

SECTION 7000 - SMALL WIRELESS FACILITIES

CITY OF LEE'S SUMMIT, MISSOURI STANDARD DESIGN CRITERIA AND SPECIFICATIONS

7000 Small Wireless Facilities

7000.1 Definitions:

“Antenna” means communications equipment that transmits or receives electromagnetic radio frequency signals used in providing wireless services.

“Antenna Mounting Bracket” means the hardware required to secure the antenna to the pole.

“Antenna Mounting Post” means the vertical post or pipe that the antenna mounting bracket is mounted to in order for the antenna to be attached to the pole.

“Antenna Shroud” means the three-sided cover that is mounted at the base of the antenna to conceal the appearance of the cables and wires from the hand-hole port on the pole to the bottom-fed antenna.

“Canister Antenna” means the canister or cylinder style housing used to conceal the antenna(s), amplifier(s), radio(s), cables, and wires at the top of a pole.

“City Streetlight Pole” means a City Utility Pole owned solely by the City that serves principally as a streetlight.

“City Utility Pole” means a Utility Pole owned, managed, operated or maintained by the City or a utility pole managed, operated and maintained on behalf of the City, including but not limited to City Streetlight Pole, Electric Company Streetlight Pole, or City traffic signal or traffic control, signage, sign posts or poles having a similar function owned by the City. The term “City Utility Pole” shall not include municipal electric utility distribution pole.

“Communications Equipment” means any and all electronic equipment at the Small Wireless Facility location that processes and transports information from the antennas to the Wireless Provider’s network.

“Dog House” means the plastic or metal attachment to the base of a pole that covers/shrouds the transition point of underground cables and wires to the vertical section of the utility pole.

“Electric Company Streetlight Pole” means a third-party streetlight pole, owned, installed, operated and maintained by the electric company on behalf of the City, that: (i) serves solely as a streetlight and does not facilitate electric utility distribution; (ii) is a municipal street light authorized by the City and regulated according to City Resolution 06-04; and (iii) is subject to applicable tariffs and rules published by the Missouri Public Service Commission.

“Ground Mounted Equipment” means any communications equipment that is mounted to a separate post or to a foundation on the ground or vaulted below ground

“Light Emitting Diode” or “LED” means a type of lighting fixture installed on streetlight and traffic signal poles.

“Light Fixture” means the lighting unit or luminaire that provides lighting during the evening hours or during the hours of darkness.

“Luminaire Mast Arm” or “Mast Arm” means the horizontal arm that attaches the light fixture or traffic signal fixtures to the streetlight pole or traffic signal pole, as applicable.

“Micro Wireless Facility” means a small wireless facility that both (i) is not larger in dimension than twenty-four inches in length, fifteen inches in width, and twelve inches in height and (ii) has no exterior antenna that is longer than eleven inches.

“Omni-directional Antenna” also referred to as an “omni antenna” this antenna is round in shape, like a pipe, and may be about one (1) inch diameter up to about six (6) inches diameter.

“Outside Diameter” or “OD” means the points of measurement, using the outer edges of a pole, pipe or cylinder.

“Panel Antenna” means the style of antenna that is rectangular in shape and with dimensions that are generally four (4) feet to eight (8) feet in height, by eight (8) inches to twelve (12) inches wide, and four (4) inches to nine (9) inches deep.

“Remote Radio Heads (RRH) / Remote Radio Units (RRU)” means the electronic devices that are used to amplify radio signals so that there is increased performance (farther distance) of the outgoing radio signal from the antenna.

“Right-of-way” (ROW) as defined for wireless sites means the area on, below or above a public roadway, highway, street, sidewalk, alley, or similar property used for public travel. Right-of-way does not include a Federal Interstate Highway, railroad right-of-way, or a private easement.

“Sight Distance Easements” means the area of land adjacent to an intersection, driveway or roadway that has restrictive uses in order to preserve the view of oncoming or crossing vehicular and pedestrian traffic by drivers in vehicles attempting to merge with traffic or enter a roadway.

“Sight Visibility Triangles” means the traffic engineering and safety concept that requires clear view by the driver of a vehicle to crossing traffic at a stop sign, driveway or intersection. In order to achieve clear visibility of the cross traffic, the land areas in the sight visibility triangle has specific maximum heights on landscaping, cabinets, and other potential view obstructions.

“Small Wireless Facility” or “SWF” means a Wireless Facility that meets both of the following qualifications:

- (a) Each wireless provider’s antenna could fit within an enclosure of no more than six cubic feet in volume; and

- (b) All other equipment associated with the wireless facility, whether ground or pole mounted, is cumulatively no more than twenty-eight cubic feet in volume, provided that no single piece of equipment on the pole shall exceed nine cubic feet in volume; and no single piece of ground mounted equipment shall exceed fifteen cubic feet in volume, exclusive of equipment required by an electric utility or municipal electric utility to power the small wireless facility.

The following types of associated ancillary equipment shall not be included in the calculation of equipment volume: electric meter, concealment elements, telecommunications demarcation box, grounding equipment, power transfer switch, cut-off switch, and vertical cable runs and related conduit for the connection of power and other services.

“Stealth and Concealment Elements” means the use of shrouds, decorative elements, design concepts and faux elements so that a small wireless facility can be designed to blend in with the surrounding streetscape with minimal, if any, visual impact.

“Utility Pole” means a pole or similar structure that is or may be used in whole or in part by or for wireline communications, electric distribution, lighting, traffic control, signage, or a similar function, or for the collocation of small wireless facilities; provided, however, such term shall not include wireless support structures, electric transmission structures, or breakaway poles owned by the state highways and transportation commission. Utility Pole as defined and referenced herein does not include City Utility Poles as those types of poles are defined, described and referenced with more specific design criteria and specifications than a Utility Pole in general.

“Wireless Facility” Means equipment at a fixed location that enables wireless communications between user equipment and a communications network, including equipment associated with wireless communications and radio transceivers, antennas, coaxial or fiber-optic cable, regular and backup power supplies, and comparable equipment, regardless of technological configuration. The term includes small wireless facilities. The term does not include: the structure or improvements on, under, or within which the equipment is collocated; coaxial or fiber-optic cable between wireless support structures or utility poles; coaxial or fiber-optic cable not directly associated with a particular small wireless facility; or a wireline backhaul facility.

“Wireless Infrastructure Provider” means any person, including a person authorized to provide telecommunications service in the state, that builds or installs wireless communication transmission equipment or wireless facilities but that is not a wireless services provider.

“Wireless Provider” means a wireless infrastructure provider or a wireless services provider.

“Wireless Services” means any services using licensed or unlicensed spectrum, including the use of wifi, whether at a fixed location or mobile, provided to the public using wireless facilities.

“Wireless Services Provider” means a person who provides wireless services.

“Wireless Support Structure” means an existing structure, such as a monopole or tower, whether guyed or self-supporting, designed to support or capable of supporting wireless facilities; an existing or proposed billboard; an existing or proposed building; or other existing or proposed structure capable of supporting wireless facilities. Such term shall not include a Utility Pole.

7000.2 Small Wireless Facility Design Requirements on Streetlight:

The following design standards shall apply, in addition to the *Common Standard Design Conditions, Requirements and Details* that are included in Section 7000.7, to a Small Wireless Facility (SWF) and associated pole proposed for collocation on an existing or replacement City Streetlight Pole or Electric Company Streetlight Pole or new Electric Company Streetlight Pole in the City ROW. These design standards are not exhaustive and the City, as the owner, keeper and manager of the ROW retains the right to modify or adjust the requirements.

7000.2.A Pole Criteria:

1. *Purpose of Streetlight Pole:* The primary purpose of the pole shall remain as a pole structure supporting a streetlight luminaire and related streetlight fixtures used to provide lighting to the City ROW. The attachment of wireless equipment to an existing pole or to a replacement pole or to a new pole that impedes this primary purpose will not be approved.
2. *General Requirements:*
 - a) An SWF shall be designed to blend in with the surrounding streetscape with minimal visual impact using color, material, location and shape substantially similar to that of the surrounding environment and structure upon which it is attached.
 - b) Use of Existing City Streetlight Pole or Replacement City Streetlight Pole:
 - 1) The existing pole or replacement pole with SWF collocation shall be and remain a City pole.
 - 2) For public safety purposes, a SWF collocation and any related attachments to existing pole or replacement pole shall not conflict or interfere with minimum vertical clearances applicable to Americas with Disabilities Act (“ADA”), Manual on Uniform Traffic Control Devices (“MUTCD”) and other sign or traffic control device attachments.
 - 3) No new City Streetlight Pole shall be installed solely for the purpose of collocating a SWF. For clarification purposes, a replacement City Streetlight Pole shall be not be considered a new City Streetlight Pole under this provision.
 - 4) A replacement pole of the City’s ownership and maintenance shall match the existing City Streetlight Pole as closely as possible to include any unique design characteristics and decorative aesthetics of the existing pole and/or existing adjacent poles along a corridor, subject to more specific criteria below. All replacement poles shall be materially new.
 - 5) An existing pole or replacement pole used for a SWF shall have the antennas contained within an eighteen inch (18”) (OD) canister mounted at the top of the

pole or a panel antenna that is mounted within six inches (6") from the face of the pole to the back of antenna.

