

THE TOWNSHIP OF COLLEGE



**SMALL WIRELESS COMMUNICATIONS FACILITY
DESIGN MANUAL**

SECTION I. DEFINITIONS

The following terms are defined as follows:

1. *Antenna* – An apparatus designed for the purpose of emitting radiofrequency (RF) radiation, to be operated or operating from a fixed location pursuant to Federal Communications Commission authorization, for the provision of wireless service and any commingled information services.
2. *Collocation* – The mounting of one or more Wireless Communications Facilities, including antennae, on a pre-existing structure, or modifying a structure for the purpose of mounting or installing a Wireless Communications Facility on that structure.
3. *Decorative Pole* – A Township-owned pole that is specially designed and placed for aesthetic purpose and on which no appurtenances or attachments, other than a Small Wireless Communications Facility, lighting, banners, or municipal attachments have been placed or are permitted to be placed.
4. *Historic District* – A historic zoning district as established by the Code of the Township of College.
5. *Prior Approved Design* – A design for a small Wireless Communications Facility that has been reviewed and deemed to be in accordance with this Design Manual and approved for construction by the Township.
6. *Related Equipment* – Any equipment serving or being used in conjunction with a Wireless Communications Facility or Wireless Support Structure, including but not limited to transmission equipment, power supplies, generators, batteries, cables, equipment buildings, cabinets and storage sheds, shelters or similar structures.
1. *Small Wireless Communications Facility* -- a wireless communications facility that meets the following criteria:
 - (1) the wireless support structure on which antenna facilities are mounted—
 - (i) is 50 feet or less in height, or
 - (ii) is no more than 10 percent taller than other adjacent structures, or
 - (iii) is not extended to a height of more than 50 feet or by more than 10 percent above its height prior to the collocation of any WCF as a result of the collocation of new antenna facilities; and

(2) each antenna associated with the deployment (excluding the related equipment) is no more than three cubic feet in volume; and

(3) all related equipment associated with the wireless support structure including the wireless equipment associated with the antenna and any pre-existing associated equipment on the wireless support structure, is cumulatively no more than 28 cubic feet in volume.

(4) the wireless communications facility does not require antenna structure registration under 47 CFR part 17;

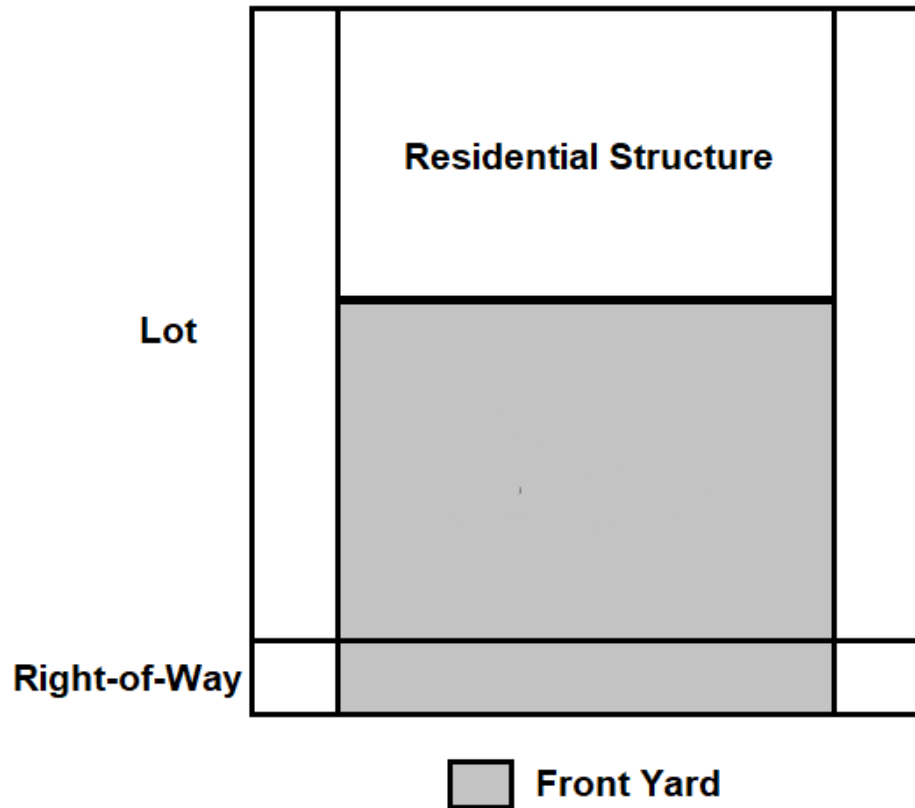
(5) the wireless communications facility is not located on tribal lands, as defined under 36 CFR 800.16(x); and

(6) the wireless communications facility does not result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in 47 CFR 1.1307(b).

