in the required information will result in delays in the review process.

Signature: _____ Date: _____

How to complete this permit application:

A | Fill out basic permit form per jurisdiction (this will either be an electrical or a building permit form).

B | Complete Photovoltaic System Application and Checklist.

C | Include site plan showing location of major components on the property. This drawing need not be exactly to scale, but it should represent relative location of components and show elevation. The site plan must also show compliance with International Fire Code minimum access and pathways. *Additionally, include a photo that shows the proposed access point to verify compliance with IFC 605.11.3.1.*

D | Include electrical diagram showing PV array configuration, wiring system, overcurrent protection, inverter, disconnects, required signs, and AC connection to building.

E | Include specification sheets and installation manuals (if available) for all manufactured components including, but not limited to PV modules, inverter(s), combiner box, disconnects, and mounting system.

F | Inquire with the jurisdiction to find out the number of copies of components A-D should be submitted.

Steps to completing a photovoltaic project:

Step 1 | Concurrently submit this permit application (see all necessary components, above) and the Net Metering/Interconnection Application to electric utility.

Step 2 | Work can begin after the jurisdiction's permit is approved. Note: Some contractors will not begin work until the Net Metering/Interconnection Application is approved by the utility, although this is not a requirement.

Step 3 | Notify jurisdiction when ready for inspection.

Step 4 | Notify electric utility when inspection is passed.

Step 5 | Electric utility will schedule its inspection and meter exchange.

Step 6 | Electric utility will provide Permission to Operate (PTO).

* Or equally small commercial systems

Structural Review of PV Array Mounting System:

Roof Information:

This section is for evaluating roof structural members that are site built. This includes rafter systems and site built trusses. Manufactured trusses and roof joist systems, when installed with proper spacing, meet the roof structure requirements as well.

1. Is the array to be mounted on a defined, permitted roof structure? ☐ Yes ☐ No
2. Roof Age: Structure: ☐ < 5 yrs ☐ 5-10 yrs ☐ 20-30 yrs ☐ 30+ yrs
   Covering: ☐ < 5 yrs ☐ 5-10 yrs ☐ 20-30 yrs ☐ 30+ yrs
3. Is the roofing type lightweight (Yes = composition, lightweight masonry, metal, etc...)_____
   (No = heavy masonry, slate, etc...)
4. Does the roof have a single covering? ☐ Yes ☐ No
5. Provide method and type of weatherproofing roof penetrations (e.g. flashing, caulk)
   _____
6. Roof Construction: ☐ Rafters ☐ Trusses ☐ Other:_____
7. Describe rafter or truss system.
   a. Rafter Size:_____ x _____ inches
   b. Rafter Spacing:_____ inches
   c. Maximum unsupported span:_____ feet,_____ inches
8. Are rafters or trusses in good condition, i.e. have not been adversely altered and no visible damage?
   ☐ Yes ☐ No
9. Is the rafter or truss design unusual or abnormal? ☐ Yes ☐ No
10. Are the rafters or trusses made out of non-standard materials? ☐ Yes ☐ No
11. Have the rafters or trusses been modified in any way (e.g. drilled holes, etc.)
    ☐ Yes ☐ No

Need a structural engineer's stamp: *If you answered "No" to question #8 or "Yes" to any of the questions numbered 9 - 11, a structural engineer's stamp will be required by the local jurisdiction issuing the permit. A framing plan is also required if strengthening the rafters/trusses is necessary.*

(Structural Review of PV Array Mounting System—continued)

Mounting System Information:

This section provides information on how the PV modules will be mounted to the roof. It is very important to have enough attachment points to adequately spread the dead load across as many roof-framing members as needed so that the point loads created at attachment points account for additional snow load (the Kansas City region has a 20 psf ground snow load).

12. Is the mounting structure an engineered product designed to mount PV modules with no more than 18" gap beneath the module frames? ☐ Yes ☐ No

Need a structural engineer's stamp: *If you answered "No" to question #12, a structural engineer's stamp will be required by the local jurisdiction issuing the permit. Must include design for uplift including system to rafter detail as well as a framing plan if strengthening the rafters/trusses is necessary.*

13. Fill out information on the mounting system below:
    d. Mounting System Manufacturer_____ Product Name & Model #_____
    e. Total Weight of PV Modules and Rails _____ lbs
    f. Total Number of Attachment Points _____
    g. Weight per Attachment Points (b÷c) _____ lbs
    h. Maximum Spacing Between Attachment Points on a Rail _____ inches
    See product manual for maximum spacing allowed based on maximum design wind speed. To ensure proper weight distribution: For each successive rail, attachment points should occur on rail ends and then should be staggered based on 16" or 24" on center rafter spacing.
    i. Total Surface Area of PV Modules (square feet)_____ ft^2
    j. Distributed Weight of PV Module on Roof (b÷f)_____ lbs/ft^2
    k. Mounting Frame to Rafter Framing: ☐ Self-ballasted ☐ Penetrating
    If penetrating, please provide for fasteners:
    Type:_____ Size: _____ Number:_____ Spacing:_____ inches
14. Additionally, please attach a cross-section detail that shows rafter size, spacing, number of attachment points, span dimensions, and approximate roof slope.

