

## 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 feet 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 should be as small as possible and it shall not be larger than 3 cubic feet and shall have no individual surface larger than 4 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 6 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, unless approved by the City Engineer.
5. The replacement City owned structure diameter shall not exceed the existing City owned structure by more than 50%.
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 City-owned structures to which an applicant has installed with equipment currently installed or proposed to have equipment installed. 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 and Antenna Accessories - 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.
9. Structure mounted equipment shall be mounted at least 8 feet above grade or as other codes require with City approval.
10. Poles must be aligned with adjacent poles and should be installed in the amenity zone. The amenity zone is defined as the area between the sidewalk and the curb. The preferred location of ground mounted equipment is in the public utility easement.
11. Flashing lights are not permitted.
12. No manufacturer decals or logos are allowed on the equipment or the poles unless required by the FCC.
13. If the Ground Mounted Equipment associated with the wireless telecommunication facility is not installed within the public utility easement, it 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 should be as small as possible and 28 cubic feet in cumulative size.
14. Area of installation shall be restored to a condition equal to or better than prior to construction.
15. New poles should not be placed in front of the main windows of a house in residential areas. Preferably, new poles should be placed on a lot line between two residential lots when possible. Minimum spacing of new poles should be 300 feet.
16. An electronic as-built in pdf format must be submitted to the City within 90 days of project completion. Failure to do so may result in the forfeiture of the permit. The pole location and any underground installations shall be submitted with City coordinates or a nationally recognized coordinate system approved by the City.

## **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. Grey poles are typically galvanized or stainless steel. Some poles in the City are galvanized and painted. The applicant is responsible for installing poles with the same finish as the existing poles.

### 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 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 as 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, 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, 10 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.

**GENERAL DESIGN STANDARDS:**

All equipment, material, and finishes shall be designed and constructed in accordance with the current City of Fargo Standard Specifications.

A pole attachment or excavation permit for a wireless telecommunication facility that has ground mounted equipment will be issued only if the City Engineer or designee finds the following:

- Ground mounted equipment will not disrupt traffic or pedestrian circulations
- Ground mounted equipment will not create a safety hazard
- Ground mounted equipment complies with ADA requirements
- The location of the ground equipment minimizes impacts on adjacent property
- Ground mounted equipment will not interfere with the maintenance of the public right of way (PROW) or operations of the City.
- Ground mounted equipment will not adversely impact the health, safety, or welfare of the community

Ground mounted equipment will not be allowed within the Downtown Mixed Use (DMU) District. Ground Mounted Equipment shall be installed in the Public Utility Easement (PUE) unless approved by the City Engineer. The area of DMU can be found at <http://gis.cityoffargo.com/Link/jsfe/index.aspx> and turn on the zoning layer.

The wireless telecommunication facility shall not block light emanating from the public utility structure and shall not otherwise interfere with the original use of the public utility structure.

Unless approved by the City Engineer, no small cell wireless facilities shall be installed on the following streets unless approved by the City:

1. Broadway between 1<sup>st</sup> Avenue South and 6<sup>th</sup> Avenue North
2. 8<sup>th</sup> Street South between 1<sup>st</sup> Avenue South and 17<sup>th</sup> Avenue South

Tree preservation – Every effort to protect the root zone of trees shall be taken. At a minimum, no disturbance shall be allowed within 20 feet of a tree.