

Design Guidelines for Small Cell Facilities and Wireless Support Structures within the Right-of-Way

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DEVELOPED BY:



City of Dublin Department of Public Works--Engineering Division

Paul A. Hammersmith, PE, Director of Engineering/City Engineer
Jean-Ellen Willis, PE, Engineering Manager
Barb Cox, PE, Engineering Manager
Tina Wawzkiewicz, PE, Civil Engineer II

City of Dublin Department of Development--Planning Division

Vince A. Papsidero, FAICP, Planning Director
Claudia D. Husak, AICP, Senior Planner



City of Dublin Legal Counsel

Jennifer D. Readler, Law Director
Thaddeus M. Boggs, Senior Associate



City of Dublin Broadband & Telecom Legal Consultant

Gregory J. Dunn, Partner
Lindsay M. Miller, Associate



City of Dublin Planning Consultant

Daniel Phillabaum, AICP, RLA



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1. BACKGROUND AND PURPOSE



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1.1 Background

Ohio House Bill 478 ("HB 478") modifies a previously adopted law regarding wireless service and the placement of small cell facilities in city rights-of-way. It was passed on April 11, 2018, signed by the governor on May 2, 2018 and is effective as of August 1, 2018. The law is intended to promote the rapid deployment of small cell facility infrastructure within the right-of-way by ensuring that municipalities grant or deny consent to install, operate, modify, or replace wireless facilities in a timely manner. The law recognizes the authority of a municipality to manage access to, and occupancy of, rights-of-ways to the extent necessary with regard to matters of local concern. This includes the protection of the integrity of historic areas and ensures that the use of the rights-of-way in such districts is technologically and aesthetically appropriate.

Chapter 99 of the City of Dublin Codified Ordinances has been modified to account for the provisions of HB 478 for the regulation of small cell facilities and wireless support structures within city rights-of-way.

1.2 Purpose

In addition to the requirements of Chapter 99, these Design Guidelines for Small Cell Facilities and Wireless Support Structures ("Design Guidelines") provide guidance to wireless communications carriers on the aesthetic requirements and specifications that all small cell facilities and wireless support structures must meet prior to installation in the City of Dublin right-of-way. Although small cell facilities installed outside the right-of-way are not bound by these guidelines, they Design Guidelines may inform such installations.

The objective of the Design Guidelines is to strike a balance between preserving the character of the City of Dublin through careful design, siting, landscaping and camouflaging techniques to blend these facilities into their environment, while enhancing the ability of wireless communications carriers to deploy small cell facilities and wireless support structures in the city quickly, effectively, and efficiently so that residents, businesses, and visitors benefit from ubiquitous and robust wireless service availability.

The Design Guidelines are intended to allow sufficient flexibility to respond to and integrate future advances in small cell facilities technology as well as innovations that improve the ability for these facilities to integrate into the surrounding environment. Due to the rapid advances in wireless technology, the Design Guidelines will be evaluated periodically to ensure that the provisions respond and adapt accordingly to these evolving technologies.

These guidelines apply to requests to locate small cell facilities and wireless support structures in the right-of-way and are administered by the City of Dublin Right-of-Way Permit Group within the Department of Public Works/Engineering with support from Planning within the Department of Development. The group can be contacted at 614-410-4740.

2. TYPES OF APPLICATION REQUESTS



2. TYPES OF APPLICATION REQUESTS

Requests to locate small cell facilities and wireless support structures within the right-of-way generally involve either the collocation of small cell facilities in association with existing wireless support structures, or the installation of a new wireless support structure and associated small cell facilities. In addition to these main categories, applications are required for the removal of small cell facilities and wireless support structures as well as eligible facilities requests for modification of an existing tower or base station within the right-of-way.

2.1 Collocation on Existing Wireless Support Structure and Associated Small Cell Facilities (Type 1 Request)

A request for collocation on an existing wireless support structure (Type 1 Request) involves installing or 'collocating' small cell facilities on an existing structure, such as a light pole, or utility pole. Type 1 Requests are administered through the Small Cell Right-of-Way Permit review process following approval of a General Right-of-Way Permit. The General Right-of-Way Permit must be renewed every 5 years.

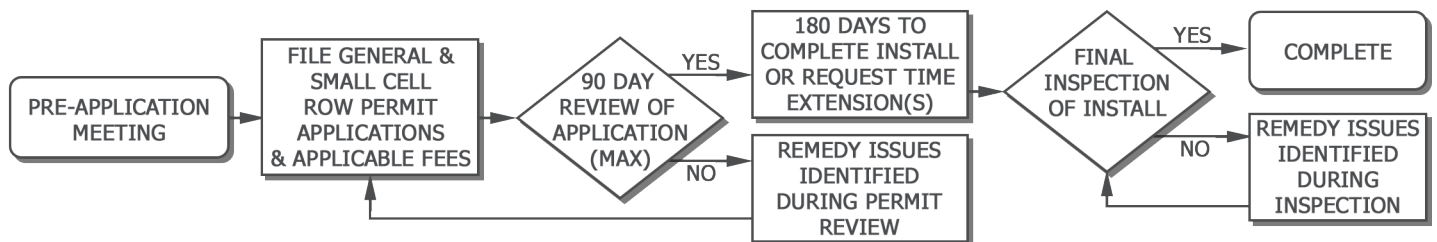


Figure 2A--Type 1 Application Request Process

2.2 New Wireless Support Structure and Associated Small Cell Facilities (Type 2 Request)

A request for a new wireless support structure and small cell facility (Type 2 Request) involves an operator installing a wireless support structure and associated small cell facility or facilities. Type 2 Requests are administered through the Small Cell Right-of-Way Permit review process following approval of a General Right-of-Way Permit. The General Right-of-Way Permit must be renewed every 5 years..

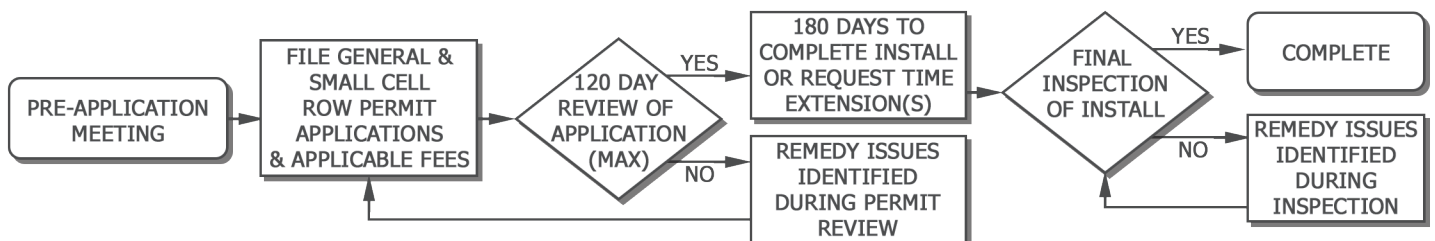


Figure 2B--Type 2 Application Request Process

2.3 Removal of Wireless Support Structure and/or Associated Small Cell Facilities (Type 3 Request)

Requests to permanently remove privately owned wireless support structures from the right-of-way are administered through the Small Cell Right of Way Permit review process.

2. TYPES OF APPLICATION REQUESTS

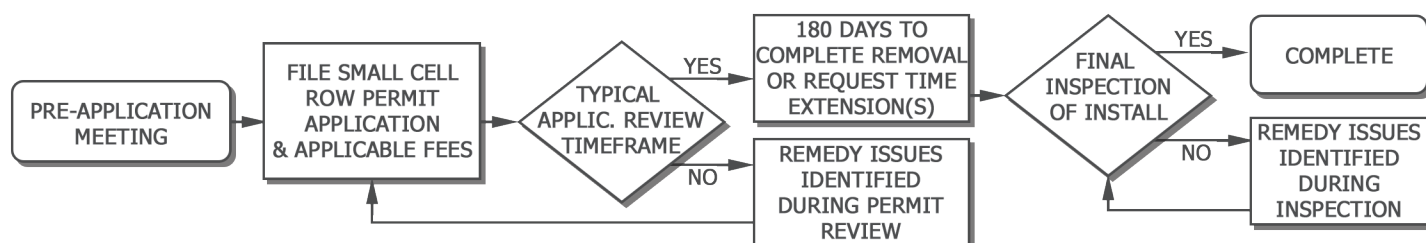


Figure 2C--Type 3 Application Request Process

2.4 Eligible Facilities Request (Type 4 Request)

An eligible facilities request (Type 4 Request) is a request to modify an existing tower or base station within the right-of-way constructed for the sole or primary purpose of supporting antennas and other associated facilities for wireless communications services, such that the modification does not substantially change the physical dimensions of such tower or base station when collocating new equipment, removing transmission equipment, or replacing transmission equipment.

Under federal law, a substantial modification to a tower or base station within the right-of-way is defined, in part, as follows:

- (1) It increases the height of the structure by more than 10% or more than ten feet, whichever is greater;
 - (a) Changes in height should be measured from the original support structure in cases where deployments are or will be separated horizontally, such as on buildings' rooftops; in other circumstances, changes in height should be measured from the dimensions of the wireless support structure, inclusive of originally approved appurtenances and any modifications that were approved prior to the passage of the Spectrum Act.
- (2) It involves adding an appurtenance to the body of the wireless support structure that would protrude from the edge of the structure by more than six feet;
- (3) It involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets; or, for wireless support structures in the public rights-of-way, it involves installation of any new equipment cabinets on the ground if there are no pre-existing ground cabinets associated with the structure, or else involves installation of ground cabinets that are more than 10% larger in height or overall volume than any other ground cabinets associated with the structure; and/or
- (4) It entails any excavation or deployment outside the current site.