6) Panel antennas on a pole shall have the same center of radiation so the antennas will be at the same height on the pole.

7) The cables and wires from the base of the pole to the antennas shall be installed in a conduit inside the pole.

8) A "dog house" is not permitted as a transition point connecting the underground cables and wires from the ground mounted equipment to the pole, a conduit shall be installed through the foundation.

9) All other SWF equipment, with exception of mounting brackets, cables, wires, conduit, shrouds and other hardware or material used to attach antennas to the pole, provide concealment and supply service between antenna and ground equipment shall not be attached to the pole, but shall be ground mounted in accordance with the *Common Standard Design Conditions, Requirements and Details* included in Section 7000.7.

c) Use of Existing, Replacement or New Electric Company Streetlight Pole

1) Any replacement pole, whether the existing pole is wood or metal, or new Electric Company Streetlight Pole authorized by City, shall be a metal pole in accordance with other General and Specific Criteria in Section 7000.

2) A replacement Electric Company Streetlight Pole shall match the existing Electric Company Streetlight Pole, as closely as possible to include any unique design characteristics and decorative aesthetics of the existing pole and/or existing adjacent poles along a corridor, subject to more specific criteria below.

3) A new Electric Company Streetlight Pole shall not be installed solely for the purpose of collocating a SWF and any request for new Electric Company Streetlight Pole may be denied by City where the basis of established City standards, policies and practice for City authorization of new streetlight installation by electric company has not been satisfied.

4) A SWF shall have the antennas contained within an eighteen (18) inch (OD) canister mounted at the top of the pole or a panel antenna that is mounted within six (6) inches from the face of the pole to the back of antenna.

5) Panel antennas on a pole shall have the same center of radiation so the antennas will be at the same height on the pole.

6) Unless otherwise prohibited by electric company, the cables and wires from the base of a pole to the antennas shall be installed in a conduit or cable chase inside of the pole for metal poles and outside of the pole facing away from the street or away from on-coming traffic for wood poles. If the cables and wires must be located on the outside of a metal pole, the conduit or cable chase shall face away from the street or away from on-coming traffic.

7) If a "dog house" is required as a transition point connecting the underground cables and wires from the ground mounted equipment to the pole, the dog house shall not exceed minimum dimensions, size and shape as necessary for its intended function.

8) All other SWF equipment, with exception of mounting brackets, cables, wires, conduit, shrouds and other hardware or material used to attach antennas to the

pole, provide concealment and supply service between antenna and ground equipment shall not be attached to the pole, but shall be ground mounted in accordance with the *Common Standard Design Conditions, Requirements and Details* included in Section 7000.7.

- d) A replacement Electric Company Streetlight Pole or new Electric Company Streetlight Pole that may be approved by the City shall match and comply with the City of Lee's Summit standards for an Electric Company Streetlight Pole, as closely as possible, and which may be available and/or acceptable to applicable electric company requirements. Any replacement or new Electric Company Streetlight Pole shall not have a material, design, operation or maintenance element that incurs additional expense to City, as determined by electric company and part of the municipal lighting costs from electric company to City, above that which a standard Electric Company Streetlight Pole without SWF would normally be charged.
- e) All plans shall be signed and sealed by a Registered Missouri Professional Engineer.
- f) Architectural Integration with Surrounding Area in Historic Districts
 - 1) The new or replacement pole shall be designed in compliance with the Unified Development Ordinance, including the provisions regarding Historic Districts.
 - 2) No new or replacement pole shall be constructed without the written approval of the Director of Development Services Department.
 - 3) The City may require the new or replacement pole to be constructed of a specific material that will enhance the stealth and concealment of the site, provided that such specific material is made available to Wireless Provider prior to receipt of Wireless Provider's application.
- g) Unless otherwise specified, new and replacement poles, associated streetlight mast arms, and existing attachments (e.g. signs) owned and maintained by City shall meet City standards and specifications except only as those standards and specifications may be structurally modified to meet minimum requirements in support of allowable SWF attachments according to Wireless Provider's structural engineer approved plans. The aforementioned shall be designed, procured and installed by Wireless Provider and at Wireless Provider's expense for continued ownership, maintenance and use by City for its intended primary purpose.
- h) All other applicable details, standards, criteria and specifications in the City of Lee's Summit Design and Construction Manual, including Streetlight Design Criteria, Standards and Specifications and the City of Lee's Summit Resolution 06-04, practices and policies regarding Electric Company Streetlight Pole shall also apply.

3. *Specific Criteria:*

- a) **Maximum Height.** A new or replacement pole with small wireless facilities may only be installed within the ROW without the applicable Planning and Zoning application

which may apply to other utility poles and are consistent with Sections 67.5090 to 67.5103 of RSMo if one of the following height requirements is met:

- 1) The pole height shall not exceed a ten (10) foot increase above the tallest existing utility pole in place before January 1, 2019 located within five hundred (500) feet of the new or replacement pole in the same ROW, not to exceed fifty (50) feet above ground level (whichever is greater); or
- 2) The small wireless facilities do not extend more than ten (10) feet above an existing utility pole (or replacement utility pole) in place as of August 28, 2018, or, for small wireless facilities on a new utility pole, above the height permitted for a new utility pole in Section 7000.2.A.3.a).1).

The maximum height of an existing, modified, replacement or new pole, including any SWF collocation, shall not exceed the maximum height allowed by any applicable federal laws or regulation, including but not limited to Federal Aviation Administration (FAA) regulations governing air space where such FAA regulations apply in the City.

The proposed pole location and height and the location and height of reference pole for determining the maximum allowable pole height shall be shown on the plans.

b) Measure of Height:

- 1) The height of an existing streetlight pole shall be the height of the vertical pole section from the existing grade. The height of the luminaire mast arm, if higher than the vertical pole section, shall not be used to determine the new overall height.
- 2) If the antennas are the highest vertical element of the site, then the new overall height of the pole is measured from the existing grade to the top of the canister, top of the omni-directional antenna, or the top of the panel antenna.

c) Increase in Outside Diameter (OD) of City Pole: The non-tapered replacement pole outside diameter (OD) of the base section shall be equal to the top section, and the OD shall not exceed eight and five-eighths inches (8-5/8") (the pole manufacturing industry standard OD for an 8-inch diameter pole) or a 100% increase in diameter of the original pole, whichever is less.

d) Luminaire Mast Arms on City Pole:

- 1) All luminaire mast arms shall be the same length as the original luminaire arm, unless the City requires the mast arm to be different (longer or shorter) based upon the location of the replacement pole.
- 2) Unless otherwise approved, all luminaire mast arms shall match the arc (if applicable) and style of the original luminaire arm.
- 3) If the luminaire arm is more than seven (7) feet from back of curb, then the replacement mast arm shall be lengthened (not to exceed eight (8) feet) to meet the light coverage requirement.
- 4) The replacement luminaire mast arm shall be at the same height above the ground as the existing luminaire or at a height determined by the City Engineer.

