

SECTION XIII. WIRELESS TELECOMMUNICATIONS BY-LAW:

1. Purpose:

The purpose of this by-law is: to provide for a special permitting process for the siting of Wireless Communications Facilities while minimizing potential damage and adverse visual impacts on adjacent properties, residential neighborhoods, vistas and areas of historic or high scenic value; to allow the provision of necessary wireless communications services in an orderly way; to reduce the need for new facilities; to minimize the height of facilities; and to require the use of stealth facilities. It is the explicit preference to have more Wireless Communications Facilities that have less visual impact than to have relatively few Wireless Communications Facilities with larger individual visual impact. (*Amended April 2, 2002*)

2. Definitions:

- DISTANCE: shall be measured on a horizontal plane.
- FAA: shall mean the Federal Aviation Administration.
- FCC: shall mean the Federal Communications Commission.
- HEIGHT: shall be the distance measured from the mean finished ground level at the base to the highest point on the structure.
- NON-RESIDENTIAL STRUCTURE: Buildings, grain silos, water towers and other similar structures, but not including houses, apartments or any building used for human habitation.
- STEALTH FACILITY: shall mean any newly constructed or installed building, building feature, or structure designed for the purpose of hiding or camouflaging Wireless Communications Devices, Facilities and Towers, including but not limited to church steeples, flag poles, historic-replica barns, silos, water towers, bell towers, etc.
- WIRELESS COMMUNICATIONS BUILDING: A building or structure used to house mechanical and electrical equipment as an accessory to a Wireless Communications Facility used by a commercial telecommunications carrier to provide telecommunications or data services.
- WIRELESS COMMUNICATIONS DEVICE: Any antenna, dish, appurtenance, wiring or equipment used by a commercial telecommunications carrier to provide telecommunications or data services. This term does not include Towers.
- WIRELESS COMMUNICATIONS FACILITY: Any and all materials, equipment (other than customer premises equipment) buildings, Towers, devices and structures including Stealth Facilities used by a commercial telecommunications carrier to provide telecommunications or data services.
- TOWER: Any equipment mounting structure used primarily to support transmission and reception equipment and Wireless Communications Devices and that measures twelve (12) feet or more in height and is used by a commercial telecommunications carrier to provide telecommunications or data services.

3. Exemptions:

The following shall be exempt from this by-law:

- (A) Amateur radio towers used solely by a federally licensed amateur radio operator.
- (B) Wireless communications structures and Devices used expressly and exclusively for television reception.

4. General Guidelines:

- (A) No Wireless Communications Facility shall be erected, constructed, or installed without a special permit from the Planning Board.
- (B) Wherever feasible, Wireless Communications Devices shall be located on existing Towers, on existing Non-Residential Structures or within Stealth Facilities, minimizing proliferation of new Towers.
- (C) A Special Permit for a Tower or Stealth Facility may be conditioned on the requirement that the structure be built so that it is able to accommodate devices operated by another carrier with little or no modification.
- (D) Wireless Communications Buildings shall be no larger than four hundred (400) square feet and ten (10) feet high, shall be designed to match other accessory buildings on the site, and shall be used only for the housing of equipment related to the particular site. (*Amended April 2, 2002*)

- (E) Stealth Facilities, Wireless Communication Devices, Facilities, Towers and Buildings may be allowed in any zoning district subject to a grant of a Special Permit by the Planning Board provided that they conform to the requirements set forth in this by-law. Wireless Communications Devices are allowed only on Non-Residential Structures. Stealth Facilities must be consistent with the character of the neighborhood. *(Amended April 2, 2002)*
- (F) All owners and operators of land, used in whole or in part, for a Wireless Communications Facility, and all owners and operators of such Wireless Communications Facility may, as a condition of the special permit by required to permit other FCC licensed commercial entities seeking to operate a Wireless Communications Facility, to install, erect, mount and use compatible wireless communications equipment and fixtures on the equipment mounting structure on reasonable commercial terms provided that such co-location does not materially interfere with the transmission and/or reception of communication signals to or from the existing Wireless Communications Facility, and provided that there are no structural or other physical limitations that make it impractical to accommodate the proposed additional wireless communications equipment or fixtures.
- (G) Wireless Communications Facilities may be located on the same lot as other structures or uses lawfully in existence.
- (H) All Wireless Communications Facilities shall be Stealth Facilities that effectively camouflage or conceal the presence of a Tower and antennae. *(Amended April 2, 2002)*