Type 4 Requests are administered through the Small Cell Right-of-Way Permit review process. If during the staff review, it is determined that substantial modifications are proposed, the applicant will be informed that a Type 1 Application Request will be required.

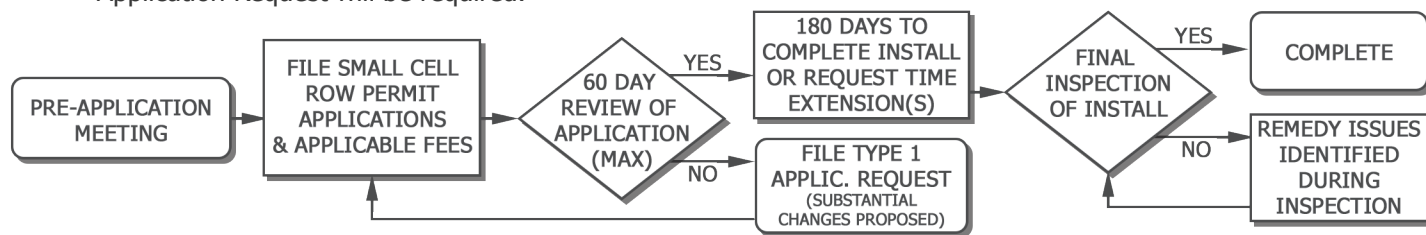


Figure 2D--Eligible Facilities Request Process



EVERYTHING GROWS HERE.

3. REQUIRED APPLICATION MATERIALS

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Unless otherwise required by state or federal law, or unless mutually agreed upon as part of the Pre-Application Meeting, all applicants shall submit to the city the following materials and information associated with each application type in order for the application to be considered complete:

3.1 Required Application Materials for Installation of Small Cell Facilities and/or Wireless Support Structures.

3.1.1 Completed Permit Application Form(s) and Fee(s) as applicable

The permit application forms are available through the Department of Public Works, with all associated application fees noted on the application forms.

3.1.2 Site Plan

At a scale not smaller than one inch equals twenty feet with dimensions, clearly indicating the following:

- Proposed location within the right-of-way including nearest cross street intersection(s);
- For parcels within 150 feet of the proposed small cell facility location, parcel identification number and property ownership as currently listed by Franklin, Delaware and Union County auditors, as applicable;
- All existing conditions within 150 feet of the proposed location, including but not limited to, buildings, utilities within the right-of-way and associated above grade structures, location of electric service and fiber optic cable, all other underground and overhead utilities, wireless support structures (both with and without small cell facilities attached), ground-mounted small cell facilities, sidewalks/shared-use paths, back of adjacent curb/edge of pavement, driveways, street trees, and protected trees as defined in §153.141 of the City of Dublin Code of Ordinances;
- Dimensions shall be provided from the proposed wireless support structure and/or small cell facility to existing wireless support structures and equipment, utility structures, back of curb/edges of pavement including driveways, sidewalks and shared-use paths;
- Dimensions shall be provided between proposed wireless support structures and any associated ground-mounted equipment.

3.1.3 Inventory of Existing Small Cell Facilities and Wireless Support Structures

Provide an inventory of any existing and approved wireless support structures with collocated small cell facilities that are either within the jurisdiction or within one-half mile of the border of the city, with latitudinal and longitudinal location coordinates.

The city may share this information with other applicants seeking to locate small cell facilities and/or wireless support structures within the City of Dublin. However, the city is not, by sharing this information, in any way representing or warranting that the sites are available or suitable. The inventory of each small cell facility and wireless support structure shall include:

- A map showing each location, by address and/or parcel identification number, including straight-line distances between each facility;
- Facility height and design; and
- Facility owner(s)/operator(s)

3.1.4 Wireless Support Structure Details

Plans, elevations, profiles and sections at a scale not smaller than one inch equals five feet, depicting existing



wireless support structures for collocation requests and proposed new wireless support structures, as applicable and clearly indicating the following:

- Height from established grade at the base of the wireless support structure to the highest point of the wireless support structure and the height to the highest point of proposed antenna or antenna enclosures, as applicable (overall height).
- Height from established grade at the base of the wireless support structure to the lowest point of all proposed small cell equipment to be installed on the wireless support structure.
- Outside diameter of upper poles, and for tapered poles the outside diameter as measured at the widest and narrowest points of the pole.

3.1.5 Small Cell Facilities Details

Plans, elevations, profiles and sections at a scale not smaller than one inch equals five feet, depicting existing small cell facilities and/or proposed small cell facilities clearly indicating the following, as applicable:

- Height, width, depth and volume in cubic feet of all proposed antenna and exposed elements and/or proposed antenna shrouds.
- Height, width, depth and volume of all other wireless equipment associated with the facility, with all electric meters, concealment elements, telecommunications demarcation boxes, grounding equipment, power transfer switches, cut-off switches, and vertical cable runs for the connection of power and other services clearly labeled.
- The distance from the outer edge of small cell facility cabinet parallel to the outer edge of the wireless support structure for small cell facilities to be installed on a wireless support structure.
- Method of installation/connection to pole or ground, as applicable.
- Color specifications for all small cell facilities and wireless support structures and associated exposed equipment, cabinets and concealment elements.
- Electrical plans and wiring diagrams
- Footing and foundation drawings and structural analysis sealed and signed by a professional engineer in the state of Ohio.

3.1.6 Manufacturer's Specification Sheets.

- Provide the most recent specification sheets from manufacturers for all small cell facility equipment and wireless support structures proposed, including but not limited to poles, equipment cabinets, shrouds, or concealment devices, antennas, meters, radios, switches, telecommunications demarcation boxes, and grounding equipment.

3.1.7 Landscape Plans.

- Where ground-mounted small cell equipment cabinets are proposed, provide landscape plans at a scale not smaller than one inch equals ten feet, including planting details and a plant schedule indicating proposed plant species, quantities, spacing, and height/size at installation.

3.2 Required Application Materials for Wireless Support Structure and/or Small Cell Facilities Removal.

For applications involving the removal of small cell facilities and/or wireless support structures, the following materials and information shall be provided:

3.2.1 Small Cell Right-of-Way Permit application and fee as specified

The permit application forms are available through the Department of Public Works, with all associated application fees noted on the application forms.

3.2.2 Site Plan

At a scale not smaller than one inch equals twenty feet with dimensions, clearly indicating the following:

- Existing small cell facilities and/or wireless support structure locations within the right-of-way including nearest cross street intersection(s);
- For adjacent parcel(s) perpendicular to the proposed small cell facility/wireless support structure location, property ownership, including current ownership;
- All existing conditions within 50 feet of the existing small cell facilities locations to be removed, including but not limited to, buildings, utilities within the right-of-way and associated above grade structures, location of electric service and fiber optic cable, all other underground and overhead utilities, small cell structures and facilities, sidewalks/shared-use paths, back of adjacent curb/edge of pavement, driveways, street trees and plant material.

3.2.3 Remediation Plans

Site and/or structure remediation details at a scale not smaller than one inch equals five feet in accordance with the requirements of Section 4.4, and clearly indicating the following:

- Proposed remediation plan for modifications made to city-owned wireless support structures and other areas of the right-of-way associated with collocation of small cell wireless facilities and ground-mounted equipment after the removal of these facilities.
- Proposed restoration of electric and fiber optic connections after removal of small cell facilities, as applicable.



4. GENERAL DESIGN GUIDELINES

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4.1 Collocations on Existing Wireless Support Structures (Type 1 Requests)

4.1.1 Collocations Encouraged

- Except as otherwise provided in the Context Specific Guidelines herein, the collocation of wireless facilities on existing support structures (that are engineered to accommodate such facilities) is strongly encouraged.

4.1.2 Maximum Permitted Height

- Antennas, small cell facilities and any associated concealment materials shall not increase the overall height of the existing wireless support structure by more than five (5) feet.

4.1.3 Use of Existing Privately Owned Utility Poles

There are a number of existing private utility poles located within the right-of-way throughout the city. These support structures are not owned by the City of Dublin, but may be eligible for collocations of small cell facilities pending permission of the legal owner of the structures.

- Documentation Required
 - Documentation of owner's permission to collocate small cell facilities must be included with the Type 1 Request in the form of a letter or other correspondence/documentation.
- Antenna Mounting Requirements
 - Where possible, antenna shall be installed consistent with the requirements of 4.3.1. Where existing conditions preclude this mounting location, antennas shall be fully enclosed within a shroud attached as near as possible to the top of the wooden pole and on the side of the pole opposite the direction of vehicular traffic along the same side of the right-of-way.
- Wiring, Cables and Conduit Requirements
 - All wiring and cables shall be firmly secured to the support structure and enclosed within a separate rigid external conduit attached directly to the pole or offset not more than four (4) inches by mounting brackets. Conduit color shall be gray to match the required small cell facilities and enclosure color.
 - Spools and/or coils of excess fiber optic or cables or any other wires shall not be stored on the pole except completely within the approved enclosures or cabinets.
- Color
 - All small cell facilities, cabinets, shrouds, conduit, and mounting hardware proposed in conjunction with installation on an existing wooden pole shall be gray Federal Standard #26492 powder coated finish or as otherwise approved by the City Engineer.