- e) Luminaire Fixtures (Existing Non-LED) on City Pole:
- 1) Unless otherwise specified, all replacement poles shall have a new light-emitting diode (LED) light fixture that meets City standards and specifications procured and installed by Wireless Provider at Wireless Provider's expense.
 - 2) All replacement light fixtures shall replace any existing photo-cell or sensor with a new photo-cell or sensor installed to City standards and specifications and have a 20-year fail-off, i.e., the luminaire stays in the "off" state when the sensor – that has a 20-year working life expectancy – is either not working properly or is at end of life.
- f) Luminaire Fixtures (Existing LED) on City Pole:
- 1) Luminaires that have been converted to LED fixtures must be moved from the existing pole to the replacement pole by the City to maintain the warranty of the LED fixture. Whenever the City determines no such warranty condition exists, the City may require the Wireless Provider to move the LED fixture from existing pole to the replacement pole.
 - 2) If the replacement pole location is substantially different from the existing pole and alters the luminaires lighting of roadway to the extent the City Engineer determines an alternate fixture is required to maintain existing conditions, the Wireless Provider is responsible for the procurement and installation of a new LED fixture, as directed by the City Engineer, upon the replacement pole.
 - 3) The Wireless Provider is responsible for the cost to move the existing LED fixture.
- g) City Pole Foundation/Base:
- 1) All pole foundations (also referred to as pole bases) shall conform to the City's adopted standards and specifications on streetlight design for concrete bases and shall be modified only as necessary to support wireless communications equipment, conduit and cables and pole capable of supporting SWF attachments. No screw-in anchor bases will be allowed for existing pole with SWF attachment or replacement pole with SWF attachment.
 - 2) The City, in its sole discretion, may allow the pole foundation design to be "worst case" for all soil conditions.
 - 3) Four (4), one (1) inch diameter (or larger) conduits, per City standards and specifications for street lighting, shall be installed in the pole foundation. Two, two (2) inch diameter conduits shall be dedicated for the City's luminaire light circuit wire and any additional City wires or cables that exist in the original pole. One of these conduits may be omitted at the discretion of City Engineer on a case-by-case basis if the conduit does not exist in the original pole foundation. The City's conduit shall be from the City pull box or City junction box into the pole foundation and trimmed at the bottom of the hand hole on the pole that is depicted on City streetlight standards. One, one (1) inch diameter conduit is for bonding the pole through the foundation to the ground rod. One, one (1) inch diameter conduit is for Wireless Provider's wires or cables that shall be from the Wireless Provider's junction box into the pole foundation and trimmed at the bottom of the hand hole that is depicted on City streetlight standards from the base of the pole.

- 4) A pole foundation will not be accepted within a sidewalk area. A pole foundation adjacent to and abutting sidewalk must have a concrete collar surrounding the pole that has a height, slope and other collar dimensions and location substantially consistent with the same City standards and specifications for concrete streetlight bases adjacent to or abutting sidewalk.
 - 5) A pole foundation in a landscape area, in a natural dirt or native area must have the top of the foundation match the height of the nearest curb, or not exceed two (2) inches above finished grade.
 - 6) A shroud or “clam shell” or bolt covers for the streetlight pole mounting bolts is required for the pole according to City standards and specifications for streetlights.
- h) Conduit for Wireless Provider’s Wires/Cables in City Pole: The Wireless Provider shall install a one-inch diameter non-metallic flex conduit from a point just above the top of the hand-hole that is above the base of the pole to the luminaire. This conduit will provide the separation between the wires and cables for the City and the Wireless Provider’s wires and cables.
- i) Painting and Aesthetics of Pole
- 1) If the new or replacement pole is an unpainted galvanized pole, the pole shall not be painted or have a finish unless otherwise specified by the City.
 - 2) For powder coated (or painted) type City poles, the replacement pole shall be painted the same color and/or color combination as the existing pole by the Wireless Provider.
 - 3) For powder coated (or painted) type Electric Company poles, the new or replacement pole shall be painted and finished to match the existing pole or adjacent streetlights if none exist.
 - 4) The City may require the new or replacement pole to be painted using a powder-coat process.
 - 5) For any decorative type poles, the replacement pole shall match the existing pole including, but not limited to, the same decorative elements, color, design, style, fixture and height of the existing pole, which all contribute to pole aesthetics of a decorative pole and visual appearance or sight line of the ROW.
- j) Painting Antennas, Mounting Equipment, and Dog House
- 1) All antenna mounting brackets and hardware, antenna mounting posts, cables, shrouds and other equipment mounted on an existing, new or replacement unpainted galvanized pole shall be painted Dunn Edwards Crestline (DE 6325) color or equivalent, unless specified otherwise by the City.
 - 2) If the antenna is mounted on a wood pole, the color of the antenna, antenna canister, mounting brackets and posts, shrouds and cable chases shall be painted a color specified by the City that will closely match the color of the wood.
 - 3) All antenna mounting brackets and hardware, antenna mounting posts, cables, shrouds and all other equipment mounted on a painted existing, new or replacement pole shall be painted a color specified by the City to match that of the

existing pole which is replaced, or if new, that of adjacent streetlight poles, as applicable.

4) If the existing, replacement, or new pole includes a dog house for the transition of the cables and wires to the pole exterior, the dog house shall be painted the same color as the pole or a color specified by the City.

- k) Wireless Provider shall install pole identifications on each replacement pole to match the identification on the existing streetlight pole being replaced, or in the case of a new streetlight, the identification provided by the electric company. The pole identification shall be materially consistent with the identification means used by the City or electric company, as applicable.
- l) For any replacement or new Electric Company Streetlight Pole, the Specific Criteria set forth above for design and construction are subject to said electric company requirements and approval, but shall also meet any applicable City standards and specifications, to the extent possible, agreed to by and between City and electric company for electric company provided municipal street lights.

7000.3 Small Wireless Facility on Traffic Signal Pole: The primary purpose of the traffic signal pole, as referred to as traffic control pole, shall remain as a pole structure supporting a traffic signal and related streetlight fixtures used to provide traffic control and lighting to the City ROW. The use of traffic signal poles for anything except its primary purpose must not be impeded whatsoever. The following design criteria and specifications apply to SWF's and City traffic signals, which is a specific type of City Utility Pole described herein, for public safety and aesthetics:

- a) All wires and cables for a SWF attachment to a City pole shall be contained and concealed inside the pole.
- b) No City wires, cables or conduits will be shared with Wireless Provider for its SWF.
- c) All conduits from SWF ground based equipment to antenna on the City pole shall be located underground and through the pole foundation.
- d) No existing signal pole foundation has conduit for SWF wires and cables and therefore requires replacement, in accordance with the *Common Standard Design Conditions, Requirements and Details*, before SWF can be attached to a traffic signal pole.
- e) Traffic signal operations shall not be disrupted for the installation or maintenance of SWF.
- f) A SWF shall not interfere with traffic signal operations, including wireless traffic signal communications, or the need for City to install or maintain traffic signal and/or traffic control related equipment or materials on the traffic signal pole.

A new traffic signal pole for SWF requires the intersection meet traffic signal warrants and the installation of a new traffic signal controlled intersection in the interest of public safety.

The *Common Standard Design Conditions, Requirements and Details* that is included in Section 7000.7, applicable streetlight provisions in Section 7000.2, and all other applicable details, standards, criteria and specifications in the City of Lee's Summit Design and Construction

Manual, including Traffic Signal Design Criteria, Standards and Specifications, shall apply to a Small Wireless Facility (SWF) proposed on an existing, modified, new or replacement City traffic signal pole, which is a specific type of City Utility Pole described herein, in the City ROW.

7000.4 Small Wireless Facility on Signage, Sign Posts or Poles with a Similar Function owned by the City: The primary purpose of poles and posts for traffic control signage shall remain as a pole structure supporting signs and traffic control related equipment, materials and fixtures used to provide traffic control to the City ROW. The use of traffic control signs, sign posts, or poles for anything except its primary purpose must not be impeded whatsoever. The following design criteria and specifications apply to SWFs and City Utility Poles not otherwise specified in Sections 7000.2 and 7000.3 for public safety and aesthetics:

- a) All wires and cables for a SWF attachment to a City pole shall be contained and concealed inside the pole.
- b) Any replacement post or pole shall match the existing post or pole, including size, type, design, color, and height.
- c) All traffic control device or sign posts and poles shall not have attachments that interfere with the sign or traffic control device, including the ability of the public from reading or viewing the sign or device.

The *Common Standard Design Conditions, Requirements and Details* that are included in Section 7000.7, applicable streetlight provisions in Section 7000.2, and all other applicable details, standards, criteria and specifications in the City of Lee's Summit Design and Construction Manual, including Traffic Sign Design Criteria, Standards and Specifications, shall apply to a SWF proposed on an existing, modified, new, or replacement City traffic control device or sign post or pole in the City ROW.

7000.5 Small Wireless Facility on Utility Pole:

The following design standards shall apply, in addition to the *Common Standard Design Conditions, Requirements and Details* that is included in Section 7000.7, to a Small Wireless Facility (SWF) proposed on an existing third party-owned utility pole or replacement third party-owned utility pole or new third-party utility pole in the City Right-of-way (ROW). Third-party may include wireless providers as indicated herein Section 7000.5.A.1. These design standards are not exhaustive and the City, as the owner, keeper and manager of the ROW retains the right to modify or adjust the requirements. Any reference to utility pole in this Section shall not include City Utility Poles, which are uniquely addressed in Sections 7000.2, 7000.3 and 7000.4.

7000.5.A. Pole Criteria:

1. *Purpose of Utility Pole:* The primary purpose of the pole shall remain as a pole structure owned by a third-party supporting cables and wires used to provide communications services and/or electric distribution in the City ROW. Wireless Provider shall provide written documentation of owner's consent and approval for SWF attachment.