7. *Stealth Design* — Camouflaging methods applied to Wireless Communications Facilities and related equipment which render them more visually appealing or blend the proposed facility into the existing structure or visual backdrop in such a manner as to render it minimally visible to the casual observer. Such methods include, but are not limited to, architecturally screened roof-mounted Antennas, building-mounted Antennas painted to match the existing structure and Wireless Communications Facilities constructed to resemble trees, shrubs, and light poles.
8. *Technically Feasible* – By virtue of engineering or spectrum usage, the proposed placement for a small wireless facility or its design or site location can be implemented without a material reduction in the functionality of the Small Wireless Communications Facility.
9. *Underground Area* – A zoning district or designated area in which all utility installations are required to be installed underground on a non-discriminatory basis by a date certain that is three months prior to the submission of an application for a Small WCF.
10. *Wireless Communications Facility Applicant (WCF Applicant)* -- Any person that applies for a Wireless Communications Facility building permit, zoning approval and/or permission to use the public ROW or other Township-owned or third party land or property.
11. *Wireless Support Structure*—a pole, tower, base station, or other building, whether or not it has an existing Antenna facility, that is used or to be used for the provision of wireless service (whether on its own or comingled with other types of services).

12. *Yard* -- An unoccupied space, open to the sky, extending from the lot line to a structure, [and including the public rights-of-way](#). The size of a required yard shall be measured as the shortest distance between the structure and lot line.

A. *Front Yard* -- The yard extending the full length of the front lot line.



SECTION II. GENERAL STANDARDS FOR SMALL WIRELESS COMMUNICATIONS FACILITIES

1. All Small WCFs shall comply with the applicable requirements of this *Small WCF Design Manual* and Section 200-39.1 of the College Township Zoning Ordinance.
2. All Small WCFs shall be installed in and maintained in a workmanlike manner in compliance with the National Electric Safety Code, the National Electrical Code, the structural standards of the American Association of State Highway and Transportation Officials, and any other industry standard applicable to the WCF, as applicable.
3. All Small WCFs shall comply with the Americans with Disabilities Act guidelines adopted by the Township and all applicable requirements relating to streets and sidewalks as established by Chapter 177 of the Township Code.

4. All Small WCFs shall comply with applicable federal and state standards regarding pedestrian access and movement.
5. All Small WCFs shall utilize Stealth Design in an effort to minimize aesthetic impact to the extent Technically Feasible. All applications for a Small WCF shall identify all design features intended to minimize aesthetic impact.
6. No guy wires shall be permitted as part of a Small WCF. All Small WCFs shall be self-supporting.
7. If a Small WCF or any portion thereof is to be located on private property, the WCF Applicant shall provide to the Township evidence that the owner of such private property has granted the WCF Applicant an easement or other right to construct the Small WCF.
8. All Small WCFs shall be designed to withstand the effects of wind gusts and ice to the standard designed by the American National Standards Institute as prepared by the engineering departments of the Electronics Industry Association and Communications Industry Association (ANSI/TIA-222, as amended), or to the industry standard applicable to the structure.
9. If Collocation of a Small WCF on an existing Wireless Support Structure cannot be achieved, a Small WCF may be installed on a new or replacement Wireless Support Structure.
10. The Township Zoning Officer may, in their sole discretion, require reasonable, technically feasible, nondiscriminatory and technologically neutral design or concealment measures for Small WCFs proposed for location in any Historic District.

SECTION III. ANTENNA AND RELATED EQUIPMENT STANDARDS

1. Antenna Standards

- a. Any Antenna associated with a Small WCF shall not exceed three (3) cubic feet in volume.
- b. The Collocation of a Small WCF on an existing Wireless Support Structure shall not extend more than five (5) feet above the existing Wireless Support Structure.