4.1.4 Structural Capacity of Existing Support Structures

- The city will not authorize any attachments to city-owned infrastructure that negatively impacts the structural integrity of the associated infrastructure.
- The city may condition approval of the collocation on replacement or modification of the wireless support structure at the operator's cost if the city determines that replacement or modification is necessary for com-



pliance with city standards.

- A replacement or modification of the wireless support structure shall conform to all applicable design guidelines and city specifications for the type of structure being replaced.
- The city may retain ownership of a replacement wireless support structure.

4.1.5 Right to Reserve Space

- The city may reserve space for future public safety or transportation uses in the right-of-way or on a wireless support structure in a documented and approved plan in place at the time an application is filed.
 - A reservation of space shall not preclude placement of a pole or collocation of a small cell facility.
 - If replacement of the wireless support structure is necessary to accommodate the collocation of the small cell facility and the future use, the operator shall pay for and install the replacement of the wireless support structure, which must accommodate the future use.

4.2 New Wireless Support Structures and Small Cell Facilities (Type 2 Requests)

4.2.1 Maximum Permitted Height

- The maximum permitted height for private wireless support structures, antennas and associated small cell facilities shall not exceed forty (40) feet in height above established grade as measured at the base of the wireless support structure, except as provided below.
- The maximum permitted height for private wireless support structures, antennas and associated small cell facilities shall not exceed thirty-five (35) feet in height in areas meeting the following criteria:
 - The area is within 300 feet of the proposed site for a new wireless support structure in the same or connecting rights-of way, and there are no existing wireless support structures or utility poles greater than 30 feet in height above ground level;
 - The maximum permitted height for building construction in the underlying zoning district is thirty-five (35) feet in height above ground level or less.

4.2.2 Minimum Spacing Requirements

- Minimum spacing between proposed and existing privately owned wireless support structures
 - The minimum horizontal distance between a new wireless support structure and associated small cell facilities and any other existing, or permitted but unconstructed, wireless support structures and small cell facilities on the same side of the right-of-way at the time a complete application is filed with the city, irrespective of the owners/operators, shall be not less than 300 linear feet, as measured parallel to the right-of-way, unless an alternate spacing requirement is provided in the Context Specific Design Guidelines.
- Spacing between proposed wireless support structures and existing publicly owned wireless support structures
 - New wireless support structures shall be located midway between the immediately adjacent existing publicly-owned wireless support structures on either side of the proposed wireless support structure to the maximum extent possible.
- Multiple requests in violation of spacing requirements
 - If multiple requests are received to install two or more wireless support structures that would violate the

applicable spacing requirements, or to collocate two or more small cell facilities on the same wireless support structure, notwithstanding division (I) of section 4939.0313 of the Revised Code, the city may resolve conflicting requests through whatever reasonable and nondiscriminatory manner it deems appropriate.

- City proposed alternative location for wireless support structures.
The city may propose an alternate location to any proposed location of a new wireless support structure, subject to the following:
 - The alternate location is within one hundred (100) feet of the proposed location; or
 - The alternate location is within a distance that is equivalent to the width of the right-of-way in which the new wireless support structure is proposed, whichever is greater; and
 - The operator shall use the alternate location if it has the right to do so on reasonable terms and conditions and the alternate location does not impose technical limits or additional costs.
- Waiver to city directed alternate wireless support structure location or undergrounding requirements
Small cell operators may seek a waiver of the undergrounding or alternative location requirements for the placement of a new wireless support structure if the operator is unable to achieve its service objective using a small cell facility under the following circumstances:
 - From a location in the right-of-way where the prohibition does not apply;
 - In a utility easement within the right-of-way the operator has the right to access; or
 - In or on other suitable locations or structures made available by the city at reasonable rates, fees, and terms.

4.2.3 Required Setbacks

- Preferred Alignment
 - The centerline of new support structures shall be installed in alignment with existing poles where present, or with street trees along the same side of the right-of-way, unless otherwise required in the Context Specific Design Guidelines.
- Minimum Distance from Travelway
 - Equipment shall be placed so as not to impede or impair public safety or the legal use of the right-of-way by the traveling public, and in no case shall any portion of new support structure be located less than two feet from the travel way, edge line, face of curb, sidewalk, bike lane, or shared-use path.
- Minimum Distance from Existing Objects in the Right-of-Way
 - New wireless support structures shall be located a minimum of twelve (12) feet from any permanent object or existing lawful encroachment in the right-of-way to allow for access.
- Minimum Distance from Intersections and Driveway Aprons
 - Wireless support structures shall be located a minimum of twelve (12) feet from driveway aprons.
 - Wireless support structures shall be located outside of intersection sight distance triangles, whenever possible. Please refer to Intersection Sight Distance Policy:

<http://dublinohiousa.gov/engineering/engineering-permits-drawings-and-policies>

- Minimum Distance from Street Trees and Protected Trees in the Vicinity.
 - Wireless support structures shall be sited outside of the critical root zone of existing street trees and any ex-



isting protected trees having a six (6) inch or greater diameter at breast height (DBH) located in the immediate vicinity, including protected trees on private property as defined in the City of Dublin Tree Preservation Code:

<http://forestry.ohiodnr.gov/portals/forestry/pdfs/urban/dublinpreserv.pdf>

- Encroachments Prohibited
 - No portion of a wireless support structure or small cell facility cabinet or enclosure may encroach at grade or within the airspace beyond the right-of-way or over the travelway.

4.2.4 Wireless Support Structure Design Specifications

- Pole Specifications
 - All new wireless support structures shall be constructed of solid hot-dipped galvanized steel, be round in shape with a smooth pole shaft.
 - Wireless support structures incorporating pole mounted small cell facilities shall be tapered in diameter from the base to the top, with a maximum diameter of 12 inches at the base and a maximum diameter of 8 inches at the top.
 - Wireless support structures incorporating small cell facilities in an equipment cabinet within a transformer base may utilize poles tapered in diameter or poles having a consistent outside diameter.
 - All poles shall be scaled to 0.5 to 0.75 times the maximum width of the cabinet, with a ten (10) inch minimum outer pole diameter at the widest portion of tapered poles.
- Transformer Base
 - All new wireless support structures shall include a one-piece cast aluminum alloy transformer base in a breakaway design, consistent with specifications of City of Dublin Standard Drawing SL-02 or as designed by a professional engineer licensed and registered in the State of Ohio, and subject to the City Engineer's review and approval.
- Foundation
 - All new wireless support structures must be supported with a reinforced concrete foundation designed, stamped, sealed and signed by a professional engineer licensed and registered in the State of Ohio, and subject to the City Engineer's review and approval.
 - Anchor bolts must be constructed from high strength steel per City of Dublin Standard Drawing SL-04 and in a length and diameter determined, stamped, sealed and signed by a professional engineer licensed and registered in the State of Ohio, and subject to the City Engineer's review and approval.
 - All anchor bolts must be concealed from public view, with an appropriate pole boot or cover powder coated to match the pole color.
- Color
 - To ensure consistency among right-of-way infrastructure, color for all wireless support structures and bases shall be as prescribed in the Context Specific Design Guidelines, or as otherwise approved by the City Engineer.

4.3 Small Cell Facilities (All Request Types)

4.3.1 Antennas

- Maximum Size

- Each antenna shall be located entirely within a shroud enclosure of not more than six (6) cubic feet in volume.
- The diameter of the antenna or antenna enclosure should not exceed the diameter of the top of the wireless support structure pole, and to the maximum extent practical, should appear as a seamless vertical extension of the pole.
- In no case shall the maximum diameter of the shroud be wider than one and one half times the diameter of the top of the pole.
- Where maximum shroud diameter exceeds diameter of the top of the pole, the shroud shall be tapered to meet the top of the pole.
- **Mounting Location**
 - Unless otherwise required by the Context Specific Design Guidelines, all antenna shall be mounted to the top of the wireless support structure pole, aligned with the centerline of the structure.
- **Design Specifications**
 - Shape. Antennas shall be generally cylindrical in shape.
 - Enclosure. Antenna shall be completely housed within a cylindrical shroud that is capable of accepting paint to match the wireless support structure.
 - Color. To ensure consistency among right-of-way infrastructure, color for all antennas and shrouds shall match the color of the wireless support structure as prescribed in the Context Specific Design Guidelines, or as otherwise approved by the City Engineer.

4.3.2 Associated Small Cell Facilities and Equipment

- **Maximum Size**
 - Exclusive of the antenna, all wireless equipment associated with the small cell facility shall not cumulatively exceed twenty-eight (28) cubic feet in volume. The calculation of equipment volume shall not include electric meters, concealment elements, telecommunications demarcation boxes, grounding equipment, power transfer switches, cut-off switches, and vertical cable runs for the connection of power and other services.
- **Encroachments Prohibited**
 - No portion of a wireless support structure or small cell facility cabinet or enclosure may encroach at grade or within the airspace beyond the right-of-way or over the travelway.
- **Screening and Installation Location.** All small cell facilities, associated equipment and cabling shall be completely concealed from view within an enclosure, and may be installed in the following locations:
 - Within an equipment enclosure mounted to the wireless support structure;
 - Within an equipment cabinet integrated within the transformer base of a new wireless support structure; or
 - Within a ground-mounted cabinet physically independent from the wireless support structure.
- **Color**
 - To ensure consistency among right-of-way infrastructure, color for all small cell facilities and enclosures/ cabinets attached to wireless support structures, integrated within the transformer base, or ground-mounted cabinets shall match the color of the associated wireless support structure as prescribed in the Context Specific Design Guidelines, or as otherwise approved by the City Engineer.