2. *General Requirements:*

- a) An SWF shall be designed to blend in with the surrounding streetscape with minimal to any visual impact using color, material, location and shape substantially similar to that of the surrounding environment and structure upon which it is attached.
- b) To the extent possible, all new Utility Poles in the City ROW must serve a dual purpose other than solely a support structure for SWF.
- c) A SWF mounted on a Utility Pole is subject to more specific criteria below.
- d) All plans shall be signed and sealed by a Registered Missouri Professional Engineer.
- e) Architectural Integration with Surrounding Area in Historic Districts
 - 1) The new or replacement pole shall be designed in compliance with the Unified Development Ordinance, including the provisions regarding Historic Districts.
 - 2) No new or replacement pole shall be constructed without the written approval of the Director of Development Services Department.
 - 3) The City may require the new or replacement pole to be constructed of a specific material that will enhance the stealth and concealment of the site.

3. *Specific Criteria:*

a) Pole Height

A new or replacement pole with small wireless facilities may be installed within the ROW without applicable Planning and Zoning application which may apply to other utility poles and are consistent with RSMo §§ 67.5090 to 67.5103 if one of the following height requirements is met:

- 1) The pole height shall not exceed a ten (10) foot increase above the tallest existing utility pole in place before January 1, 2019 located within five hundred (500) feet of the new or replacement pole in the same ROW, not to exceed fifty (50) feet above ground level (whichever is greater); or
- 2) The small wireless facilities shall not extend more than ten (10) feet above an existing utility pole (or replacement utility pole) in place as of August 28, 2018, or for small wireless facilities on a new utility pole above the height permitted for a new utility pole in Section 7000.4.A.3.a).1).

The maximum height of an existing, modified, replacement or new pole, including any SWF collocation, shall not exceed the maximum height allowed by any applicable federal laws or regulation, including but not limited to Federal Aviation Administration (FAA) regulations governing air space where such FAA regulations apply in the City.

b) Measure of Height

- 1) The height of an existing utility pole shall be the height of the vertical pole section from the existing grade.

2) If the antennas are the highest vertical element of the site, then the new overall height of the new pole or replacement pole is measured from the existing grade to the top of the canister or the top of the panel antenna.

c) Use of Wood Pole

1) An existing, new or replacement wood pole used for a SWF shall have the antennas contained within an eighteen inch (18") (OD) canister mounted at the top of the pole or a panel antenna that is mounted within six inches (6") from the face of the pole to the back of antenna.

2) Panel antennas on a metal pole shall have the same center of radiation so the antennas will be at the same height on the pole.

3) Unless otherwise approved, the cables and wires from the base of the pole to the antennas shall be installed in a conduit or cable chase outside of the pole, facing away from the street or away from on-coming traffic.

4) If a "dog house" is required as a transition point connecting the underground cables and wires from the ground mounted equipment to the pole, the dog house shall not exceed minimum dimensions, size and shape as necessary for its intended function.

d) Use of Metal Pole

1) An existing, new or replacement metal pole used for a SWF shall have the antennas contained within an eighteen inch (18") (OD) canister mounted at the top of the pole or a panel antenna that is mounted within six inches (6") from the face of the pole to the back of antenna.

2) Panel antennas on a metal pole shall have the same center of radiation so the antennas will be at the same height on the pole.

3) Unless otherwise prohibited by the utility pole owner, the cables and wires from the base of a pole to the antennas shall be installed in a conduit or cable chase inside of the pole. If the cables and wires must be located on the outside of the pole, the conduit or cable chase shall face away from the street or away from on-coming traffic.

4) If a "dog house" is required as a transition point connecting the underground cables and wires from the ground mounted equipment to the pole, the dog house shall not exceed minimum dimensions, size and shape as necessary for its intended function.

e) Painting of Pole and Dog House

1) If the new or replacement pole is an unpainted galvanized pole, the pole shall not be painted or have a finish unless otherwise specified by the City.

2) For any new or replacement pole that the City specifies a painted or otherwise decorative finish, the City shall identify the paint colors, location of paint and any decorative work that may be applicable to the new or replacement pole so as to match nearby streetlights or as part of stealth and concealment for Wireless Provider's reference.

3) The City may require the new or replacement pole to be painted using a powder-coat process.

4) If the existing, new or replacement pole includes a dog house for the transition of the cables and wires to the pole, the dog house shall be painted the same color as the pole or a color specified by the City.

f) Painting Antennas and Mounting Equipment

1) All antenna mounting brackets and hardware, antenna mounting posts, cables, shrouds and other equipment mounted on a new or replacement unpainted galvanized pole shall be painted Dunn Edwards Crestline (DE 6325) color or equivalent, unless specified otherwise by the City.

2) All antenna mounting brackets and hardware, antenna mounting posts, cables, shrouds and all other equipment mounted on a painted new or replacement pole shall be painted a color specified by the City to match said pole.

3) If the antenna is mounted on a wood pole, the color of the antenna, antenna canister, mounting brackets and posts, shrouds and cable chases shall be painted a color specified by the City that will closely match the color of the wood.

g) Stealth and Concealment Elements

1) The Wireless Provider is solely responsible for the cost of all stealth and concealment elements and the installation of other elements required by the City.

2) The Wireless Provider is responsible for the performance of and any costs incurred for regular upkeep, maintenance and replacement (if necessary) of such stealth and concealment elements.

h) Pole Clearance – Doorways of Businesses and Residences.

Any new or replacement utility pole must be at least twenty-five feet (25') from the primary doorway of a business or residence measured from the outer door frame and at least ten feet (10') from the primary entrance of a business or residence measured at the edge of City ROW.

i) Pole Foundation

1) The foundation for the new or replacement utility pole, if required, shall conform to civil and structural engineering standards acceptable to the City, with design modifications for wireless communications equipment and cables.

2) The height of the foundation shall be two inches (2") above finished grade. However, if the foundation is adjacent to a sidewalk or ramp, the height of the pole foundation shall be flush with the surface of the immediate area. Foundations shall not be located within a sidewalk or ramp.

3) Shrouds or covers for any mounting bolts shall be required.

7000.6 Small Wireless Facility on Wireless Support Structure in ROW:

The following design standards, in addition to the *Common Standard Design Conditions, Requirements and Details* that are included in Section 7000.7, shall apply to a Small Wireless Facility (SWF) on a Wireless Support Structure, as defined by the City of Lee's Summit Standard Terms and Conditions for the Placement of Wireless Facilities in the Right-Of-Way that a Wireless Provider may install in the ROW.

A new or replacement Wireless Support Structure shall incorporate the stealth and concealment of the antennas and wireless equipment to minimize the visual impact of the site to the public.

7000.6. A. Criteria:

1. *Purpose of Wireless Support Structure:* The primary purpose of a Wireless Support Structure is that for which its designed and not to attach antennas for the provision of wireless services by a Wireless Provider in the City's ROW. The attachment of wireless equipment to an existing Wireless Support Structure that impedes the owner's primary purpose will not be approved. Wireless Provider shall provide written documentation of owner's consent and approval for SWF attachment.
2. *General Requirements:*
 - a) An SWF shall be designed to blend in with the surrounding streetscape and/or structure with minimal to any visual impact using color, material, location and shape substantially similar to that of the surrounding environment and structure upon which it is attached.
 - b) All new Wireless Support Structures in the City ROW must serve a dual purpose such as a utility pole, streetlight pole or traffic signal pole. A new or replacement Wireless Support Structure shall be designed to minimize the visual and aesthetic impact of the new vertical element and associated equipment upon the look, feel, theme, and use of the surrounding area.
 - c) The new or replacement Wireless Support Structure shall be architecturally integrated and compatible with the use of the surrounding area.
 - d) The height of the new Wireless Support Structure cannot exceed the maximum allowed height, to the extent permitted by applicable law, of the zoning district that the site is proposed.
 - e) All plans shall be signed and sealed by a Registered Missouri Professional Engineer.
3. *Specific Criteria:*
 - a) New Pole Height. A new or replacement Wireless Support Structure may not be installed without zoning review to the extent permitted by applicable law.

The maximum height of an existing, modified, replacement or new Wireless Support Structure, including any SWF collocation, shall not exceed the maximum height allowed by any applicable federal laws or regulation, including but not limited to Federal Aviation Administration (FAA) regulations governing air space where such FAA regulations apply in the City.

- b) Measure of Height. The height of the new Wireless Support Structure is measured from grade to top of the antenna canister, or the top of the panel antenna if the antennas are the highest elements of the site. Otherwise, the measured height shall be from existing grade to the highest point of the Wireless Support Structure.
- c) Stealth and Concealment Elements
 - 1) The Wireless Provider is solely responsible for the cost of all stealth and concealment elements and the installation of other elements required by the City.
 - 2) The Wireless Provider is responsible for the performance of and any costs incurred for regular upkeep, maintenance and replacement (if necessary) of these stealth and concealment elements.
- d) Architectural Integration with Surrounding Area in Historic Districts
 - 1) The new or replacement pole shall be designed in compliance with the Unified Development Ordinance, including the provisions regarding Historic Districts.
 - 2) No new or replacement pole shall be constructed without the written approval of the Director of Development Services Department.
 - 3) The City may require the new or replacement pole to be constructed of a specific material that will enhance the stealth and concealment of the site.
- e) Clearance – Doorways of Businesses and Residences.

