

THE CITY OF REHOBOTH BEACH

SMALL WIRELESS COMMUNICATIONS FACILITY DESIGN MANUAL

SECTION I. DEFINITIONS

The following terms are defined as follows:

1. *Accessory Equipment* – any equipment serving or being used in conjunction with a wireless communications facility or wireless support structure. The term “Accessory Equipment” includes but is not limited to utility or transmission equipment, power supplies, generators, batteries, cables, equipment buildings, cabinets and storage sheds, shelters or similar structures.
2. *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.
3. *Collocation* – The mounting of one or more WCFs, including antennae, on a pre-existing structure, or modifying a structure for the purpose of mounting or installing a WCF on that structure.
4. *Design Zone* – a geographic region or regions identified by the City as having specific aesthetic preferences for Small Wireless Facility installations in that that zone.
5. *Decorative Pole* – A City-owned pole that is specially designed and placed for aesthetic purpose and on which no appurtenances or attachments, other than a small wireless facility, lighting, or municipal attachments have been placed or are permitted to be placed.
6. *Modification* or *Modify*—the improvement, upgrade or expansion of existing small wireless communications facilities on an existing wireless support structure, if the improvement, upgrade, or expansion does not substantially change the physical dimensions of the wireless support structure.
7. *New* - Install a new wireless support structure where none exists and to attach wireless facilities on the new structure.
8. *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 City.
9. *Replacement* -- the replacement of an existing structure without wireless facilities with a new structure and to attach wireless facilities on the replacement structure.

10. *Small Wireless Facility* -- A wireless communications facility that meets the following criteria:

(1) The 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 preexisting height as a result of the collocation of new antenna facilities; and

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

(3) All antenna equipment associated with the facility (excluding antennas) are cumulatively no more than 28 cubic feet in volume.

(4) The facilities do not require antenna structure registration under 47 CFR Part 17;

(5) The facilities are not located on Tribal lands, as defined under 36 CFR 800.16(x); and

(6) The facilities do not result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in 47 CFR 1.1307(b).

11. *Stealth Technology*—camouflaging or screening methods applied to wireless communications facilities and accessory 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 appropriate to the site's context and surrounding environment. Such methods include, but are not limited to, architecturally screened roof-mounted antennae, building-mounted antennae painted to match the existing structure and facilities constructed to resemble trees, shrubs, and light poles.

12. *Underground District* – A zoning district in which all utility installations are required to be installed underground on a non-discriminatory basis.

13. *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).

SECTION II. GENERAL STANDARDS FOR SMALL WIRELESS FACILITIES

1. All Small WCF installations must meet the most preferable design option for that zone, or otherwise demonstrate why it is technically infeasible to meet the most preferable design. In addition to the order of priorities, the City may require additional aesthetic requirements that are reasonable in that they are technically feasible and reasonably directed to avoiding or remedying the intangible public harm of unsightly or out-of-character deployments.
2. All Small WCF shall be installed and maintained in a workmanlike manner in compliance with the National Electric Safety Code and the National Electrical Code, as applicable.
3. All Small WCF shall comply with the Americans with Disabilities Act guidelines adopted by the City and all applicable requirements of the City Code relating to streets and sidewalks.
4. Wireless support structures shall not obstruct vehicular, pedestrian, or cyclist traffic or sight lines in an unsafe manner.
5. All Small WCF shall comply with applicable federal and state standards regarding pedestrian access and movement.
6. All Small WCF shall be designed and constructed in an effort to minimize aesthetic impact to the extent technically feasible.
7. No Small WCF shall extend beyond the boundaries of the rights-of-way unless approved on a case-by-case basis by the appropriate City official.
8. All Small WCF 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 Telecommunications Industry Association (ANSI/TIA-222, as amended), or to the industry standard applicable to the structure.
9. All Small WCF shall post a sign in a readily visible location identifying the owner's permit number and 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.

SECTION III. ANTENNA AND ACCESSORY EQUIPMENT STANDARDS

1. Antenna Standards

- a. Any Antenna associated with a Small WCF shall not exceed three (3) cubic feet in volume.
- b. Total height of the antenna shroud/canister shall not exceed 3 feet.
- c. All pole-top Antennas shall be flush-mounted as closely to the top of the wireless support structure as technically feasible.
- d. All Antennas shall be of a design, style, and color that reasonably matches the wireless support structure upon which they are attached.
- e. Any necessary pole-top extension shall be of the minimum height necessary to achieve separation from the existing pole attachments.
- f. Any Antenna mounted on a lateral standoff bracket shall protrude no more than necessary to meet clearances.
- g. If mounted on an existing structure, no Antenna shall impair the function of said structure.