5. Siting and Height Requirements:

- (A) Setbacks
 - (1) The minimum distance from the base of a Tower, including Towers within Stealth Facilities, to any property line, road, right-of-way or building used by people shall be at least one and one-half (1 ½) times the height of the Tower to ensure an adequate fall zone. *(Amended April 2, 2002)*
 - (2) The setbacks for the Wireless Communications Building shall comply with the setback requirements for the zoning district.
 - (3) A Tower shall be setback a minimum distance of five (5) times the tower height from abutting and neighboring residential dwellings or proposed dwellings in an already permitted subdivision or public roadways except that this distance may be reduced if the Planning Board finds that reduction in the setback distance would not be significantly more detrimental (visually and aesthetically) to the neighborhood than alternative proposals. *(Amended April 2, 2002)*
- (B) It is presumed that the maximum allowed height of a Tower is seventy-five (75) feet, unless the applicant demonstrates that a greater height is required to allow for provision of the wireless communications services or unless the Planning Board finds that co-location on said Tower is both practical and preferable. Stealth Facilities must meet all dimensional restrictions for buildings and structures as required in the applicable sections of the Town of Princeton Zoning By-laws unless the Planning Board finds that the visual and aesthetic impacts on the neighborhood would not be significantly more detrimental than alternative proposals. If a Height greater than seventy-five (75) feet is essential the applicant shall demonstrate with substantial evidence that services cannot be provided with multiple lower Wireless Communications Facilities or alternative technologies such as repeaters or micro-cells. *(Amended April 2, 2002)*
- (C) Communications Devices located on an existing structure shall not exceed ten (10) feet in height above the roofline of the structure and the total height of the existing structure and the device may not exceed seventy-five (75) feet, unless the Planning Board finds that a greater height is essential to the proper functioning of the wireless communication services to be provided by the applicant at such location. For structures where it is difficult to determine the roofline, such as water tanks, the height of the Communications Devices shall not exceed ten (10) feet above the highest point of the structure. *(Amended April 2, 2002)*
- (D) Towers shall be sited off ridgelines and where their visual impact is the least detrimental to valuable historic and scenic areas. Consideration shall be given to historic and scenic areas listed in the Town Open Space and Recreation Plan, Master Plan, and Massachusetts Landscape Inventory, M.G.L. C.131, s. 39A; conducted by Massachusetts Dept. Of Environmental Management, 1982.

- (E) No new Towers shall be permitted unless the Applicant demonstrates to the reasonable satisfaction of the Planning Board that no existing Non-Residential Structure or Tower can accommodate the Applicant's proposed Wireless Communications Device; said demonstration may include the following:
 - (1) No existing Tower or Non-Residential Structures are located within the geographic area required to meet the applicant's engineering and height requirements.
 - (2) Existing Towers or non-residential structures do not have sufficient structural strength or cannot be brought up to appropriate strength to support the proposed Wireless Communications Device.
 - (3) The fee, costs, or contractual provisions required by the owner in order to share an existing wireless communication structure or to adapt an existing structure for use are unreasonable. Unreasonable shall be defined as exceeding the cost of building a new structure.
 - (4) The applicant demonstrates that there are other limiting factors that render existing structures unreasonable or not feasible.
- (F) Clustering of several Wireless Communications Facilities on an individual lot may be allowed if the Planning Board finds that the visual and aesthetic impact on surrounding residential neighborhoods or dwellings would not be significantly more detrimental than having only a single Wireless Communications Facility.

