

Design Standards and Material Finish Requirements For Wireless Telecommunication Facility

Pole Attachments and Replacements:

1. The wireless telecommunication facility shall be mounted on a structure no more than 10% taller than adjacent structures. In addition, structures cannot exceed 50' in height. If the applicant can prove the number of small cells installations can be reduced, a waiver of the 10% requirement could be granted at the discretion of the City Engineer.
2. The antenna shall be as small as possible and it shall not be larger than 3 cubic feet and shall have no individual surface larger than four square feet.
3. The wireless telecommunication facility shall not extend outward from the existing pole by more than 2 feet, except that an antenna one half inch in diameter or less may extend an additional six inches.
4. The replacement City owned structure, including lightning rods and all other attachments, shall not exceed the height requirements of the existing City owned structure by more than 10%. Once the height of the City owned structure has been increased under the provisions of this section, the height shall not be further increased.
5. The replacement City owned structure diameter shall not exceed the existing City owned structure by more than 50 percent.
6. The replacement City owned structure shall match the original or surrounding City owned structures in materials and color.
7. The applicant shall provide stock poles to be used when damage occurs to existing structures. One stock pole of each type shall be provided with an additional pole for every five installed poles until four poles of each type have been provided. The required inventory must be maintained by the applicant.
8. Antennas shall not exceed 30 inches in vertical length nor exceed 15 inches in width or depth. Round, whip, or cylindrical antennas will only have width.
9. Antennas and Antenna Accessories - City owned structure attached equipment shall not exceed 75 pounds (combined weight). These include but are not limited to filters, combiners, splitters, remote radio heads, tower-mounted amplifiers, line-mounted amplifiers, and low-noise amplifiers. All equipment shall be arranged evenly, proportionate, equidistant, and aligned as practical to function and operations. Cabling and wiring between accessories to antennas shall be minimized and consolidated. Cabling and wiring schematics are required as part of the construction documents.
10. Structure mounted equipment shall be mounted at least eight feet above grade.
11. Ground Mounted Equipment associated with the wireless telecommunication facility shall meet the following performance standards:
 - a. Be separated from the sidewalk by minimum of 2 feet;
 - b. Be set back a minimum of 20 feet from the nearest intersecting right-of-way line;
 - c. Be separated from the nearest wireless telecommunication equipment installation on the same block face by a minimum of 300 feet unless the equipment is placed underground;
 - d. Ground mounted equipment shall be as small as possible and 28 cubic feet in cumulative size

12. Area of installation shall be restored to a condition equal to or better than prior to construction.
13. Stand-alone poles should not be placed in front of the main windows of a house in residential areas. Preferably stand-alone poles should be placed on a lot line between two residential lots when possible. Minimum spacing of stand-alone poles should be 300’.

Material and Finish Requirements:

Finishes

All replacement poles and equipment, including mounts, attached to the City owned structure shall match the finish of the existing or new City owned structure. Finishes shall be permanent or long-lasting. No temporary finishes will be approved. The City reserves the right to direct any permit holder to renew or maintain any finish to attached equipment.

Fasteners

All fasteners for equipment use shall be denoted in construction documents for the strength, composition, coating, and exposure rating. No plastic fasteners shall be allowed, to include tie wraps and jacketed cable ties. Fasteners must be compatible to adjacent material to inhibit corrosion. All fasteners shall be the same color as the pole.

Mounts

Any accessory mounting hardware shall be included in structural analysis performed for the Wireless Telecommunication Facility by a professional engineer as part of the construction documents. Mechanical connections by compressive force (e.g., collar or banded mounts) are permitted. Chain and magnetic mounts, along with chemical bonding or adhesive attachment methods are prohibited. Mount dimensions and weight should be included in the measurement of antennas and equipment to determine whether the antennas or equipment are within the size limitations established in the guidelines. A mount shall be as compact a possible, trimmed where practical, and not reserving space for future equipment attachments.

Conduits

All exposed conduit shall match the finish of the City owned structure as follows:

1. Stainless steel or galvanized City owned structure shall have stainless steel or galvanized conduit.
2. Fiberglass City owned structure shall have matching fiberglass or be painted to match metal conduit.
3. Painted City owned structure shall have paint to match metal conduit.
4. No plastic conduit (e.g., PVC or HDPE) shall be attached to an exposed surface of a City owned structure. Any plastic conduit shall be below grade or within the hollow cavity of a City owned structure. Flexible metal conduit shall be allowed at transitions but limited to less than 36 inches in length.
5. All conduit shall be neatly dressed, plumb and level. No reserved conduit or unutilized

pathways shall be attached. Conduit shall be of a nominal inner diameter sufficient to hold the cables and wires needed for the Wireless Telecommunication Facility along with any additional capacity required to maintain and repair the Wireless Telecommunication as currently approved. Reserving future conduit capacity is not permitted. Any dig-once policy does not apply. Junction boxes must meet the same requirements as conduits. Plastic conduits must be joined by appropriate adhesive or chemical weld. Metal conduit must be mechanically joined.

Cables and Wires

Cables, including wires, must be neatly dressed and not containing any exposed slack other than drip loops. Drip loops shall be used with minimum excess cable to promote water egress. All cables and wires shall be jacketed and insulated; and concealed or enclosed where applicable and practical. Cables and wires must transition to conduit or City owned structure via weather tight and pest-resistant ports. Ports shall be mechanically sealed with weather heads or boots. Sealer to close voids (e.g., spray foam, silicone, and fire stop) are not permitted. Excluder gaskets must be installed at the base of the pole.

Grounding and Bonding

All metallic and energized components of equipment must be bonded and have a separate ground from the pole. There shall be a common ground wire from the highest above-grade attached equipment to below grade. The central ground wire will not be smaller than 6AWG stranded. All ground wire shall be insulated in a green-colored nonconductive manufacturer-applied covering. The below-grade ground will consist of one half-inch ground rod, ten feet in length, driven to below grade. A connection to ground rods shall be made by exothermic weld. All equipment with manufacturer-installed ground posts shall be bonded to ground using a hydraulically crimped lug. All ground connections shall be tool-tight and not able to be loosened by hand. A non-corrosive bonding agent shall be used between all dissimilar ground metals. Ground plans are to be depicted on construction documents. Permit holders are to provide resistance to ground testing after a completed installation to be made part of the construction documents.