- c. All pole-top Antennas shall be flush-mounted as closely to the top of the Wireless Support Structure as Technically Feasible. Any pole-top extension shall maintain the same diameter of the Wireless Support Structure being extended.
- d. All Antennas and extensions shall be of a design, style, and color that matches the Wireless Support Structure upon which they are attached, unless the Township Zoning Officer finds that another design, style or color would be sufficient.
- e. Any necessary pole-top extension to accommodate a proposed Small WCF shall be of the minimum height necessary to achieve separation from the existing pole attachments in accordance with the National Electric Safety Code and any other industry standard applicable to the WCF or Wireless Support Structure.
- f. Any Antenna mounted on a lateral standoff bracket shall protrude no more than necessary to meet clearances from the pole and existing pole attachments in accordance with the National Electric Safety Code and any other industry standard applicable to the WCF or Wireless Support Structure.
- g. If mounted on an existing Wireless Support Structure, no Antenna shall impair the function of said structure.
- h. Antenna placement shall not materially impair light, air, or views from adjacent windows.
- i. Antennas shall be concealed by material sufficient to hide the Antenna(s) from view. The overall diameter of the Antennas and their concealment shall be no greater than 150% of the diameter of the Wireless Support Structure to which the WCF is mounted.

2. Related Equipment Standards

- a. All Related Equipment associated with a Wireless Support Structure shall not exceed twenty-eight (28) cubic feet in volume. Equipment utilized solely for mitigation of the aesthetic impact of the Small WCF or required for utility service shall not be included in the Related Equipment volume calculation.
- b. Ground-mounted Related Equipment shall be located underground. In the event a WCF Applicant can demonstrate, to the satisfaction of the Township Engineer, that ground-mounted Related Equipment cannot be undergrounded, then all such Related Equipment shall be screened, to the fullest extent possible, through the use of landscaping or other decorative features.

- c. Required electrical meter cabinets shall be screened to blend in with the surrounding area.
- d. Any underground vaults related to Small WCFs shall be reviewed and approved by the Township.
- e. Related Equipment shall be mounted flush to the side of a Wireless Support Structure, or as near flush to the side of a Wireless Support Structure as Technically Feasible.
- f. Pole-mounted Related Equipment shall be mounted so as to provide a minimum of eight (8) feet vertical clearance from ground level.
- g. Related Equipment shall be of a color that matches the Wireless Support Structure upon which such Related Equipment is mounted.
- h. All Related Equipment shall be contained within a single equipment shroud or cabinet. Such equipment shroud or cabinet shall be of the smallest dimensions Technically Feasible.
- i. All Small WCFs shall post a sign in a readily visible location identifying the name and phone number of a party to contact in the event of an emergency. The only other signage permitted shall be that required by the FCC or any other federal or state agency. All signage associated with a Small WCF shall be clearly shown in the application and shall be subject to approval by the Township Zoning Officer.
- j. The placement of Related Equipment shall not materially impair light, air, or views from adjacent windows.
- k. No Related Equipment shall feature any visible lighting, including flashing indicator lights, unless required by state or federal law.

3. Wiring Standards

- a. Exposed wiring is prohibited on any Small WCF, Related Equipment, or Related Equipment enclosure.
- b. Transmission, fiber, power cables and any other wiring shall be contained within any Wireless Support Structure for which such concealment is Technically

Feasible. If such wiring cannot be contained within the Wireless Support Structure, all wiring shall be contained within conduit or U-guard that is flush-mounted to the Wireless Support Structure.

- c. All wiring shall be installed tautly and without excessive slack or extra cable storage on the Wireless Support Structure.
- d. Any conduit or U-guard shall be of a color that matches the Wireless Support Structure to which the Small WCF is attached.
- e. Loops of extra wiring shall not be attached to any Wireless Support Structure.

SECTION IV. WIRELESS SUPPORT STRUCTURE STANDARDS

1. Replacement Wireless Support Structures

- a. The maximum height of any proposed replacement Wireless Support Structure shall be fifty (50) feet above ground level.
- b. Any replacement Wireless Support Structure shall be of comparable materials and design to the existing Wireless Support Structure being replaced except as otherwise required by the pole owner.
- c. Any replacement Wireless Support Structure shall be placed within a five (5) foot radius of the existing Wireless Support Structure being replaced.
- d. Any replacement Wireless Support Structure shall be designed to accommodate all uses that existed on the Wireless Support Structure being replaced. As part of an application for a Small WCF, the applicant shall provide documentation from a structural engineer licensed in the Commonwealth of Pennsylvania confirming that the replacement Wireless Support Structure, Small WCF, and prior existing uses shall be structurally sound.