Any new or replacement Wireless Support Structure must maintain a minimum twenty-five (25) foot distance from the primary doorway of a business or residence measured from the outer door frame and a minimum ten (10) foot distance from the primary entrance of a business or residence measured at the edge of City ROW.
- f) Foundations
 - 1) The foundation for the Wireless Support Structure, if required, shall conform to civil and structural engineering standards acceptable to the City, with design modifications for wireless communications equipment and cables.
 - 2) The height of the foundation shall be two (2) inches above finished grade, as may or may not be applicable depending on the structure. However, if the foundation is adjacent to a sidewalk or ramp, the height of the pole foundation shall be flush with the surface of the immediate area. Foundations shall not be located within a sidewalk or ramp.
 - 3) Shrouds for any mounting bolts may be required.
- g) Painting of Wireless Support Structure, Antennas and Mounting Equipment
 - 1) The City shall identify the paint colors, location of paint and any decorative work that may be painted onto the new Wireless Support Structure where painting is directed by the City to match the surroundings or as part of stealth and concealment.
 - 2) The City shall identify the paint colors for the antennas, antenna mounting brackets and posts, antenna shrouds, cables, etc. where painting is directed by the City to match the surroundings or as part of stealth and concealment.

3) The City may require the new Wireless Support Structure to be painted using a powder-coat process.

- h) Screening. The City may require the Wireless Support Structure and ground-mounted wireless equipment to be screened or concealed using landscape and other materials consistent with screening or concealment requirements in the Unified Development Ordinance for most similar structures or land use buffers to reduce the visual impact to the surrounding area. The screening or concealment shall take into account the location of the site, the use of the immediate area, and the existing aesthetic elements surrounding the site.

7000.7 Small Wireless Facility in the ROW

The following *Common Standard Design Conditions, Requirements and Details* shall be applied to all Small Wireless Facilities in the City’s ROW, including but not limited to a Small Wireless Facility to be installed on an existing, new or replacement City Utility Pole, an existing, new or replacement Utility Pole, or on an existing, new or replacement Wireless Support Structure.

7000.7.A. Prior Approval Required for Proposed Small Wireless Facility in Historical Districts

All proposed Small Wireless Facility collocations on City Utility Poles, Utility Poles, or Wireless Support Structures in a City Historical District must be submitted for review and receive an applicable letter of authorization from the City’s Development Services Department as a requirement for application. The letter of authorization acknowledges zoning approval for the proposed collocation or new, modified, or replaced Utility Pole requirements.

7000.7.B. City Structural Review and Approval of Pole and Foundation Required

All poles and wireless support structures that will be used for the collocation of a Small Wireless Facility must receive approval by the City Engineer. The Wireless Provider shall submit two sets of the structural calculation documents and two 24” x 36” sets of the engineering drawings stamped and sealed by a registered Professional Engineer in the state of Missouri with the application. If the exact same pole, style, height, foundation, luminaire, attachments and substantially the same subsurface ground conditions as those subsurface conditions may be conservatively assessed to address a variety of conditions and locations (e.g. a “worst case” scenario) will be used for more than one location, the Wireless Provider may obtain approval for such pole from the City, or applicable third-party, for typical use and application, but shall be noted by a unique identifier assigned by City for reference.

7000.7.C. Existing Non-conforming Poles – Not Eligible for Small Wireless Facility

Any existing pole that is deemed by the City to be non-conforming to current construction standards and specifications, or building and safety requirements is not eligible for use or replacement for collocation of a Small Wireless Facility. The City and Wireless Provider may agree on a location that is in conformance to current construction standards and specifications and building and safety requirements that is near the non-conforming pole. If this is the case, the

Wireless Provider may replace the non-conforming pole at the new or same location in the City's ROW as determined by City.

7000.7.D. Radio Frequency Spacing from Occupied Structures

All proposed Small Wireless Facilities in the City ROW must comply with the Federal Communications Commission's estimated "worst case" horizontal distances at the same elevation from windows, balconies and public spaces.

7000.7.E. Pole Design & Installation

1. New and Replacement Pole Clearances – Underground Utilities

All ground-mounted electrical equipment shall maintain minimum horizontal clearance from underground utilities.

- Clearance from water main pipes and lines shall be at least six (6) feet.
 - Clearance from customer water service lines shall be at least three (3) feet.
 - Clearance from sewer main pipes and lines shall be at least six (6) feet.
 - Clearance from customer sewer service lines shall be at least three (3) feet.
 - Clearance from telecommunications shall be at least two (2) feet.
 - Clearance from cable television lines shall be at least two (2) feet.
 - Clearance from natural gas lines shall be at least two (2) feet.
 - Clearance from all other underground infrastructure shall be at least six (6) feet.
- a) The City, in its sole discretion, may grant a variance, upon approval by the Director of Water Utilities Department, from these water and sewer horizontal separation distances and upon approval by the City Engineer, from all other City owned or City maintained underground infrastructure horizontal separation distances on a case-by-case basis. The approval of a variance is dependent of factors specific to the site.
 - b) In the case where there is an issue with horizontal separation from other third-party owned underground utilities, the Wireless Provider may elect to work with the impacted utility to have lines, pipes or property moved so that minimum clearance is achieved or provide written documentation from said owner of an approved variance.
 - c) All moving or relocating of City-owned or a third-party-owned utility shall be at the sole expense of the Wireless Provider.
 - d) All existing underground utilities shall be surveyed and illustrated on the plans.

2. Calculating the Base Height of an Existing Pole

The base height, from which the calculation of the "increase in pole height" is referenced for determining the overall pole height, shall be calculated as follows:

- a) City Streetlight Pole or Electric Company Streetlight Pole

- 1) A streetlight with a separate luminaire mast arm mounted to the vertical pole shall use the top of the vertical pole to the adjacent ground surface as the base height.
 - 2) A streetlight, with the luminaire mast arm integrated (e.g. telescopic style pole) into the top vertical section of the pole, shall use the point on the pole where the mast arm is connected plus twenty-four (24) inches to the adjacent ground surface as the base height.
- b) City Traffic Signal Pole. A traffic signal pole with or without a luminaire mast arm that is mounted above the signal head mast arm to the pole shall use the top of the vertical portion of the pole to the adjacent ground surface as the base height.
 - c) Utility Pole. The top of the vertical portion of the pole to the adjacent ground surface is the base height.

3. *New or Replacement Pole Clearance – Original Pole*

The minimum distance of the new or replacement pole from the nearest or original pole location shall be between twenty-four inches (24”), and sixty inches (60”) so that construction can occur safely and applicable primary purpose is maintained. The distance is measured from center of the poles. The City may change this minimum or maximum distance on a case-by-case basis. The original pole, as applicable, shall be illustrated on the plans.

4. *New or Replacement Pole Clearances – Curbs and Sidewalks*

The new or replacement pole shall maintain a twenty-four inch (24”) minimum clearance distance from back of curb and twelve inch (12”) minimum clearance from sidewalks. The distance is measured between the nearest face of pole and curb or sidewalk. In the absence of curb, the new or replacement pole shall maintain the greater of a forty-eight inch (48”) minimum clearance from the edge of pavement and minimum clear zone requirements described by AASHTO for roadside hazards. The City, in its sole discretion, may increase or decrease that minimum clearance on a case-by-case basis to ensure the safe use of the roadway, sidewalk and adjacent area. Replacement poles may be allowed a lesser clearance to sidewalks dependent upon the location of the original pole. New and replacement pole locations shall consider these minimum clearances and clearances required for pole attachments in combination. All existing curb, roadways, sidewalks, and other physical elements within the ROW shall be surveyed and illustrated on the plans. Any applicable American Association of State Highway and Transportation Officials (“AASHTO”) clear zone for non-curbed roadways shall also be illustrated on the plans.

5. *New, Modified or Replacement Poles Clearance – Hydrants and Driveways*

A new, modified or replacement pole must be at least twenty feet (20') from existing fire hydrants and existing driveways. All existing fire hydrants and driveways shall be surveyed and illustrated on the plans.

6. *Sight Distance Easements (SDE) and Sight Visibility Triangles (SVT)*

All new and replacement poles shall be installed in a location that does not impair or interfere with SDE or SVT safety requirements. All SVT and SDE in compliance with the City Access Management Code shall be illustrated on the plans.