4.3.3 Small Cell Facilities Mounted to Wireless Support Structures



- **Minimum Mounting Height**
 - All small cell facilities mounted to wireless support structures shall provide a minimum clearance of 10 feet above established grade.
- **Maximum Permitted Protrusion of Enclosure from Wireless Support Structure Pole**
 - Small cell equipment enclosures shall not protrude more than eighteen (18) inches beyond the face of the pole to the outermost portion of the enclosure.
 - Small cell equipment enclosures should be installed as flush to the wireless support structure pole as practical. In no case shall an enclosure be installed more than four inches from the wireless support structure/pole.
- **Required Enclosure Mounting Location**
 - All small cell facilities and equipment enclosures shall be mounted on the side of the pole opposite the direction of vehicular traffic of the adjacent roadway. Enclosures shall extend perpendicular from the pole and parallel to the right-of-way.
- **Required Arrangement of Multiple Small Cell Facility Cabinets**
 - All pole-mounted equipment must be installed as flush to the pole as possible. Where multiple enclosures are proposed on a wireless support structure pole, the enclosures shall be grouped as closely together as possible on the same side of the pole.
- **Design Specifications**
 - Size. Small cell equipment enclosures should be the smallest size practicable to house the necessary small cell facilities and equipment.
 - Small cell equipment enclosures shall be cylindrical or rectangular in shape, and should generally be no wider than the maximum outside diameter of the pole to which it is attached, to the maximum extent possible.
 - Attachment. The shroud enclosure shall be securely strapped to the wireless support structure pole using stainless steel banding straps. Through-bolting or use of lag bolts on publicly owned wireless support structures is prohibited. New wireless support structures may utilize mounting brackets in accordance with the maximum horizontal offset requirements. Care should be taken to integrate the mounting hardware into the enclosure design.
 - Concealment of Gap. Metal flaps or “wings” shall extend from the enclosure to the pole to conceal any gap between the enclosures and the pole. The design of the flaps shall be integrated with the design of the enclosure.
 - Owner Identification. A four (4) inch by six (6) inch (maximum) plate with the carrier’s name, location, identifying information, and emergency telephone number shall be permanently fixed to the enclosure on the side of the cabinet opposite the direction of vehicular traffic of the adjacent roadway.

4.3.4 Small Cell Facilities Cabinets Integrated within a Wireless Support Structure Transformer Base

- **Transformer Base/Cabinet Size**
 - Equipment cabinets integrated into the support structure transformer base shall have a maximum width or diameter of twenty-four (24) inches, and a maximum height of five (5) feet.
 - The top of the cabinet shall have no flat horizontal area greater than two (2) inches as measured outward from the pole to the edge of the cabinet to prevent objects from being placed on top the equipment cabinet.
- **Siting Requirements**
 - Small cell facilities cabinets within transformer bases and associated wireless support structures are prohibit-

ed to be located within sight visibility triangles. Please refer to Intersection Sight Distance Policy:

<http://dublinohiousa.gov/engineering/engineering-permits-drawings-and-policies>

- Design Specifications
 - Shape. Transformer Base/Cabinet shape shall either be tapered with a trapezoidal or truncated cone section or cylindrical in shape.
 - Transition to Pole. A decorative transition or base cover shall be installed over the equipment cabinet upper bolts to match the equipment cabinet size and color.
 - Owner Identification. A four (4) inch by six (6) inch (maximum) plate with the carrier's name, location, identifying information, and emergency telephone number shall be permanently fixed to the cabinet on the side of the cabinet opposite the direction of vehicular traffic of the adjacent roadway.
 - Attachment to Foundation. Transformer base/cabinet shall feature a breakaway design in the event of collisions.

4.3.5 Ground-Mounted Small Cell Facilities

- Siting Requirements
 - So as not to impede or impair public safety or the legal use of the right-of-way by the traveling public, in no case shall a ground-mounted small cell facility cabinet be located closer than two feet from the travel- way, edge line, face of curb, sidewalk, bike lane, or shared-use path as measured to the nearest part of the wireless support structure.
 - Ground-mounted small cell facility cabinets shall be located a minimum of twelve (12) feet from any permanent object or existing lawful encroachment in the right-of-way to allow for access.
 - Ground-mounted small cell facility cabinets shall not be sited in conflict with required intersection sight distance triangles. Please refer to Intersection Sight Distance Policy:

<http://dublinohiousa.gov/engineering/engineering-permits-drawings-and-policies>

- Ground-mounted small cell facility cabinet locations shall be located a minimum of twelve (12) feet from driveway aprons as measured parallel to the right-of-way.
- Design Specifications
 - Attachment to Foundation/Slab: Cabinets must be secured to a concrete foundation or slab with a break-away design in the event of collisions.
 - Owner Identification. A four (4) inch by six (6) inch (maximum) plate with the Carrier's name, location, identifying information, and emergency telephone number shall be permanently fixed to the cabinet.
- Additional Landscape Screening
 - Screening of small cell facility cabinets with evergreen plant material is required, consistent with the landscape character of the surrounding area.
 - All landscaping proposed within the right-of-way shall be reviewed for appropriateness of the proposed planting plan and plant specifications by the City of Dublin Landscape Architect, Department of Parks and Recreation.

4.3.6 Power Supply and Fiber Optic Connections (All Request Types)

- Independent Power and Communication Sources Required
 - Small cell facilities located on city-owned wireless support structures may not use the same power or communication source providing power and/or communication for the existing facility original to the purposes of the support structure. The independent power source must be contained within a separate conduit inside



the support structure. The applicant shall coordinate, establish, maintain and pay for all power and communication connections with private utilities.

- **Utility Undergrounding Required**
 - Where an Underground Utility District is present, all service lines from the power source to the small cell facilities and wireless support structure shall be located underground.
- **Wiring, Cables and Conduit Requirements**
 - All wiring and cables must be housed within the steel support structure or pole and extended vertically within a flexible conduit.
 - Spools and/or coils of excess fiber optic or coaxial cables or any other wires shall not be stored on the pole except completely within the approved enclosures or cabinets.
 - Exposed wires, cables, connections and external conduit are prohibited, except as specified in the Context Specific Design Guidelines based on the characteristics of the wireless support structure.
 - Underground conduit shall meet the specifications of City of Dublin Standard Drawing SL-05.

4.3.7 Other Small Cell Facilities Prohibitions

- **Lighting**
 - Lighting associated with small cell facilities is prohibited. Any internal lights associated with electronic equipment shall be shielded from public view.
- **Signage**
 - Signage is prohibited on all small cell facilities and wireless support structures, including stickers, logos, text, and other non-essential graphics and information other than the owner identification unless required by FCC.
- **Prohibited Wireless Facilities**
 - Microwave, macro towers, and other wireless backhaul facilities are not permitted within the right-of-way.

4.4 Removal of Small Cell Facilities and Wireless Support Structures (Type 3 Requests)

4.4.1 Remediation of City-Owned Support Structures

- All City-owned support structures must be returned to an equal or better state, upon removal of small cell facilities. All mounting hardware and equipment must be removed from the site. All holes left in the pole must be neatly sealed from any moisture intrusion and painted to match the pole.

4.4.2 Remediation of Sites

- Applicant shall restore all areas of the right-of-way impacted by the small cell facilities and/or wireless support structure installation and/or removal to equal or better condition.

5. CONTEXT SPECIFIC DESIGN GUIDELINES



5. CONTEXT SPECIFIC DESIGN GUIDELINES

The design and character of the right-of-way in the City of Dublin is defined by a variety of interconnected factors—the most prevalent are the functional classification of the roadway within the right-of-way and the predominant land uses along the right-of-way. These variables influence the amount of space available in the right-of-way outside of the travel lanes for elements such as sidewalks and shared-use paths, street trees, street lights and utility infrastructure, as well as the aesthetic qualities of these elements.

The unique environmental aesthetics of each area, as well as the characteristics of the right-of-way itself must be taken into consideration in the deployment of small cell facilities and wireless support structures. These facilities must blend seamlessly into the surrounding context to the maximum extent possible.