2. Equipment Standards

(i) Ground mounted Equipment:

- a. Ground mounted equipment shall not exceed twenty-eight (28) cubic feet in volume. Stealth Technology shall not be included in the Equipment volume calculation.
- b. Total dimensions (HxWxD) of ground mounted equipment shall not exceed 36x36x36 inches.
- c. Ground mounted equipment shall be placed in line with the pole or wireless support structure.
- d. Equipment shall be of a color that reasonably matches the wireless support structure upon which such Accessory equipment is mounted.
- e. All Accessory equipment shall be contained within a single equipment shroud or cabinet, where technically feasible.
- f. No ground mounted equipment shall feature any lighting, including flashing indicator lights, unless required by state or federal law.

(ii) Pole mounted Equipment:

- a. Pole mounted 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.
- b. Pole mounted equipment shall be mounted to provide a minimum of eight (8) feet vertical clearance from ground level.
- c. Pole mounted equipment shall not exceed twelve (12) cubic feet in volume.
- d. Total height of the pole mounted equipment shall not exceed 36 inches.

- e. Total width of the pole mounted equipment shall not exceed 24 inches.
- f. Pole mounted equipment shall not protrude more than 12 inches from the wireless support structure.
- g. Equipment shall be of a color that reasonably matches the wireless support structure upon which such Accessory equipment is mounted.
- h. All Accessory equipment shall be contained within a single equipment shroud or cabinet, where technically feasible.
- i. No pole mounted equipment shall feature any lighting, including flashing indicator lights, unless required by state or federal law.

3. Wiring Standards

- a. Exposed wiring on decorative poles is prohibited.
- 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 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 without excessive slack or extra cable storage on the wireless support structure.
- d. Any conduit or U-guard shall be of a color that reasonably 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.

4. Backup Power and disconnect

- a. Battery backup-power devices shall be installed with a transfer switch to prevent back feeding into the electrical system.
- b. Each approved Small WCF shall have a clearly marked power-disconnect switch adjacent to the electronics cabinet and located outside areas that exceed radio-frequency exposure limits.
- c. Back power and power disconnect shall be placed at minimum of seven (7) feet vertical clearance from ground level.

SECTION IV. POLE STANDARDS

1. Existing Poles

The combined maximum height of any proposed Small WCF and the existing wireless support structure shall be: 1) no more than ten (10%) percent taller than the tallest existing wireless support

structure in the public rights-of-way within a two hundred fifty (250) foot radius of the proposed Small WCF; or 2) fifty (50) feet above ground level, whichever is greater.

2. Replacement Poles

- a. The maximum height of any proposed replacement utility pole shall be: 1) no more than ten (10%) percent taller than the tallest existing utility pole in the public rights-of-way within a two hundred fifty (250) foot radius of the proposed Small WCF; or 2) fifty (50) feet above ground level, whichever is greater.
- b. Any replacement wireless support structure shall be of comparable materials and design to the existing utility pole.
- c. Any replacement wireless support structure shall be placed within five (5) feet of the existing utility pole being replaced.
- d. Any replacement wireless support structure shall be designed to accommodate all uses that existed on the existing utility pole prior to replacement. As part of an application for a Small WCF, the applicant shall provide documentation from a structural engineer licensed in the State of Delaware confirming that the replacement wireless support structure, Small WCF, and prior existing uses shall be structurally sound.
- e. Any replacement wireless support structure shall not deviate from the predominant pattern of existing adjacent structures.

3. New Poles

- a. The maximum height of any new wireless support structure shall be: 1) no more than ten (10%) percent taller than the tallest existing utility pole in the public rights-of-way within a two hundred fifty (250) foot radius of the proposed Small WCF; or 2) fifty (50) feet above ground level including any antenna, whichever is greater.
- b. Any new wireless support structure shall be installed in accordance with the predominant pattern of existing adjacent structures.
- c. To the extent technically feasible, no new wireless support structure shall be installed:
 - i. Directly in front of any building entrance or exit so that it would interfere with ingress or egress;
 - ii. Within ten (10) feet of the edge of any driveway;
 - iii. In the public rights-of-way directly opposite any driveway; or
 - iv. In violation of the design standards contained herein.
- d. Decorative Poles:
 - i. Decorative Poles shall be required:
 1. For the replacement of any existing Decorative Pole; and

2. In any zoning district where all utilities are required to be placed underground on a non-discriminatory basis.
 - ii. For any replacement Decorative Pole, the new Decorative Pole shall match the existing Decorative Pole in shape, design, color, and material.
 - iii. All replacement Decorative Poles shall comply with the requirements of Section IV(2) of this Design Manual.