2. New Wireless Support Structures

- a. The maximum height of any new Wireless Support Structure shall be fifty (50) feet above ground level.
- b. New Wireless Support Structures shall not be permitted in any Underground Area.

- c. Any new Wireless Support Structure shall be of comparable materials and design to adjacent Wireless Support Structures except as required by the pole owner.
- d. Any Small WCF requiring the installation of a new Wireless Support Structure shall be set back from any residential structure by a minimum distance of at least 100% of the height of the proposed Small WCF.
- e. New Wireless Support Structures shall be designed to match the design of existing light poles within a five hundred (500) foot radius.
- f. To the extent Technically Feasible, no new Wireless Support Structure shall be installed:
 - i. In the Front Yard of any residential structure;
 - ii. Within ten (10) feet of the edge of any driveway; or
 - iii. In the public rights-of-way directly opposite any driveway.

3. Decorative Poles.

- a. No Small WCF shall be permitted on an existing Decorative Pole unless the WCF Applicant provides documentation showing that such Decorative Pole is the only Technically Feasible location for placement and that no suitable alternative sites exist.
- b. Decorative Poles shall be required:
 - i. For the replacement of any existing Decorative Pole; and
 - ii. In any residential zoning district.
- c. For any replacement Decorative Pole, the new Decorative Pole shall match the existing Decorative Pole in shape, design, color, and material to the extent Technically Feasible. The Township shall have final approval of any such replacement Decorative Pole.
- d. No Small WCF shall be permitted on an existing Decorative Pole unless the applicant provides documentation showing that such Decorative Pole is the only Technically Feasible location for placement and that no suitable alternative sites

exist. The WCF Applicant shall provide documentation from a structural engineer that said Decorative Pole can support the additional loads.

SECTION V. APPROVAL

1. The Township Zoning Officer shall reasonably determine whether a proposed Small WCF design complies with the requirements of this Design Manual.
2. Any requests for relief from the requirements of this Design Manual shall be considered on a case-by-case basis by the Township Zoning Officer and shall be approved upon a determination by the Township Zoning Officer that such relief is necessary to prevent the effective prohibition of wireless service pursuant to the rules of the Federal Communications Commission.
3. All requirements herein shall apply to any Small WCF constructed after the date on which the Township adopts this Design Manual. The requirements of this Design Manual shall not apply to any Small WCF constructed prior to the date of adoption, except that any modification, repair or replacement shall be performed in compliance with these requirements.

SECTION VI. PRIOR APPROVED DESIGNS

1. A record of Prior Approved Designs shall be kept on file at the Township Zoning Department.

Exhibit 1

Small WCF Dimensions Diagram

Small WCF Dimensions:

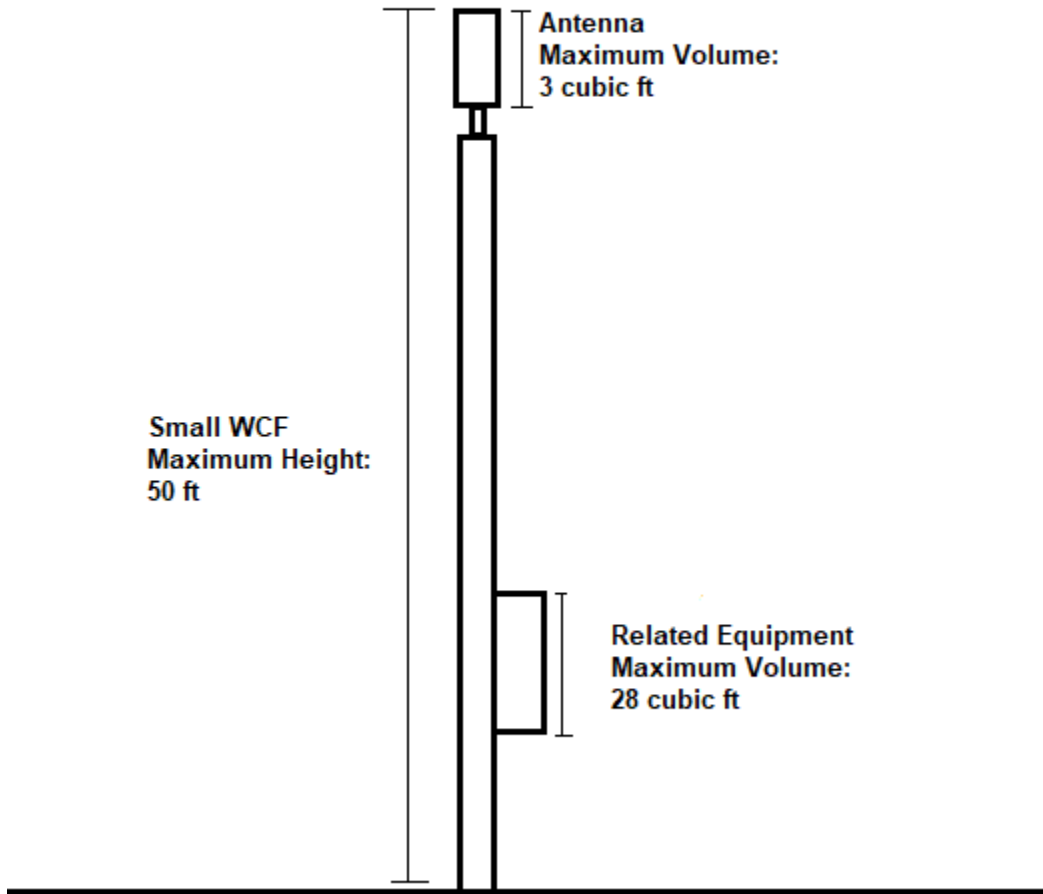


Exhibit 2

Example Decorative Pole Designs







Exhibit 3

Small Wireless Communications Facility Design Checklist

The information detailed in the following checklist shall be included with any application for a Small Wireless Communications Facility:

Item	Description	Included in Application?	
		Yes	No
Cover Letter	<ul style="list-style-type: none">• The application shall include a cover letter detailing the location of the proposed site, all equipment being proposed, and a certification that the WCF Applicant has included all information required by the Township Code and this Small WCF Design Manual. The cover letter shall include the name and contact information for the WCF Applicant and, if different, the owner of the proposed Small WCF.		
Site Plan	<ul style="list-style-type: none">• Site plan shall show all proposed equipment associated with the Small WCF.• The manufacturer and model, proposed location, and physical dimensions of each piece of equipment should be clearly shown.• Before and after diagrams of the proposed site showing the dimensional changes shall be included.• If the proposed Wireless Support Structure supports existing attachments, the site plan shall show the location and dimensions of all such attachments.• If installation of a new or replacement Wireless Support Structure is being proposed, the site plan shall include the color, dimensions, material and type of Wireless Support Structure proposed.• The site plan shall include an aerial photo showing the location of any existing structures within five hundred (500) feet of the proposed location, including but not limited to residential structures, commercial structures, light poles, traffic signals, traffic signage, and existing Wireless Support Structures.		

<p>Photo Simulations</p>	<ul style="list-style-type: none"> • Before-and-after photo simulations shall depict the Small WCF from at least three locations near the proposed site. • The photo simulations should reflect the proposed design and location of all Related Equipment associated with the Small WCF. 		
<p>Engineer Certifications</p>	<ul style="list-style-type: none"> • A written certification by a structural engineer licensed in the Commonwealth of Pennsylvania confirming that the proposed Small WCF and Wireless Support Structure are structurally sound and shall not endanger public health and safety. • A report by a qualified engineering expert which shows that the Small WCF will comply with applicable FCC regulations, including applicable standards for radiofrequency emissions. 		
<p>Paint</p>	<ul style="list-style-type: none"> • Related Equipment shall be painted a color that matches the Wireless Support Structure upon which such Related Equipment is mounted. • Application shall detail the proposed painting of any Related Equipment necessary to achieve aesthetic uniformity of the site. 		
<p>Wiring</p>	<ul style="list-style-type: none"> • All proposed wires associated with the Small WCF shall be clearly shown. • A depiction and description of the concealment methods to be utilized for the wiring shall be included. • No exposed wiring is permitted. 		
<p>Signage</p>	<ul style="list-style-type: none"> • Signage shall be posted in a readily visible location and identify the owner's permit number and the name and phone number of a party to contact in the event of an emergency. • If required, FCC-mandated signage is permitted. Applicant shall identify such signage in its application. 		
<p>Certificate of Insurance</p>	<ul style="list-style-type: none"> • A certificate of insurance as required by Section 200-39.1A(14). 		

Certification of Compliance	<ul style="list-style-type: none">• A signed statement affirming the proposed WCF and WCF application's compliance with the applicable requirements of Section 200-39.1A of the College Township Code and this <i>Small WCF Design Manual</i>.		
------------------------------------	--	--	--