For the purposes of outlining context specific small cell facilities and wireless support structures design guidelines, five districts have been defined based on the unique existing and desired character of the rights-of-way within these areas. These districts are:

- Historic Dublin
- The Bridge Street District
- Residential Districts
- The West Innovation District
- Other Business Neighborhoods and Commercial Districts

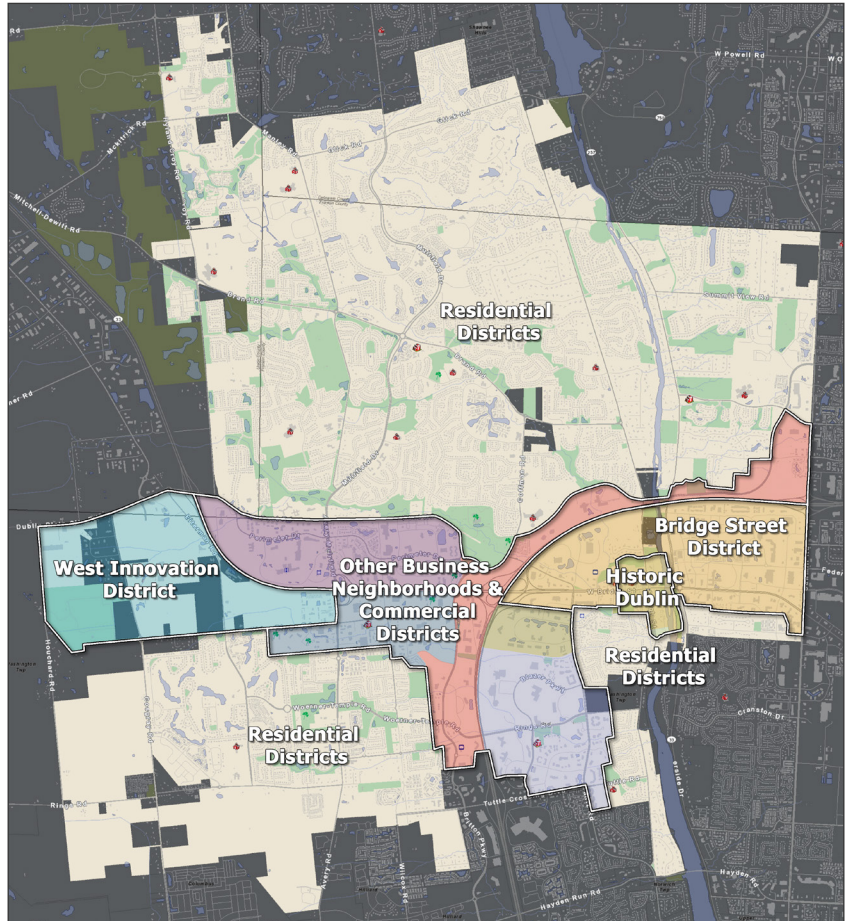
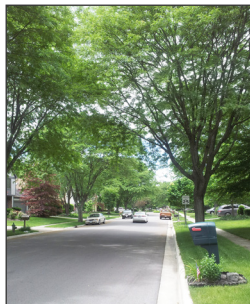


Figure 5A--Context Specific Design Guidelines Districts



The boundaries of each district are depicted in Figure 5A—Context Specific Design Guidelines Districts. In addition to the General Design Guidelines described in Chapter 4, the following Context Specific Guidelines must be met. Where conflicts exist, the Context Specific Guideline shall prevail over the General Design Guideline.

5.1 Historic Dublin

5.1.1 Thoroughfare Preferences for Installation of Small Cell Facilities and Wireless Support Structures

- Side Streets, Lanes and Alleys - Preferred
 - Historic Dublin is characterized by a pattern of small blocks accessed by a number of narrow streets and lanes that function as service streets or alleys at the rear of the lots and where a variety of existing above grade infrastructure is present.
 - Preferred rights-of-way for siting of small cell facilities and wireless support structures include Blacksmith Lane, Mill Lane, Darby Street, Wing Hill, Spring Hill, Eberly Hill, Pinneyhill Lane, and John Wright Lane, except for segments of these streets which extend to the east of South and North Blacksmith Lane. The preferred streets are highlighted in yellow in Figure 5.1A.
- Bridge Street, High Street, Riverview Street and Franklin Street Corridors – Discouraged
 - These corridors are highlighted in orange in Figure 5.1A, and are character defining elements of Historic Dublin. These streets are the 'front doors' to businesses and residences and possess a strong pedestrian environment that should be free of visual clutter along the streetscapes to the maximum extent possible.
 - Existing pedestrian-scale decorative street lights and poles fixtures cannot accommodate new installations and are not suitable for replacement.
- Bridge Street and High Street Intersection - Strongly Discouraged
 - The intersection of Bridge Street and High Street is the historic core of the City of Dublin. As such, the aesthetic character of these streets through Historic Dublin has been carefully designed and regulated to maintain the high quality image of Historic Dublin.
 - The area available within the right-of-way for infrastructure is very limited, and where street lights and other vertical infrastructure is present, it is designed at an appropriate scale and aesthetic quality fitting to this unique area.

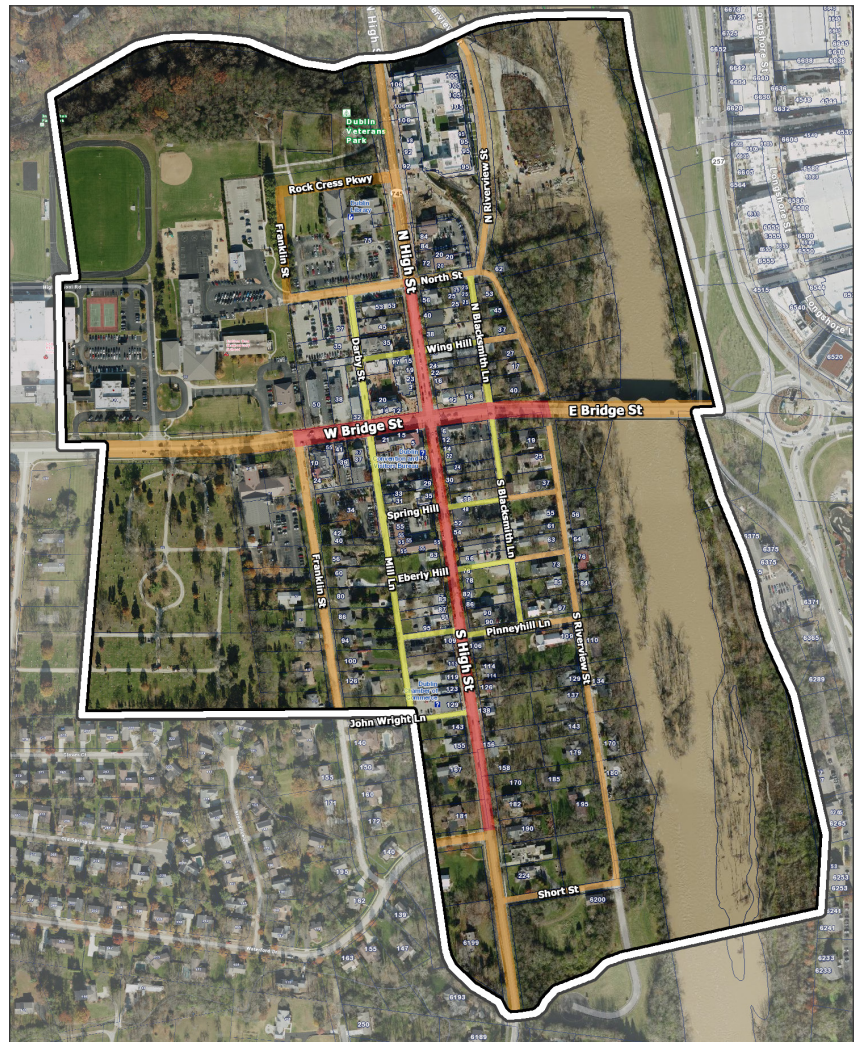


Figure 5.1A--Historic Dublin Boundary and Small Cell Facilities
Siting Preferences Map



- The Bridge and High Street intersection boundary is defined as the right-of-way of these streets bound by Franklin Street to the west, North and South Riverview to the east, North Street to the North and Waterford Drive to the south, as highlighted in red in Figure 5.1A.

5.1.2 Installation Type Preferences

- Type 1 Requests Preferred
 - The most preferred installation type in Historic Dublin is a collocation of an antenna and associated small cell facilities on an existing privately owned utility pole within the service street rights-of-way listed in Section 5.1.1. An example of this type of wireless support structure and an illustration of a Type 1 collocation to this existing support structure is depicted in Figure 5.1B.
 - The second most preferred installation type in Historic Dublin is a collocation of an antenna on an existing privately owned utility pole with small cell facilities enclosed in a ground-mounted cabinet within the service street rights-of-way listed in Section 5.1.1.
 - Existing decorative light poles in Historic Dublin as depicted in Figure 5.1C are ineligible for Type 1 collocations of small cell facilities due to the design aesthetics, height and structural capacity of these fixtures. Any modifications to the existing decorative street lights and poles will be inconsistent with the design of the existing fixtures.
- Type 2 Requests Strongly Discouraged
 - The least preferred installation type in the Historic District is a new wireless support structure with small cell facilities within the highly visible 'front door' rights-of-way of Historic Dublin, including but not limited to High Street, Bridge Street, North and South Riverview Street, and Franklin Street.
 - Type 2 Requests for replacement of existing pedestrian-scaled decorative light poles, bases, or luminaires to accommodate small cell facilities will not be permitted as any replacement will be inconsistent with the design of the existing fixtures.