SECTION V. PREFERRED SMALL WCF TYPES

Preferred placement of Small WCF shall depend on application types. The order of priority from most preferable to least preferable, is:

- Modification or co-location on existing wireless support structure
- Replacement
- New

If the Wireless Service Provider (WSP) is unable to co-locate on the existing wireless support structure; WSP needs to provide the preferred pole locations considered within 300' of proposed New/ replacement pole location and provide a justification as to why the existing poles were not suitable for co-locations. If the WSP is unable to replace an existing wireless support structure to co-locate on the replaced structure, WSP must provide the preferred pole locations considered within 300' of proposed new wireless support structure location and provide a justification as to why the existing poles were not suitable for replacement and co-location.

All Small WCF installations must meet the most preferable design option for that zone, or otherwise demonstrate why it is technically infeasible to meet the most preferred design. In addition to the order of priorities, the City may require additional aesthetic requirements that are reasonable in that they are technically feasible and reasonably directed to avoiding or remedying the intangible public harm of unsightly or out-of-character deployments.

SECTION VI. SETBACKS

- Small WCF must be at a minimum set back distance of 30 feet from the nearest residential dwelling.
- Small WCF must be at a minimum set back distance of 20 feet from the nearest commercial dwelling.
- Small WCF must be at a minimum set back distance of 250 feet from the nearest elementary and secondary educational institutions.

- Small WCF must be at a minimum set back distance of 300 feet from the other small WCF from the same WSP and 100 feet from other Small WCF from different WSP if they are not co-locating on the same wireless support structure.
- Small WCF must be at a minimum set back a distance of 3.5 feet from the curb, or 6 feet from the edge of the paved roadway section if no curb exists, unless placed in line with other poles within the same block.
- Small WCF must be at a minimum set back distance of 250 feet from the nearest park.

SECTION VII. LIST OF SUBMITTALS

The chart below indicates the required submittals that must accompany an application for a Small WCF. The submittal requirements are identified for each application type.

| Field Name | Description | New | Replacement | Modification | Collocation |
|-----------------------------|--|-----|-------------|--------------|-------------|
| COMPLETE APPLICATION | Checklist | X | X | X | X |
| CONSTRUCTION DRAWING | Stamped by a Delaware P.E. | X | X | X | X |
| MAP | Attach map of the general area, calling out the location of the site with address or coordinate location information. | X | X | X | X |
| MANUFACTURER SPECIFICATIONS | Upload manufacturer's cut-sheets for all proposed radios, antennas and accessories listed in application. | X | X | X | X |
| STRUCTURAL ANALYSIS | Stamped by a Delaware P.E. | X | X | X | X |
| RF PROPAGATION STUDIES | <ol style="list-style-type: none"> 1. Provide copy of RF propagation contour maps showing site with/without calculated signal levels in color at the target signal level, and ± 5 dB 2. Include a legend that shows what signal each color represents 3. Include maps showing coverage at the proposed antenna elevation and at 10 ft below the proposed elevation 4. Maps must be legible and in sufficient detail | X | X | | |
| PROPERTY OWNER CONSENT | <ol style="list-style-type: none"> 1. Attach evidence that the owner has provided consent to use their structure for the proposed Small WCF 2. Include unique pole number/identifier | X | X | | X |
| PHOTOS / PHOTO SIMULATIONS | For all applications, photo simulations from at least three reasonable line-of-site locations near the proposed project site must be included. The photo simulations must be taken from the viewpoints of the greatest pedestrian or vehicular traffic. Angle of photo simulation separation must be at least 90 degrees or greater and provide a full profile depiction. | X | X | X | X |
| RF ANALYSIS (EME REPORT) | Required for all Small WCF installations in the ROW or on rooftops. RF EME report should be Stamped by a Delaware P.E. | X | X | X | X |

SECTION VIII. APPROVAL

1. The City Manager or designee(s) shall reasonably determine whether a proposed Small WCF design complies with the requirements of this Design Manual.
2. Any requests for a deviation from the requirements of this Design Manual shall be considered on a case-by-case basis by the City Manager and shall be approved upon a determination by the City Manager that such deviation is the least deviation necessary to comply with the objectives of this manual, Chapter 270 of the City Code, or necessary to avoid the effective prohibition of wireless service pursuant to the Rules of the Federal Communications Commission.