7. *Cables, Wires, Jumpers, Conduits and Fuses*

- a) All cables for the wireless equipment and antennas – except where such cables or wires attach to the ports in the antenna – shall be located inside a conduit, inside both the caisson and the pole, except where permitted to attach upon the pole externally. There shall not be any “dog house” or externally visible conduit or entry point of the cables unless specified by the City.
- b) All conduit, electrical wires and fuses for the streetlight and luminaire, and any other City device on the pole shall be new and properly connected or attached without splicing except as permitted in accordance with City standards and specifications.
- c) All conduits, wiring, cabling, equipment, fuses and other materials used shall be identified and illustrated on the plans.

8. *Hand-holes*

- a) All hand-hole locations shall be called out on the plans with dimensions shown. The size and location of all hand-holes is subject to review and approval by the City Engineer and must be accounted for in the pole structural calculation documents and engineering drawings.
- b) All hand-holes near antennas shall have the top of the hand-hole no lower than the bottom height of the antennas.
- c) The bottom of the hand-hole should not exceed six (6) inches below the bottom of the antenna.

9. *Wireless Facility Identification Information*

- a) A Radio Frequency Safety notice, not larger than four (4) inch by six (6) inch may be mounted on the pole, no less than twenty-four (24) inches from the bottom of the antenna, facing away from traffic.

- b) The Wireless Provider may place a discreet site identification or number on the pole, but such shall not be similar to any streetlight or traffic signal identification system. The size, color and location of this identifier shall be determined by the City.
- c) No Wireless Provider signs may be placed on a City Utility Pole, Utility Pole, Wireless Support Structure, whether an existing, modified, replacement or new pole or structure except to the extent required by local, state or federal law or regulations.

10. *Interference with City Wireless Network*

- a) The City has certain wireless devices in a network that connect traffic signals, community centers, municipal water and wastewater sites, and other locations for the City's use. The selection of a location for a wireless site shall consider the potential interference of the City's wireless network with RF from a wireless provider's proposed site.
- b) The City, at its sole discretion, after researching the proposed site, radio frequencies, line of sight to other wireless locations in the City's network, and other technical factors may deny a wireless provider to install a site in the ROW it believes to be in conflict.

11. *Cable Chase and Dog Houses*

The City, in its sole discretion, shall determine if an exterior cable chase and dog house are aesthetically compatible with the pole and immediate area. The materials and paint color of the cable chase and dog house shall be determined on a case-by-case basis.

12. *Covers Required for all Port Holes, Hand Holes and Other Openings on Pole*

All openings or ports on the pole used for cables, hand holes, or other purposes must be sealed with a removable metal cover, a rubber or plastic boot, or sealant material that is approved by the City to prevent access into the pole by insects, birds or other animals.

13. *Breakaway Features for Public Safety*

All poles within the ROW or within the Clear Zone as such area is defined by AASHTO that may exist beyond the ROW shall have a breakaway foundation/base conforming to Breakaway Criteria of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and per City standards and specifications.

14. *Pole Attachment Clearances – Curbs and Sidewalks*

The attachments to a new or replacement pole, regardless of ownership, shall not overhang the curb, roadway or sidewalk in conflict with vertical clearance requirements associated with AASHTO and ADA. Any attachment or mast arm shall be located at least seven feet (7') above any adjacent sidewalk and at least sixteen feet (16') above any

curb or roadway in the absence of curb. The distance is measured between the nearest face of attached appurtenance or material or mast arm and top of curb, sidewalk or pavement, as applicable.

15. *Pole Stealth and Concealment*

As part of the stealth and concealment elements, the City may install or require the Wireless Provider to install signs and other decorative or artistic elements, but no advertising will be allowed.

7000.7. F. Removal of Original Pole, Equipment and Pole Foundation

1. *Removal of Original Pole, Mast Arm, Luminaire and Attachments*

- a) The City shall determine what original components, (e.g., original pole, mast arm, luminaire, signal detection equipment, signal heads, pedestrian push buttons, fuses, grounding, signs, etc.) shall be delivered at no cost to the City, to the City's Public Works Operations Facility by the Wireless Provider.
- b) If the City accepts some of the original components, then only those components shall be delivered by the Wireless Provider to the City's Public Works Operations Facility. The Wireless Provider shall provide at least five (5) business days advance notice to City prior to delivery.

2. *Removal of Original Pole Foundation*

The pole foundation (or base) for the original pole shall be removed by the Wireless Provider as instructed by the City:

- a) Complete Removal. All materials (concrete, rebar, metals, bolts, etc.) shall be removed and backfilled. Backfill material and compaction shall comply with the City's Design and Construction Manual.
- b) Match Existing Landscape or Sidewalk. Upon removal of the pole and pole foundation, the top surface shall be restored to match the existing condition of the area immediately adjacent to the foundation that was removed. In a landscaped area, the top shall be covered with landscape material, including rocks, plants and other covering. If the foundation was in a sidewalk, the top six to twelve inches (6-12") of the surface shall be restored with the proper materials (concrete, brick, decorative stone, etc.), finish, subgrade, and any other design specifications to match the immediately adjacent area and comply with all standards and specifications in the Design and Construction Manual.

7000.7. G. Antennas, RRH/RRU, Cables and Mounting on Pole:

1. *General Requirement:* All antennas shall be installed in a manner that minimizes the visual impact to the general public. All work shall be performed in a professional manner that is consistent with the highest standards of workmanship.
2. *Specific Criteria:*
 - a) *Antenna Mounting Posts and Brackets*
 - 1) All panel antennas shall be mounted directly to the pole or onto a mounting pole so that the distance from the “face” of the pole to the back of the antenna does not exceed nine inches (9”).
 - 2) All mounting posts shall be trimmed so that the poles do not extend higher than the top of the antenna or protrude lower than the antenna unless necessary to install the shroud. The mounting post must not protrude below the bottom of the shroud.
 - 3) All pole attached wireless equipment and other associate attachments must be at least ten feet (10’) above the sidewalk elevation and not interfere with any City sign attachments that shall also comply with minimum vertical and horizontal clearances.
 - b) *Panel Antennas*
 - 1) All panel antennas for a small cell site shall fit within an imaginary enclosure of not more than six (6) cubic feet in volume. (NOTE: This volume does not include antenna cable shrouds when required.)
 - 2) All panel antennas with exposed cables from the bottom of the antenna shall have a shroud installed on the antenna or antenna mounting posts to conceal the cables.
 - a. The type of shroud may be a forty-five (45) degree angle (away from the bottom of the antenna; toward the pole) or a ninety (90) degree angle (parallel to the bottom of the antenna) depending on the location of the site.
 - b. The shroud shall extend from the bottom of the antenna to two (2) inches below the bottom of the nearest hand-hole.
 - c. The open side of the shroud shall not extend more than one (1) inch from the “back” of the antenna towards the “face” of the pole.
 - c) *Canister Antennas*
 - 1) All canister antennas shall fit within an imaginary enclosure of not more than six (6) cubic feet in volume. (Note: This volume does not include the canister as it is a stealth device and not the antenna.)
 - 2) The canister shall be no larger than eighteen inches (18”) in diameter (OD).
 - 3) All canister antennas shall be in a canister that is mounted to a base plate at the top of the vertical section of the pole.
 - 4) All cables protruding from the canister shall be concealed within the canister or by a shroud at the point where the canister is mounted to the base plate.

- d) Remote Radio Heads (RRH) / Remote Radio Units (RRU). Under RSMo § 67.5111(19)(a), the RRH/RRU is not considered part of the antenna. If allowed, the RRH/RRU shall be calculated as part of “All other wireless equipment associated with this facility...” in RSMo § 67.5111(19)(b) that is subject to the twenty-eight (28) cubic feet maximum size for small cell sites.
- 1) On a case-by-case basis, the City in its sole discretion and upon reviewing the landscape in the immediate surrounding area, the location of the pole, and stealth options, may allow a site to have an RRH/RRU installed on the pole.
 - 2) A Wireless Provider may install a SWF on a pole or wireless support structure that has RRH or RRU devices integrated inside a canister or concealed within a panel antenna so that the RRH or RRU is not visible from ground level.