6. Design Requirements:

- (A) Towers must be of the monopole type. No Tower shall be placed or constructed that uses a lattice-type construction which requires three (3) or more legs or guy wire supports or both. (*Amended April 2, 2002*)
- (B) There shall be no signs or advertisements, except for no trespassing signs and a required sign giving a phone number where the responsible party can be reached on a 24-hour basis.
- (C) Wireless Communications Devices and Towers shall be enclosed in Stealth Facilities. If the Stealth Facility is to appear as a tree, it shall contain substantial and dense foliage. (*Amended April 2, 2002*)
- (D) All Wireless Communications Devices and Towers, which are not fully enclosed in Stealth Facilities shall be colored, molded, and/or installed to blend into the supporting structure and/or the landscape and shall be constructed out of non-reflective materials. All Wireless Communications Devices shall be situated on or attached to a structure in such a manner that they are screened, preferably not being visible from abutting streets and residences.
- (E) All building mounted Wireless Communications Devices shall be designed and located so as to appear to be an integral part of the existing architecture of the building and shall be of colors that match and/or blend with those of the building.
- (F) The Wireless Communications Facility shall be fenced to control access. Fencing shall be compatible with the scenic character of the town.
- (G) No Wireless Communications Facility shall be constructed to a height that requires aircraft lighting or special painting to enhance visibility. No Tower shall be artificially lighted.
- (H) There shall be a maximum of one parking space for each Tower to be used in connection with maintenance of the site and not to be used for the storage of vehicle or other equipment.
- (I) The access road and parking area surface shall be constructed of gravel or other non-bituminous material to maintain a rural character.
- (J) Existing on-site vegetation shall be preserved to the maximum extent possible.
- (K) Vegetative screening shall be used to screen abutting residential properties and roadways. Plants that fit in with the surrounding natural vegetation shall be used.

(L) The Wireless Communications Facility shall not generate noise in excess of thirty-five (35) dBA at the property line. *(Amended April 2, 2002)*

(M) All network interconnections shall be via underground land lines.

7. Application Process:

Application for a Special Permit for siting Wireless Communications Facilities shall be filed in accordance with established rules and regulations and in addition:

(A) TO SITE A NEW TOWER OR A TOWER WITHIN A STEALTH FACILITY, the applicant shall submit:

- (1) Site plans and engineering plans, prepared by a professional engineer licensed to practice in Massachusetts, on 24" x 36" sheets at a scale of 1"=40', or 1"=200', where appropriate, on as many sheets as necessary which shows the following:
 - (a) North arrow, date, scale, seal(s) of the licensed professional(s) who prepared plans and space for reviewing licensed engineer's seal.
 - (b) Name and address of landowner and name and address of abutters.
 - (c) Property lines and location of permanent structures or buildings, within five hundred (500) foot radius of proposed Tower and/or Facility. *(Amended April 2, 2002)*
 - (d) Existing (from a topographical survey completed within two (2) years of application submittal date by a professional surveyor licensed to practice in Massachusetts) and proposed contour lines at a maximum of two (2) foot intervals and spot elevations at base of all the proposed and existing structures. *(Amended April 2, 2002)*
 - (e) Vegetation to be removed or altered.
 - (f) Plans for drainage of surface water and plans to control erosion and sedimentation both during construction and as a permanent measure.
 - (g) Delineation of wetlands, if any.
 - (h) Location of Tower and/or Facility, including supports, if any.
 - (i) Plans for anchoring, attaching and supporting the structure and devices, including specifications of hardware and all other building material.
 - (j) Plans for accessory buildings.
 - (k) Layout and details of surfacing for access road and parking.
 - (l) Amenities such as lighting, fencing, and landscaping.
 - (m) Eight (8) view lines in a one to three mile radius of the site, beginning at true north and continuing clockwise at forty-five (45) degree intervals, plus additional view lines from any historic, scenic, or other prominent areas of Town determined by the Planning Board. View lines shall, to the extent feasible, be taken from existing vantage points commonly used by the public, such as public ways, buildings or facilities. The submittal shall include unaltered photographs taken from eye level, five (5) feet above grade, which show the existing condition of these view lines, as well as accurate scale perspective elevation drawings, computer-altered photographs or other accurate representations showing view lines with the Facility in place. *(Amended April 2, 2002)*
- (2) A map showing the areas covered/served by the proposed wireless communication structure and device of different signal strengths, and the interface with adjacent service areas. The applicant shall also provide a

master plan showing the applicant's intended completed coverage of the town including any coverage that may be provided by Wireless Communications Facilities in surrounding towns. *(Amended April 2, 2002)*