Figure 5.1B--Illustrative Type 1 Collocation Request on Existing Private Wooden Utility Pole (at right)



Figure 5.1C--Decorative Pedestrian-Scale Street Lights in Historic Dublin

5.1.3 Type 1 Installation Details and Specifications

- Use of Existing Decorative Pedestrian-Scale Street Lights
 - Not permitted.
- Use of Privately Owned Utility Poles

- Refer to General Design Guidelines Section 4.1.3

5.1.4 Type 2 Installations Details and Specifications

- Siting of New Wireless Support Structures
 - New wireless support structures should be sited in alignment with other existing poles on the same side of the right-of-way, and aligned as close as practicable with adjacent side property lines, or with shared wall locations in adjacent multi-tenant structures.
 - In no case shall a wireless support structure be sited directly in front of an adjacent building entrance or storefront.
 - Special care should be taken to avoid siting wireless support structures in conflict with business signs.
- Wireless Support Structure Height
 - New wireless support structures and antennas should be no taller than functionally necessary, and coordinate with the height of existing poles in the same right-of-way to the maximum extent practicable. In no case shall the overall height exceed the height requirements of Section 4.2.1.
- Color
 - Color for new wireless support structures, antenna shrouds, pole mounted equipment, and equipment cabinets within a transformer base shall match the color of the decorative light poles in the Historic District—black powder coated finish (Federal Standard #27038), or as otherwise approved by the City Engineer.

5.1.5 Ground-mounted Small Cell Equipment Details and Specifications

- Maximum Permitted Height of Ground-mounted Equipment Cabinets
 - The maximum permitted height for ground-mounted equipment cabinets shall not exceed three (3) feet as measured from established grade at the foundation/pad.
- Siting of Ground-mounted Small Cell Equipment Cabinets
 - Ground-mounted equipment cabinets are not permitted within the tree lawn/pedestrian furnishing zone of any right-of-way in Historic Dublin.
- Color
 - Color for all ground-mounted equipment cabinets shall be gray Federal Standard #26492 powder coated finish or as otherwise approved by the City Engineer.
- Additional Landscape Screening
 - Landscape screening of ground mounted equipment cabinets shall be as required under Section 4.3.5.



5.2 Bridge Street District (excluding Historic Dublin, please refer to Section 5.1)

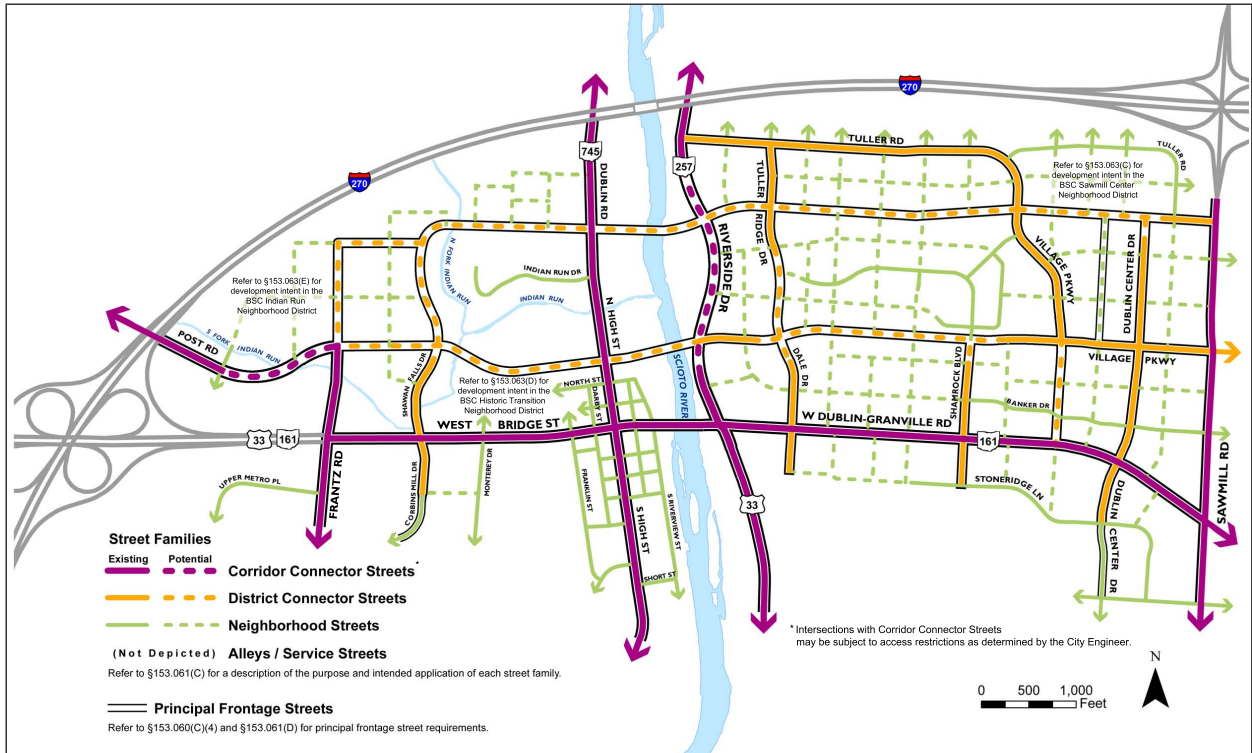


Figure 5.2A--Bridge Street District Street Network Map

5.2.1 Thoroughfare Preferences for Installation of Small Cell Facilities and Wireless Support Structures

- Corridor Connector and District Connector Streets - Preferred
 - In the mixed-use context of the Bridge Street District, Corridor Connector and District Connector rights-of-way are typically of a greater width than Neighborhood Streets, and have greater potential to accommodate small cell facilities and wireless support structures. Corridor Connector and District Connector Streets are designated in purple and orange respectively in Figure 5.2A
 - The rights-of-way of these street types generally include existing street lights and other infrastructure.

5.2.2 Installation Type Preferences - New BSD Streetscapes

- Type 2 Requests Preferred
 - The most preferred installation type in newly constructed streetscapes within the Bridge Street District are new, free-standing wireless support structures with small cell facilities enclosed in an equipment cabinet integrated within the transformer base or within a pole mounted enclosure. An illustration of a new wireless support structure with equipment integrated within the base is depicted in Figure 5.2B.
- Type 1 Requests Discouraged
 - In newly constructed BSD streetscapes where space is available at the edge of the right-of-way adjacent to open space, the incorporation of new wireless support structures and small cell facilities and/or collocations to existing wireless support structures may be possible, but shall not be permitted within parks, greenways or other designated open space types approved under §153.064 of the Bridge Street District Code. Figure

5.2C illustrates this type of installation.

- The least preferred installation type in the Bridge Street District are collocations on existing post top street lights, due to the design aesthetics and structural capacity of these fixtures. Any modifications to the existing decorative street lights and poles will be inconsistent with the design of the existing fixtures.
- Ground-mounted Small Cell Facilities Cabinets
 - Ground-mounted small cell facilities cabinets are strongly discouraged from placement in newly created streetscapes within the Bridge Street District. These streetscapes are highly pedestrian oriented with predominantly hardscaped rights-of-way, and no ground mounted utility enclosures within the pedestrian zone or planting/site furnishing zone of the streetscape. The addition of small cell facilities cabinets within these landscape beds will be detrimental to the desired streetscape aesthetic of the Bridge Street District and are strongly discouraged.

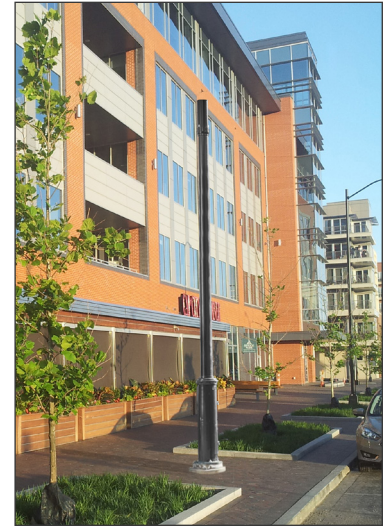


Figure 5.2B--Illustration of Type 2 New Wireless Support Structure Request with Small Cell Equipment within Transformer Base (at right)

5.2.3 Installation Type Preferences - Existing BSD Streetscapes

- Type 1 Requests Preferred
 - The most preferred installation type in existing/unimproved streets and streetscapes that are not associated with a new Bridge Street street type are antenna collocations on existing street light poles or privately owned utility poles and small cell facilities within cabinets attached to the pole or in ground-mounted cabinets within the right-of-way.
- Type 2 Requests Discouraged
 - Based on the fairly wide availability of collocation options to city light poles and private utility poles in the existing streetscapes of the Bridge Street District, the least preferred installation type are new wireless support structures with small cell facilities.



Figure 5.2C--Illustration of Type 1 Collocation with Ground-mounted Small Cell Equipment along Open Space within the Right-of-Way.



5.2.4 Type 1 Installation Details and Specifications

- Post Top Street Lights - New Streetscapes
 - Existing city-owned street lights with luminaires centered on the top of the pole are not engineered to support wireless facilities. Request for collocations to these street lights will not be permitted. An example of this street light is depicted in Figure 5.2D.
- Bracket Arm and Standard Street Lights - New and Existing Streetscapes
 - Refer to General Design Guidelines.
 - Color of all small cell facilities shrouds, enclosures and cabinets shall match color of existing bracket arm street light poles--powder coated black to meet Federal Standard #595-B and conform to Color #27038 or as otherwise approved by the City Engineer.
- Use of Privately Owned Utility Poles
 - Refer to General Design Guidelines Section 4.1.3.