SECTION IX. PRIOR APPROVED DESIGNS

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

SECTION X. SMALL WCF DESIGN ZONES AND AESTHETIC PREFERENCES

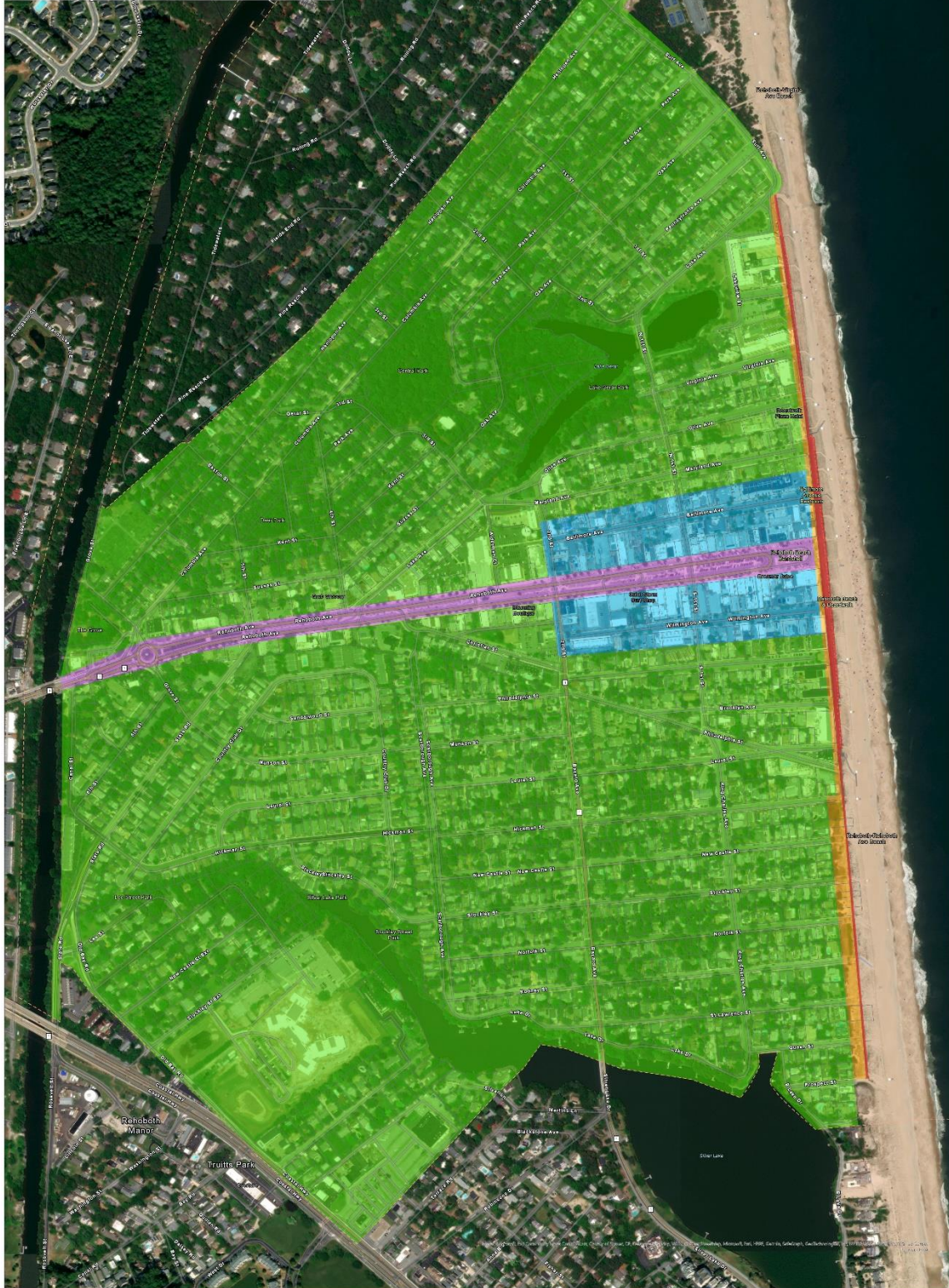
Preferred aesthetics of Small WCF shall depend on the location of the proposed Small WCF. There are 5 design zones in the city that each have aesthetic preferences for the type of Small WCF installation. The design zones are as follows and depicted in the map below:

1. Residential
2. Commercial
3. Central Corridor
4. Boardwalk Adjacent/Buffer
5. Boardwalk



Proposed Small WCF Zones

- Rehoboth Beach Municipal Boundary
- Boardwalk
- Boardwalk Adjacent/Buffer
- Central Corridor
- Commercial
- Residential
- Tax Parcel



Each Design Zone lists the aesthetic options for that zone from most preferred to least preferred. All Small WCF installations must meet the most preferable design option for that zone, or otherwise demonstrate why it is technically infeasible to meet the most preferred option. In addition to the order of priorities, the City may require additional aesthetic requirements that are reasonable in that they are technically feasible and reasonably directed to avoiding or remedying the intangible public harm of unsightly or out-of-character deployments.