Electrical Review of PV System (Calculations for Electrical Diagram)

In order for a PV system be processed using this application, the following must be true:

1. PV modules, utility-interactive inverters, and combiner boxes are identified for use in PV systems.
2. The PV array is composed of 4 series strings or less per inverter.
3. The AC interconnection point is on the load side of service disconnecting means (690.64(B))
4. A standard electrical diagram can be used to accurately represent the PV system.

Solar Ready Construction Guidelines

A Guide for Residential Developers, Architects and Builders

More and more, people are turning to solar power for their energy needs, and this trend is expected to continue as the cost of "going solar" declines. Developers, homebuilders and architects can help prepare for the growing demand for solar by designing buildings with future solar installations in mind.

As part of its Solar Ready II initiative, the Mid-America Regional Council developed voluntary guidelines for local governments in the Kansas City metropolitan region to help homebuilders and others work through the design steps that will make new construction solar ready. Each local government can customize the guidelines with specific setback requirements.

These guidelines include best practices to minimize the costs of future solar installation and maximize potential system efficiency. The guidelines apply to site selection, building design and building construction. With solar-ready construction, future homeowners can save thousands of dollars when they install solar, compared to installing solar on a conventionally designed home.

1. Site Considerations

1.1. Building and Roof Orientation

Buildings should be oriented to provide a south-facing roof and designed to minimize the obtrusiveness of solar panels.

1.2. Avoid Shading

Buildings and landscaping should be designed to prevent shade on the south side. Select shade tree species and planting locations that will shade windows and walls but not the solar collector on the roof.

2. Roof Design Considerations

2.1. Preserve Rooftop Space for Solar Collectors

The south-facing portion of the roof should include a contiguous area that is free of rooftop obstruction and of sufficient size for a solar system. At minimum, an area of 100 square feet per kilowatt (kW) should be preserved for solar collection. Typical residential solar installations range from 3–7 kW, depending on the size of the home and the amount of electricity the homeowner wishes to generate. Additionally, in [INSERT JURISDICTION NAME], minimum setback requirements for solar are [INSERT SETBACK REQUIREMENTS].

2.2. Flat Roof Configuration

For flat roofs, designers should ensure the building has adequate roof access and consider integrating rooftop safety equipment, such as guardrails, when appropriate. The area identified for solar collection should be near the middle of the roof, away from any parapets to avoid shading. Rooftop HVAC equipment should be positioned to avoid conflicts with the location of the solar collector.

2.3. Pitched Roof Configuration

For pitched roofs, designers should optimize the degree of pitch to maximize the generation of solar panels located flush against the roof. In the Kansas City region, an optimal roof pitch for solar is 30 degrees.

2.4. Allow for Additional Weight

The roof should be adequately constructed to allow for the additional weight of the solar system itself, as well as the impact of wind and snow loads. Solar PV systems add 3–6 pounds per square foot to the dead load of a roof, and up to 45 pounds at specific attachment points. Generally, code-compliant roofs designed for single family residential construction are strong enough to hold systems up to 15 kW; however, larger residential systems or systems for commercial buildings will sometimes need reinforcement. If a ballasted system is installed on a flat roof, it may add up to 20–30 pounds per square foot to the roof's dead load.

2.5. Record Roof Reinforcements

Any reinforcements to the roof should be recorded on official drawings, such as the code sheet, for the benefit of solar developers.

2.6. Record Potential Layouts

Provide detailed drawings and potential layouts to code officials for filing. Future homeowners and/or contractors will benefit from understanding the design intentions.

2.7. Roof Warranty

Determine if any material or installation warranties would be jeopardized with a future solar installation and document findings for homeowner records.

3. Electrical and Mechanical Considerations

3.1. Reserve Wall Space for Inverter

A 3-by-3-foot area of wall space next to the building's main electrical panel, with an additional 3 feet of clearance space in front of the wall, should be reserved for the installation of an inverter. To minimize voltage loss, the meter box and reserved inverter space should be located just below the rooftop space reserved for the solar collector.

3.2. Install Conduit

Metallic conduit at least 1 inch in diameter should be installed from the area identified for the inverter to the area identified for the solar collector.

3.3. Leave Room for Breaker

The electric panel should include the necessary space for a power input breaker at the opposite end of the electric service panel from the main breaker.

3.4. Provide Adequate Home Electrical Service

Electrical service of at least 200 amperes in residential buildings is preferable to ensure that solar power generation can be accommodated.

3.5. Label Equipment and Reserved Spaces

Clearly label any conduit, wall space and breaker space reserved for future solar installation.