Figure 5.2D--Decorative Post Top Street Light in the Bridge Street District

5.2.5 Type 2 Installations Details and Specifications - New and Existing Streetscapes

- Siting of New Wireless Support Structures
 - Wireless support structures should only be sited within the planting/site furnishing zone of the right-of-way, and in no case shall these elements be sited in conflict with minimum clear pedestrian realm width requirements.
 - New wireless support structures should be sited as close as practicable in alignment with adjacent side or rear property lines perpendicular to the right-of-way, or with shared wall locations in adjacent multi-tenant structures.
 - In no case shall a wireless support structure be sited directly in front of an adjacent building entrance or storefront.
 - Special care should be taken to avoid siting wireless support structures in conflict with building signs.
- Color
 - Color for new wireless support structures, antenna shrouds, pole and ground mounted equipment, and equipment cabinets within a transformer base shall be powder coated black to meet Federal Standard #595-B and conform to Color #27038 or as otherwise approved by the City Engineer.

5.2.6 Ground-mounted Small Cell Equipment Details and Specifications - New and Existing Streetscapes

- Maximum Permitted Height of Ground-mounted Equipment Cabinets
 - The maximum permitted height for ground-mounted equipment cabinets shall not exceed four (4) feet as measured from established grade at the foundation/pad.
- Siting of Ground-mounted Small Cell Equipment Cabinets
 - Ground mounted equipment cabinets may only be sited within areas of the right-of-way where required setbacks from the travelway and sidewalks and multi-use paths can be met as outlined in Section 4.3.5.
 - Ground-mounted equipment cabinets will not be supported within the planting zone/street furnishing zones of new Bridge Street District streetscapes, as described in Section 5.2.1.
 - Ground-mounted equipment cabinets may be supported within new Bridge Street District streetscapes which

5. CONTEXT SPECIFIC DESIGN GUIDELINES

provide sufficient open space within the right-of-way as described in Section 5.2.2 and illustrated in Figure 5.2C.

- Color
 - Color for all ground-mounted equipment cabinets shall gray Federal Standard #26492 powder coated finish or as otherwise approved by the City Engineer.
- Additional Landscape Screening
 - Landscape screening of ground-mounted equipment cabinets shall be as required under Section 4.3.5.



5.3 Residential Districts (as outlined in Figure 5A)

5.3.1 Thoroughfare Preferences for Installation of Small Cell Facilities and Wireless Support Structures

- Arterial and Collector Streets - Preferred
 - Arterial and Collector Streets are the preferred location for small cell facilities and wireless support structures, except in locations adjacent to residences which front onto Arterial or Collector streets. To the maximum extent possible, proposed small cell facilities and wireless support structures should only be sited in areas of these rights-of-way where residences do not face the right-of-way or are accessed from Arterial or Collector Street rights-of-way.
- Local Streets - Strongly Discouraged
 - Street lights and other potential support structures are typically not present within the rights-of-way of local residential streets. The addition of small cell facilities and wireless support structures in front of residences would be detrimental to the aesthetic character of the neighborhood, particularly in areas where no other similar infrastructure exists within the rights-of-way.

<http://dublinohiousa.gov/developer-tools/thoroughfare-plan>

5.3.2 Installation Type Preferences

- Type 1 Requests Preferred
 - The most preferred installation type in residential districts are collocations of an antenna and associated small cell facilities on existing street light poles or privately owned utility poles within the right-of-way.
 - The second most preferred installation type in residential districts is a collocation of an antenna on existing street light poles or existing privately owned utility pole with small cell facilities enclosed in a ground mounted cabinet within the right-of-way.
- Type 2 Requests Strongly Discouraged
 - The least preferred installation type in residential districts are new wireless support structures with small cell facilities.

5.3.3 Type 1 Installation Details and Specifications

- Use of Privately Owned Utility Poles
 - Refer to General Design Guidelines Section 4.1.3

5.3.4 Type 2 Installations Details and Specifications

- Siting of New Wireless Support Structures
 - New wireless support structures should be sited as close as practicable in alignment with adjacent side or rear property lines perpendicular to the right-of-way, or with shared wall locations in adjacent multi-tenant structures such as

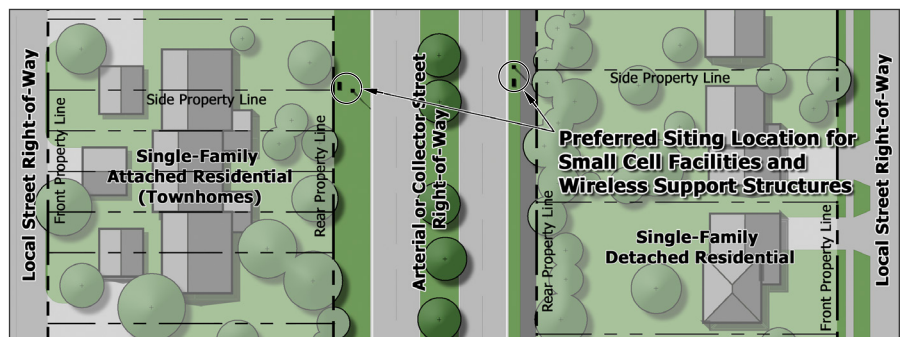


Figure 5.3A--Preferred Siting Location Diagram for Small Cell Facilities in Residential Areas

townhomes or condominiums.

- In no case shall a new wireless support structure be sited in conflict with neighborhood identification signs and entry features.

- Color

- Color for new wireless support structures, antenna shrouds, pole mounted equipment, and equipment cabinets within a transformer base shall match the color of the existing street light poles in the area—Federal Standard #595-C, Color 20040 powder coated finish to a gloss of 35%, or as otherwise approved by the City Engineer.

5.3.5 Ground-mounted Small Cell Equipment Details and Specifications

- Maximum Permitted Height of Ground-mounted Equipment Cabinets

- The maximum permitted height for ground-mounted equipment cabinets shall not exceed four (4) feet as measured from established grade at the foundation/pad to the top of the cabinet.

- Siting of Ground-mounted Small Cell Equipment Cabinets

- Ground-mounted equipment cabinets may only be sited within tree lawns where required setbacks from the travelway and sidewalks and multi-use paths can be met.

- Color

- Color for all ground-mounted equipment cabinets shall match the existing or proposed wireless support structures powder coated Federal Standard #595-C, Color 20040, or as otherwise approved by the City Engineer.

- Additional Landscape Screening

- Landscape screening of ground-mounted equipment cabinets shall be as required under Section 4.3.5.



5.4 West Innovation District

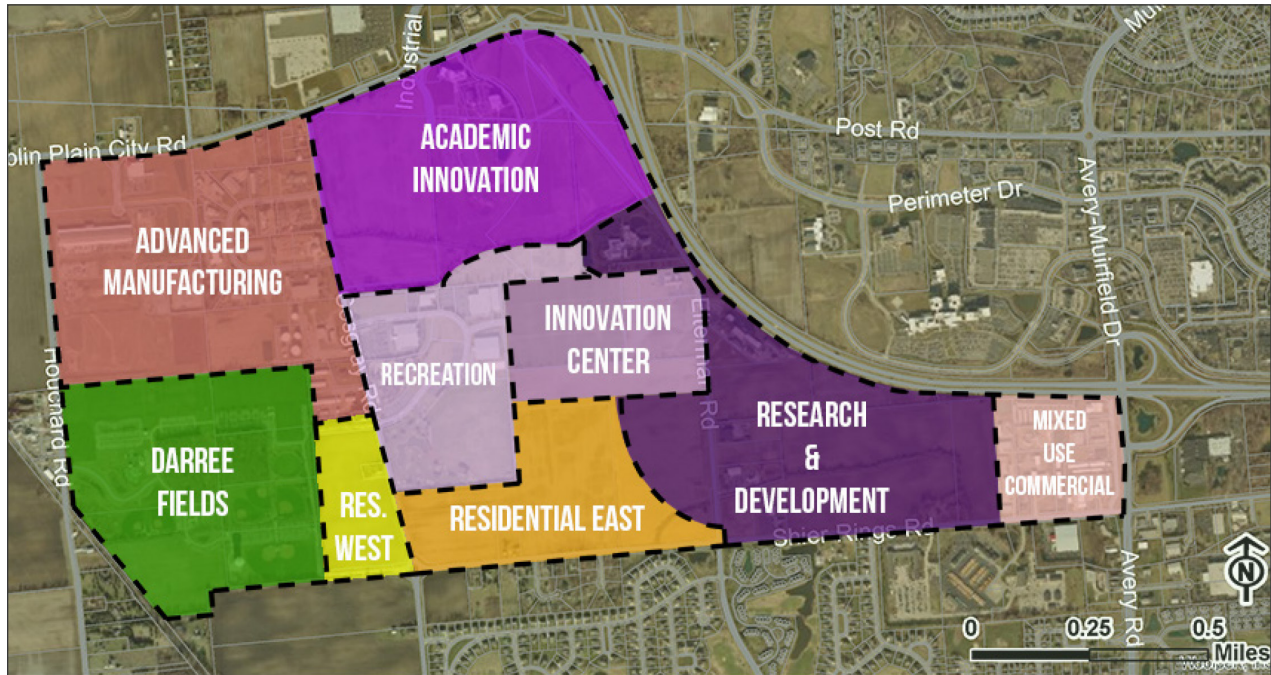


Figure 5.4A--West Innovation District Sub-District Plan

5.4.1 Thoroughfare Preferences for Installation of Small Cell Facilities and Wireless Support Structures

- Arterial and Collector Streets - Preferred
 - The West Innovation District is predominantly served directly by existing and planned Arterial and Collector Streets. These rights-of-way are the preferred location for small cell facilities and wireless support structures. While there are a limited number of Local Streets in these areas that are also supported for locations for small cell facilities and wireless support structures, Arterial and Collector Street rights-of-way widths generally afford more space in which to site these elements.