1. Residential Design Zone:

The order of priority from most preferable to least preferable design option for Small WCF in the Residential Design Zone is:

- i. Colocate on an existing wooden utility pole. Conduit and any accessory equipment shall be painted to match the existing pole.
- ii. Replace an existing wooden utility pole to accommodate the Small WCF. Conduit and any accessory equipment shall be painted to match the replaced pole.
- iii. New pole:
 - a. If on a block with an existing metal light pole or decorative pole, Preference is to install a new decorative or metal pole aesthetically consistent with the existing poles on the block.
 - b. If there are no existing metal light poles or decorative poles, the preference is a new wooden pole installed in line with other poles on the block.

2. Commercial Design Zone

The order of priority from most preferable to least preferable design option for Small WCF in the Commercial Design Zone is:

- i. On a commercial building rooftop and must be mounted in an antenna enclosure the same color or design as the building.
- ii. On an existing wooden pole. Conduit and any accessory equipment shall be painted to match the existing pole.
- iii. On a replacement wooden pole. Conduit and any accessory equipment shall be painted to match the existing pole.
- iv. On a new wooden pole.
- v. On a new metal standalone or decorative pole.

3. Central Corridor Design Zone

In the Central Corridor Design Zone, Small WCFs may only be collocated on wireless support structures in the median. The order of priority from most preferable to least preferable design option for Small WCF in this zone is:

- i. Replace existing decorative light pole to accommodate concealed antennas and equipment. All accessory equipment and antennas must be concealed within the pole. The replaced decorative pole shall match the existing decorative pole in shape, design, color, and material. Light fixtures on the replaced pole shall match the existing light fixtures.

4. Boardwalk Adjacent/Buffer Design Zone

The Boardwalk Adjacent/Buffer Zone extends 30' from the west side of the boardwalk. For all street ends from Hickman St south to the end of the boardwalk, the Boardwalk adjacent/buffer zone extends 90' from the west edge of the boardwalk. All Small WCFs to be located in this buffer zone must meet the following design options, listed in order of priority from most preferable to least preferable:

- i. If there is an existing utility pole within the zone, preference is to collocate on the existing pole. Conduit and any accessory equipment shall be painted to match the existing pole.
- ii. If there is an existing utility pole within the zone that would need to be replaced to accommodate the antenna, preference is to replace the existing pole to collocate the Small WCF.
- iii. If there are no existing utility poles in the Boardwalk Buffer zone, and there is a decorative light pole, preference is to replace the decorative light pole. The replaced light pole shall match the existing decorative pole in shape, design, color, and material, and all antennas and equipment must be concealed within the pole. An increase in height or width of the decorative pole to accommodate the concealment of the antennas and equipment shall be considered on a case-by-case basis by the City Code Enforcement Officer.
- iv. If there are no existing utility poles or other vertical structures, preference is to install a new wooden pole in line with other utility poles on the same street block.

5. Boardwalk Design Zone

The Boardwalk Zones includes the pedestrian way constructed and maintained generally parallel to the Atlantic Ocean, including but not limited to all connections and appurtenances thereto, whether on public or private property. For the purposes of Small WCF design standards as outlined in this manual, the Boardwalk Zone includes all light poles and similar appurtenances along the eastern edge of the boardwalk.

The order of priority from most preferable to least preferable design option for Small WCF in the Boardwalk Design Zone is:

- i. All Small WCF installations within the boardwalk design zone shall not deviate from the predominant pattern and size of existing adjacent structures. For the replacement of decorative poles along the east side of the boardwalk, the replacement decorative pole shall match the existing decorative pole in shape, size, design, color, and material. All antennas and equipment must be concealed within the pole.

- ii. Small WCFs are also allowed on the tall floodlights overlooking the beach volleyball courts. These installations must be as minimally aesthetically obtrusive as is technically feasible, and all equipment must be mounted on or inside the pole.