- (3) A locus map at a scale 1"=1000' (or whatever is necessary to show where in the proposed tower is sited), which shall show streets and landscape features.
- (4) A description of the soil and surficial geology at the proposed site.
- (5) A narrative report written by the carrier and licensed professional engineer which shall:
 - (a) Describe the justification of proposed site.
 - (b) Include a draft of the contract between the structure/building owner and the applicant, if appropriate.
 - (c) Describe the structure and the technical, economic and other reasons for the Facility design.
 - (d) Describe the capacity of the structure, including the number and type of additional facilities it can accommodate.
 - (e) Demonstrate that the Tower or non-residential structure to which the device will be mounted has the structural integrity to support such device.
 - (f) Describe actions to be taken if electromagnetic radiation from the Facility should exceed levels designated by the FCC.
 - (g) Describe the projected future needs of the carrier, and how the proposed Wireless Communications Facility fit with future projections to serve the town and adjacent towns.
 - (h) Describe leasing agreement should another carrier desire to co-locate.
 - (i) Describe special design features to minimize the visual impact of the proposed Wireless Communications Facility.
 - (j) Applicant shall provide copies of all information submitted to Massachusetts Department of Public Health, Radiation Control Program for 105 CMR 122, including initial filing and ongoing monitoring. *(Amended April 2, 2002)*
 - (k) A graph showing the calculated cumulative power densities proposed and potential maximum from all transmitters at six (6) feet and sixteen (16) feet above ground level plotted by foot from zero (0) to two-thousand (2000) feet from the tower location. Power Density shall be in units of $\mu\text{W}/\text{cm}^2$. *(Amended April 2, 2002)*
 - (l) A drawing to scale showing: 1.) Radial distance lines to two-thousand (2000) feet centered on the Wireless Communications Facility location; 2.) Location of property boundaries per assessors map for parcel containing the Wireless Communications Facility and abutting parcels; 3.) The calculated cumulative power densities proposed and potential maximum from each antenna sector at six feet above ground level. This is plotted with three (3) or more constant value lines showing power density regions in the low, medium and high portions of the calculated range. Power Density shall be in units of $\mu\text{W}/\text{cm}^2$. *(Amended April 2, 2002)*
- (6) Proof of approval of all other necessary permits needed for construction and operation.
- (7) After the application is submitted, and not more than fourteen (14) days before the public hearing, the applicant shall arrange to fly a minimum two (2) foot diameter balloon at the site of the proposed wireless communication structure at the maximum height of the proposed installation. The date and location of the flight shall be advertised at least fourteen (14) days, but not more than twenty-one (21) days before the flights, in a newspaper with a general circulation in the town. *(Amended April 2, 2002)*

- (B) To encourage the siting and design of Wireless Communications Facilities with minimal visual impact, the applicant is required to comply with Section XIII.7.A. above except that the Planning Board may waive some or all of said requirements for applications that meet one of the following conditions: *(Amended April 2, 2002)*
1. Located on an existing Wireless Communications Facility at a height lower than an existing Wireless Communications Device. If the Wireless Communications Facility is a Stealth Facility, the stealth appearance must be maintained. *(Amended April 2, 2002)*
 2. Located in a Stealth Facility where the Stealth Facility is an exact replication of an existing structure. *(Amended April 2, 2002)*
 3. Located in a Stealth Facility constructed to replicate surrounding tree types where the Stealth Facility is no more than twenty (20) feet above the existing foliage and no part of the Wireless Communications Facility below the existing foliage is visible from any existing structure or roadway. *(Amended April 2, 2002)*
 4. Wireless Communications Facilities proposed lower than the surrounding foliage and deemed by the Planning Board to have minimal visual impact. This would include alternative technologies such as micro-cells. *(Amended April 2, 2002)*
- (C) The above information shall be submitted along with the regular application form to the following: one (1) copy to the Building Inspector, one (1) copy to the Fire Chief, one (1) copy to the Chief of Police and three (3) copies to the Planning Board.
- (D) Actual drive test measurements must be performed and simulations of coverage must incorporate this information. This shall be submitted prior to or at the public hearing. This may be waived if the Planning Board determines that it is not necessary. *(Adopted May 15, 2001)*