7000.7. H. Ground-mounted Equipment:

1. *General requirement:* All equipment with exception of permitted antenna, RRH/RRU, cables and conduit, and associated mounting brackets shall be ground-mounted and all ground mounted equipment shall be installed in a manner that minimizes the visual and the ingress/egress impact to the general public. Ground mounted equipment may be vaulted underground. Any undergrounded equipment shall be approved by the City Engineer and detailed on the plans. All work shall be performed in a professional manner that is consistent with the highest standards of workmanship. All ground-mounted equipment shall be shown on the plans. This section does not apply to Pull Boxes, Junction Boxes and other ground-based or underground equipment specifically addressed in other sections.
2. *Specific criteria:*
 - a) Sight Distance Easements (SDE) and Sight Visibility Triangles (SVT). All ground-based wireless equipment shall be installed in a location that does not impair or interfere with SDE or SVT safety requirements. To ensure proper sight distance, all City Standards and laws, codes, and regulations shall apply. All SVT and SDE shall be illustrated on the plans.
 - b) Ground Equipment Location – Generally. All ground-based wireless equipment, including but not limited to equipment cabinets or power pedestals, shall be placed as far as practical to the back of the ROW or within an applicable easement beyond the ROW while maintaining at least three feet (3’) of ingress/egress in the ROW or easement around the equipment. The plans shall depict the location and dimensions of all ground-based equipment whether ground mounted, vaulted or undergrounded.
 - c) Ground Equipment Clearances—Underground Utilities
 - 1) All ground-mounted electrical equipment shall maintain minimum horizontal clearance from below-ground utilities:
 - Clearance from water main pipes and lines shall be at least six (6) feet.

- Clearance from customer water service lines shall be at least three (3) feet.
 - Clearance from sewer main pipes and lines shall be at least six (6) feet.
 - Clearance from customer sewer service lines shall be at least three (3) feet.
 - Clearance from telecommunications shall be at least two (2) feet.
 - Clearance from cable television lines shall be at least two (2) feet.
 - Clearance from natural gas lines shall be at least two (2) feet.
 - Clearance from all other underground infrastructure shall be at least six (6) feet.
- 2) The City, in its sole discretion, may grant a variance, upon approval by the Director of Water Utilities Department, from these water and sewer horizontal separation distances, and, upon approval by the City Engineer, from all other City-owned or City-maintained underground infrastructure horizontal separation distances on a case-by-case basis. The approval of a variance is dependent on factors specific to the site.
 - 3) In the case where there is an issue with horizontal separation from other privately-owned underground utilities, the Wireless Provider may elect to work with the impacted utility to have its lines, pipes or property moved or relocated so that minimum clearance is achieved or provide written documentation of owner's approved variance. All relocation work of City-owned or a privately-owned utility shall be at the sole expense of the Wireless Provider.
 - 4) All existing underground utilities shall be illustrated on the plans.
- d) Ground Equipment Clearance – Sidewalks, Curbs and Streets. The ground equipment shall maintain at least an eighteen inch (18") clearance distance from sidewalks. The City, in its sole discretion, may increase or decrease the minimum clearance on a case-by-case basis to ensure the safe use of the sidewalk and adjacent area. No ground-based equipment protruding above ground shall be located within the Clear Zone adjacent to a roadway as described in AASHTO and shall be located at least ten (10) feet from the nearest curb or roadway.
 - e) Ground Equipment Clearance – Doorways of Businesses and Residences. Any new ground-mounted equipment must maintain at least a twenty-five foot (25') distance from the primary doorway of a business or residence measured from the outer door frame and at least a ten foot (10') distance from the primary entrance of a business or residence measured at the edge of ROW.
 - f) Ground Equipment Clearance – Hydrants and Driveways. Any ground-mounted equipment must maintain at least a twenty foot (20') distance from existing fire hydrants and existing driveways.
 - g) Screening of Ground Equipment. The City, in its sole discretion, may require the ground-mounted equipment to be screened or concealed to reduce the visual impact to the surrounding area; the type of screening or concealment materials and design will be addressed on a case-by-case basis and shall take into account the location of the

site, the use of the immediate area, and the existing aesthetic elements surrounding the site. Screening and concealment materials and methods should be consistent with similar requirements in the Unified Development Ordinance.

- 1) In cases when screening and concealment is not required, the City may specify the paint color of the ground-mounted equipment.
 - 2) The City may require vaulted equipment underground due to high pedestrian traffic and stealth/concealment requirements, unless prohibited by valid, constitutional law. A waiver will be considered if it is shown to be technologically infeasible.
- h) Screening of Ground Equipment Clearance – Hydrants and Driveways. Any screening for ground-mounted equipment must maintain at least a twenty foot (20') distance from existing fire hydrants and existing driveways.
- i) Decals and Labels
- 1) All equipment manufacturers' decals, logos and other identification information shall be removed unless required for warranty purposes.
 - 2) Identification signage shall be mounted on ground equipment providing the operator name, emergency contact phone number and informational contact phone number.
 - 3) The ground-mounted equipment shall not have any flashing lights, sirens or regular noise other than a cooling fan that may run intermittently.
- j) Equipment Cabinets on Residential Property
- 1) Residential Single-Family Lot. The Wireless Equipment and Ancillary Equipment listed in RSMo. § 67.5111(19)(b), as amended, shall not exceed thirty-six (36) inches in height in the front yard of a residential single-family zoned property. Applicants should avoid placement in residential lots where at all possible.
 - 2) Air-conditioning Units. Unless otherwise specified by City, a wireless equipment cabinet with air-conditioning (not a fan only) shall be enclosed by walls and setback a minimum of fifteen (15) feet from lots where the existing or planned primary use is a residential single-family dwelling.

7000.7. I. Electrical Meter, Pull Box, Junction Box, Cables, Wires, Conduit, Grounding, Bus Bars, and Power Deactivation Switch

1. *Electric Company Meter*

- a) All electrical wiring, cabinets, pedestals and related work must be in conformance with the most recent version of the National Electric Code adopted by the City at the time of the installation of the equipment.

- b) All electric company meters shall be installed in the ROW or applicable utility easement. The location of the meter equipment shall have minimum ingress and egress clearance from private property lines and driveways.
- c) All electric company meters shall maintain minimum clearance from above-ground utility cabinets and below-ground utilities.
- d) All electric company meters shall be installed in a location that does not impair or interfere with the SDE or SVT safety requirements of the City.
- e) The electric company meters shall be screened or contained within a “Myers-type” or “Milbank-type” pedestal cabinet that is painted to match the ground equipment or as specified by the City.
- f) In the case where screening is not required, the City may specify the paint color of the electric company meter cabinet on a case-by-case basis.

2. *New Electric Company Meter Clearance – Hydrants and Driveways*

Any new electrical service meter must maintain a minimum twenty (20) foot distance from existing fire hydrants and existing driveways.

3. *Pull Box or Junction Box*

- a) If the existing City Utility Pole had a pull box or junction box for electrical wiring or cabling and the box must be moved to a new location, the Wireless Provider will install a new replacement box, to be owned by City, and remove the original box when the transfer of electrical wiring or cabling is completed.
- b) If the existing City Streetlight Pole or City traffic signal pole did not have a pull box or junction box (e.g., aerial fed electrical or direct fed electrical), the Wireless Provider will install a new box, to be owned by City, near the replacement pole. The box location is subject to approval by the City.
- c) If a new or replacement Electric Company Streetlight Pole, Utility Pole or Wireless Support Structure is installed, the Wireless Provider will install a new box near the new or replacement pole or structure.
- d) If conduit(s) and/or cable(s) cross beneath a City roadway and to provide service to a SWF on a City Utility Pole, a pull box or junction box shall be installed on both sides of the roadway crossing.
- e) All new boxes shall be a pull box or junction box sized to meet the minimum requirements specified in the City standards and specifications for street light pull or junction boxes, which depend on the number and size of entering/exiting conduits.

- f) All junction box and pull box installations shall conform to City standards and specifications. No box shall be located within a sidewalk or ramp or pavement and any box located adjacent to a sidewalk or ramp shall have its top elevation level with the surface of adjacent sidewalk or ramp.
- g) All pull boxes and junction boxes shall be identified, dimensioned, located and shown on the plans.
- h) All pull boxes and junction boxes shall be labeled on its cover to identify owner and type of system (e.g. street lighting, signals, fiber optics, etc.) in accordance with the City's Design and Construction Manual.

4. *Grounding*

All electrical grounding for the pole, wireless support structure, luminaire, SWF, ground equipment and any other attachment shall be in accordance with the NEC and specific grounding requirements of the City and of the electric company.

5. *Bus Bars*

All bus bars must be installed within the pole or at a location so that the bus bar is not visible from the street in accordance with applicable standards and specifications.

6. *Alternating Current (AC) and Back-up Power Supply "Deactivation" Switch*

If, pursuant to the City of Lee's Summit's Standard Terms and Conditions for the Placement of Wireless Facilities in the Right-Of-Way, Wireless Provider elects to equip its poles or wireless support structures in the ROW with a deactivation switch that is accessible to City staff for both primary and back-up power, the following apply:

- a) The deactivation switch shall also be installed on a SWF that is within twenty-five 25 feet of a non-SWF City Utility Pole or other City structure that requires routine maintenance and repair.
- b) The deactivation switch shall have a visual power on and power off indicator or completely de-energize the site at the electrical panel if there is no back-up power supply.
- c) The deactivation switch may be mounted on the wireless support structure within three (3) feet of the existing grade, mounted on the ground equipment cabinet, mounted on the power meter, or mounted on the power meter pedestal.
- d) If the deactivation switch has a lock, the Wireless Provider must provide the City with the combination (for combination locks) or fifty (50) keys (if keyed).