8. Approval:

- (A) The Planning Board may grant a Special Permit for Wireless Communications Facilities, only upon the findings required by Mass. Gen. Laws C. 40A, s. 9, the Town of Princeton's Zoning By-law for Special Permits, and the following:
- (1) That the applicant has demonstrated to the satisfaction of the Planning Board that the requirements of this by-law have been met.
 - (2) That the size and height of the structure is the minimum necessary.
 - (3) That adverse impact on adjacent properties, residential neighborhoods, historic structures or scenic views is minimized to the extent possible. *(Renumbered April 2, 2002)*
 - (4) That there will be no nuisance or serious hazard associated with the use. *(Renumbered April 2, 2002)*
 - (5) For a Tower, that there are no feasible and preferable alternatives to the location, including co-location. *(Renumbered April 2, 2002)*
- (B) Any expansion or extension of Wireless Communications Facilities, or construction of new or replacement Towers or Facilities shall require an amendment to the Special Permit.
- (C) Any Special Permit granted under this section shall automatically lapse within one (1) year of the date of the grant, not including the time required to pursue or await the termination of an appeal, if construction is not complete and substantial use has not commenced, except for good cause.

9. Conditions of Use:

- (A) The applicant shall be required to maintain and keep in good repair all Facilities, Devices and Towers. The applicant shall post an initial bond to cover construction costs and an annual maintenance bond to cover

maintenance for the access road, site, and structure and to cover the removal of the Facility in the event of non-operation (Refer to Section XIII.9.C.). An access road may include existing town roads not designed for heavy traffic. The amount of the surety shall be subject to the approval of an engineer, architect or other qualified professional registered to practice in the Commonwealth of Massachusetts hired by the town. (*Amended April 2, 2002*)

(B) Regulatory Compliance:

- (1) Certification, by an independent test consultant, stipulating that the Wireless Communications Facility is in compliance with the FCC, shall be conducted within ten (10) days of completion of construction of the Facility and filed with the Building Inspector.
- (2) Annual certification demonstrating structural integrity and continuing compliance with current standards of the FCC, FAA and the American National Standards Institute shall be filed with the Building Inspector by the Special Permit Holder, and shall be reviewed by a licensed professional engineer hired by the town. Federal Communications Commission (FCC) for radio frequency emissions monitoring locations, no less than three (3) locations within a one (1) mile radius of the base of the personal wireless communications facility. The monitoring locations will be determined by the Planning Board. These sites will be used for annual certification to demonstrate compliance with current FCC standards for radio frequency emissions. (*Amended May 15, 2001, April 2, 2002*)
- (3) If the FCC or the FAA regulations are changed, the owner or operator shall bring the facilities into compliance within six (6) months or earlier if a more stringent compliance schedule is included in the regulation.
- (4) Failure to comply with any regulations shall be grounds for removal of non-complying structures, buildings, devices at the owner's expense.
- (5) If the device is moved lower on the structure and the top of the structure is no longer needed, then the non-operational part of the structure shall be removed within one hundred twenty (120) days.

(C) Removal and Repair:

- (1) An applicant must execute a covenant with the Planning Board agreeing to remove, within ninety (90) days of notice from the Planning Board, the Wireless Communications Facility not in operation for a period of six (6) months, unless the reason for non-operation is the result of major damage.
- (2) If the Facility is not removed within ninety (90) days, the town will remove said Facility at the owner's expense. The annual maintenance bond shall cover the cost of removal and may be used for this purpose. In the event the amount of surety is insufficient to cover the costs of removal, the town may place a lien upon the property to cover the difference in cost.
- (3) In the event of major damage, repair must begin within six (6) months of damage. Major damage shall mean damage to the Facility caused by no fault of the owner or operator.

10. Fee Structure:

In addition to the town special permit filing fees, the applicant shall pay any additional cost of retaining professional services, including those referenced in Section XIII.9.A., & B., if such services are deemed necessary by the Planning Board. The applicant may be required to pay reasonable fees for professional review of the applicant's proposal by a professional or radio frequency engineer, attorney or other qualified professional. (*Amended April 2, 2002*)

11. Severability:

If any section of this by-law is ruled invalid, such ruling will not affect the validity of the remainder of the by-law.

(Section XIII - Adopted June 8, 1999)