- e) If the deactivation switch is the main breaker in the electric meter fuse panel, the Wireless Provider must provide the City with the combination (for combination locks) or fifty (50) keys (if keyed).

7. *Cables, Wires, and Conduits*

- a) All cables and wires between equipment, junction boxes, pull boxes and pole or wireless support structure shall be located inside a conduit and underground except as may be permitted for aerial power supply on an existing utility pole.
- b) City will not share its fibers, wires, cables or conduits for any SWF.
- c) Cables or wires for SWF shall not share or be collocated within City conduits.
- d) No open road cuts will be permitted. All roadway crossings shall be horizontal drilled or bored.
- e) All conduits, electrical wires, cables and other materials used shall be identified and illustrated on the plans.
- f) All SWF conduits shall be materially identified and distinctly different than City conduits by color or markings. Conduit markers with proper identification shall be installed in the top of curb where SWF conduits are bored under roadways in accordance with required conduit markers for street light and signal conduits in the Design and Construction Manual.
- g) All SWF cables and wires shall be identified and tagged in accordance with similar cable and wire identification and tagging specifications associated with signal and lighting in the Design and Construction Manual.

7000.8 Other SWF Construction Drawings and Application Requirements

This section governs the preparation of construction drawings, plans, documents and reports for SWF deployments. This section also describes the minimum information required for a SWF application.

7000.8. A. Application Requirements:

- 3. *General Requirements:* The application shall include all information necessary to assess and document compliance with applicable design criteria, terms and conditions, and other requirements permitted by law for a proposed SWF. The application shall include contact information for the applicant and wireless provider bound to the terms and conditions of any such ROW Use Approval (RUSA).
- 4. *Specific Requirements:* The following information shall be included, at a minimum, in an application for SWF:

- a) Applicant and Wireless Provider Information
 - a. Identify the Wireless Provider and Contact Information
 - b. Name, Address, Email, Phone Number of Applicant
- b) Site Information
 - a. SWF Site Name and Number
 - b. CMRS Carrier Customer and CMRS Carrier Radio Frequency
 - c. Type of Application (Pole, Wireless Support Structure, Etc.)
 - d. Type of Installation (Existing/Modification, Replacement, New)
 - e. Location of Pole (or WSS) with SWF Collocation
 - f. Pole (or WSS) Owner
 - g. Reference Pole (or WSS) Height
 - h. Proposed Pole (or WSS) Height
 - i. Cubic Feet of Ground Equipment (Each Piece and Total)
 - j. Cubic Feet of Antenna Attachment
 - k. Pole (or WSS) ID
 - l. Zoning at Pole (or WSS)
 - m. Approach for Power Down (Switch or On-Call/Emergency Contact)
- c) Documentation of Ownership and Authorizations
 - a. Letter of Authorization from Pole or WSS Owner (if not City)
 - b. Deed or Dedication of ROW or Easement Documentation
 - c. Undergrounding Waiver for any New Poles or WSS (if applicable)
 - d. FAA Approval for Airspace Encroachment (if applicable)
- d) Construction Information
 - a. Construction Drawings/Plans (see Section 7000.8.B)
 - b. Structural and Engineering Calculations and Reports
 - i. Pole
 - ii. Foundation
 - iii. Geotechnical
 - iv. Photo-Sim (if applicable)
- e) Preliminary Site Plan (Optional)

7000.8. B. Construction Drawing Requirements:

- 5. *General requirement:* The plans shall include all information necessary to build and check the design and construction of SWF attachments, pole (or WSS), ground equipment, conduit, cabling/wiring and related appurtenances. The plans shall be arranged as required by the City Engineer. Applicable standard plans shall be included by reference to standard plan number and title. Plans shall be sealed by a Registered Professional Engineer in the state of Missouri.
- 6. *Scale:* Plans shall be drawn at the following minimum scales. Larger scales may be needed to clearly present the design. Bar scales and orientation (i.e. north arrow) shall be shown on each sheet for each scale.
 - a) Plan/Horizontal Drawings: 1 inch = 20 feet (preferred), 1 inch = 50 feet (minimum)
 - b) Elevations/Vertical Drawings: 1 inch = 5 feet (preferred), 1 inch = 10 feet (minimum)
 - c) Structural Drawings: 1 inch = 1 foot

- d) Graphic Drawings: Standard Engineering (scale varies)
7. *Sheet Size*: Full-sized plan sheets shall be 22 inches by 34 inches. Half-sized plan sheets shall be 11 inches by 17 inches. Plan and profile or vertical elevations shall be drawn on combined or separate sheets to minimum scales noted above.
 8. *Sheets*: The plans or construction drawings shall generally consist of the following sheets and information:
 - a) Title Sheet
 - a. Project ID and Site Information
 - b. Index of Sheets
 - c. Location Map
 - d. Signature Blocks
 - e. Project Control Benchmarks shall be identified as to location and elevation per NGVD datum. A minimum of two (2) benchmarks required.
 - f. Name and contact information for engineer (or engineering company) and owner
 - g. Listing of utilities and contact information.
 - h. Missouri One-Call information.
 - i. Legend of symbols that apply to plan sheets.
 - j. Engineer's seal, signed and dated
 - b) General Notes
 - c) Site Survey (include ROW references)
 - a. Docket Number of the ROW and Easement (if applicable) Record
 - b. Identify property, easement and utility ownership. Street names, property lines, rights-of-way and easements shall be shown.
 - c. Location of proposed pole (or WSS) and ground equipment
 - d. Location of Site Survey Control Points, Benchmark, and Alignment References (if applicable)
 - d) Site Plan
 - a. Coordinates, dimensions and/or stations and offsets provided for each pole (or WSS) and each piece of ground equipment
 - b. Location, description, dimensions, and size of all proposed pole (or WSS), equipment, cabinets, boxes, conduits, power supply pedestal, power supply location/power drop, meter, power shut-off switch, etc.
 - c. Location, description and dimensions of existing poles, structures, utilities (above ground and underground), conduits, curb, sidewalk, roadway, driveways, vegetation/trees/landscape, monuments, buildings, walls, property lines, ROW, easements, storm water pipes, boxes, manholes, drainage channels or ways, topography, and any other physical element or condition within 250 feet of any proposed work.
 - d. Sight distance triangles for Intersection Sight Distance and Stopping Sight Distance shown at all nearest intersections, driveways, and crosswalks potentially impacted by proposed work.
 - e. Roadside Clear Zone shown along all non-curbed roadways adjacent to proposed work.
 - f. Location of Power Switch (if applicable)

- g. Location of Reference Pole (or WSS)
- e) Enlarged Site Plan (if applicable)
- f) Elevations (minimum of two views)
 - a. Height and diameter of existing pole, reference pole and proposed pole (or WSS)
 - b. Height and cubic area of the ground equipment
 - c. Antennas, including cubic area, and any applicable shroud/concealment and stealth elements, mounting, mast arm(s), bracket arm(s) and other attachments on the pole or WSS.
 - d. Landscape in immediate surrounding area
- g) Wiring/Cable and Conduit Plans
 - a. Electrical and Communication Wire/Cable Routing, Location, Size, Connections, Attachments
 - b. Conduit Routing, Location, Size, Attachments, Transitions
 - c. Grounding
- h) Photo-Sim of Site (if requested)
- i) Detail Sheets
 - a. Antennas
 - b. Shrouds, Concealment Elements/Materials, and Stealth
 - c. Mounting brackets, attachments and posts
 - d. Foundation
 - e. Pole
 - f. Ground Mounted Cabinets and Equipment
 - g. Conduit for cables, wires and electricity
 - h. Junction Boxes/Pull Boxes
 - i. Electrical meter and pedestal
 - j. Disconnect or Shut-down/off or Power Switch
 - k. Labels and Signing
 - l. Lighting Fixtures and Photo-cell/Sensors
 - m. Mast Arms/Bracket Arms
- j) Structural and Engineering Documents
 - n. Pole design and load calculations
 - o. Foundation design and load calculations
 - p. Geotechnical report for foundation
- k) Temporary Traffic Control Plan
- l) Landscape, Concealment, Stealth and/or Screening Plan

Each sheet shall contain a sheet number, including the individual sheet number and the total number of sheets, proper project identification and date. The engineer's seal shall appear on each sheet per state licensing requirements.