<http://dublinohiousa.gov/developer-tools/thoroughfare-plan>

5.4.2 Installation Type Preferences

- Type 2 Requests Preferred
 - The most preferred installation type in the West Innovation District are new, free-standing wireless support structures with small cell facilities enclosed either in an equipment cabinet integrated within the transformer base or within ground-mounted equipment cabinets. As the West Innovation District builds out over time and new thoroughfares are constructed, new wireless support structure locations should be planned and are preferred over retrofitted collocations on existing wireless support structures.
- Location Preference for Ground-mounted Small Cell Facility Cabinets
 - The most preferred siting locations for ground-mounted small cell facilities cabinets in the West Innovation District are the rights-of-way in the following Sub Districts based on the proposed land uses, development patterns, and naturalized streetscape planting design: Advanced Manufacturing, Recreation, Residential West

and East.

- The least preferred siting locations are the rights-of-way within the Academic Innovation, Innovation Center, Research & Development, and Mixed-Use Commercial Sub Districts, as these areas propose more urbanized development patterns with pedestrian-oriented 'main street' streetscapes with less available space for ground-mounted cabinets. Small cell facilities should be enclosed within cabinets integrated with the transformer base to the maximum extent possible in these locations.

5.4.3 Type 1 Installation Details and Specifications

- Use of Standard Street Light Poles
 - Refer to General Design Guidelines.
 - Color of all small cell facilities shrouds, enclosures and cabinets shall match the color of existing standard street light poles--Federal Standard #595-C, Color 20040 powder coated finish to a gloss of 35% as approved by the City Engineer.
- Use of Privately Owned Utility Poles
 - Refer to General Design Guidelines Section 4.1.3.

5.4.4 Type 2 Installations Details and Specifications

- Siting of New Wireless Support Structures
 - New wireless support structures should be sited midway between existing wireless support structures on either side, and as close as practicable in alignment with adjacent side or rear property lines perpendicular to the right-of-way.
- Color
 - Color for new wireless support structures, antenna shrouds, pole mounted equipment, and equipment cabinets within a transformer base shall match the color of the existing street light poles in the area—Federal Standard #595-C, Color 20040 powder coated finish to a gloss of 35%, or as otherwise approved by the City Engineer.

5.4.5 Ground-mounted Small Cell Equipment Details and Specifications

- Maximum Permitted Height of Ground-mounted Equipment Cabinets
 - The maximum permitted height for ground-mounted equipment cabinets shall not exceed four (4) feet as measured from established grade at the foundation/pad to the top of the cabinet.
- Siting of Ground-mounted Small Cell Equipment Cabinets
 - Ground mounted equipment cabinets may only be sited within areas of the right-of-way where required setbacks from the travelway and sidewalks and multi-use paths can be met.
- Color
 - Color for all ground-mounted equipment cabinets shall be gray Federal Standard #26492 powder coated finish or as otherwise approved by the City Engineer.
- Additional Landscape Screening
 - Landscape screening of ground-mounted equipment cabinets shall be as required under Section 4.3.5.



5.5 Other Business Neighborhoods/Commercially Zoned Districts

5.5.1 Thoroughfare Preferences for Installation of Small Cell Facilities and Wireless Support Structures

- Arterial and Collector Streets - Preferred
 - Business Neighborhoods and commercially zoned districts are predominantly served directly by Arterial and Collector Streets. These rights-of-way are the preferred location for small cell facilities and wireless support structures. While there are a limited number of Local Streets in these areas that are also supported for locations for small cell facilities and wireless support structures, Arterial and Collector Street rights-of-way widths generally afford more space in which to site these elements.

<http://dublinohiousa.gov/developer-tools/thoroughfare-plan>

5.5.2 Installation Type Preferences

- Type 1 Requests Preferred
 - The most preferred installation type in commercially zoned districts are collocations of an antenna and associated small cell facilities on existing street light poles or privately owned utility poles within the right-of-way.
 - The second most preferred installation type in commercially zoned districts is a collocation of an antenna on existing street light poles or existing privately owned utility pole with small cell facilities enclosed in a ground-mounted cabinet within the right-of-way. Figure 5.5A illustrates an example of this type of installation.
- Type 2 Requests Discouraged
 - Based on the fairly wide availability of collocation options to city light poles throughout these areas, the least preferred installation type in commercially zoned districts are new wireless support structures with small cell facilities.

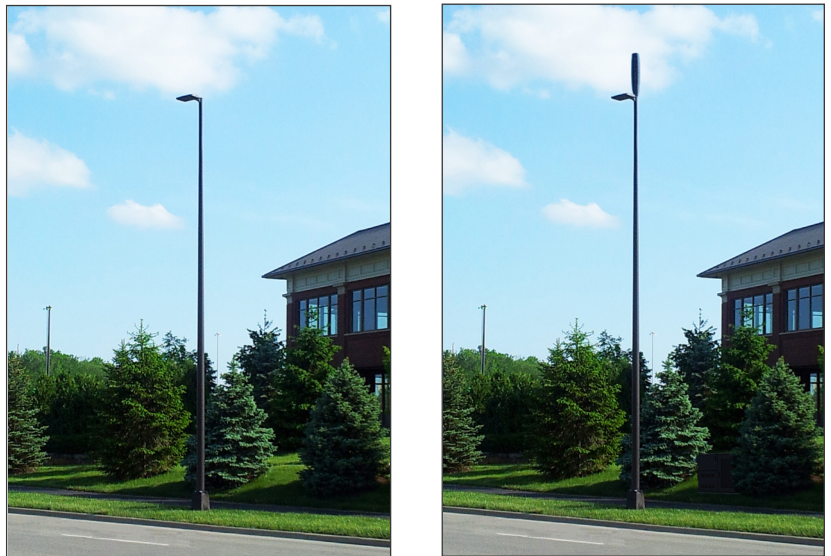


Figure 5.5A--Illustration of Collocation on Existing Standard Light Pole with Ground-mounted Facilities Cabinet Integrated into Existing Landscaping

5.5.3 Type 1 Installation Details and Specifications

- Use of Standard Street Light Poles
 - Refer to General Design Guidelines
- Color

- ☐ Color for antenna shrouds and pole mounted equipment enclosures shall match the color of the existing street light poles in the area—Federal Standard #595-C, Color 20040 powder coated finish to a gloss of 35%, or as otherwise approved by the City Engineer.
- Use of Privately Owned Utility Poles
 - ☐ Refer to General Design Guidelines Section 4.1.3

5.5.4 Type 2 Installations Details and Specifications

- Siting of New Wireless Support Structures
 - ☐ New wireless support structures should be sited as close as practicable in alignment with adjacent side or rear property lines perpendicular to the right-of-way.
- Color
 - ☐ Color for new wireless support structures, antenna shrouds, pole mounted equipment, and equipment cabinets within a transformer base shall match the color of the existing street light poles in the area—Federal Standard #595-C, Color 20040 powder coated finish to a gloss of 35%, or as otherwise approved by the City Engineer.


5.5.5 Ground-mounted Small Cell Equipment Details and Specifications

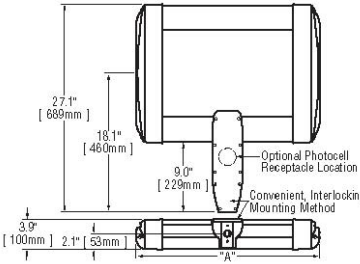
- Maximum Permitted Height of Ground-mounted Equipment Cabinets
 - ☐ The maximum permitted height for ground-mounted equipment cabinets shall not exceed four (4) feet as measured from established grade at the foundation/pad.
- Siting of Ground-mounted Small Cell Equipment Cabinets
 - ☐ Ground-mounted equipment cabinets may only be sited within areas of the right-of-way where required setbacks from the travelway and sidewalks and multi-use paths can be met.
- Color
 - ☐ Color for all ground mounted equipment cabinets shall be gray Federal Standard #26492 powder coated finish or as otherwise approved by the City Engineer.
- Additional Landscape Screening
 - ☐ Landscape screening of ground-mounted equipment cabinets shall be as required under Section 4.3.5.



6. STANDARD DRAWINGS AND SPECIFICATIONS

6.1 Cree LED Luminaire--SL-01





# of LEDs	Dim. "A"
20	12.08"
40	12.08"
60	14.08"
80	16.08"
100	18.08"
120	20.08"
140	22.08"
160	24.08"
180	26.08"
200	28.08"
220	30.08"
240	32.08"

LIGHTING DESIGN CRITERIA
 MIN = 0.4 fc
 AVG/MIN RATIO = 3:1
 MAX/MIN RATIO = 6:1
 CROSSWALK AREA = 1.1-1.3 fc

GENERAL DESCRIPTION - LIGHT EMITTING DIODE (LED), TYPE II, III, IV OR V CUTOFF (AS SPECIFIED ON THE CONSTRUCTION DRAWINGS), ONE-PIECE EXTRUDED ARM. OPERATING VOLTAGE SHALL BE ** VOLTS, SINGLE PHASE.

** VOLTAGE REQUIREMENTS ARE TO BE SPECIFIED ON PLANS.

DISTRIBUTION - IES NEMA TYPE II, III, IV OR V CUTOFF.

APPROVED MANUFACTURER

- Cree LED: ARE-EDG-2M-DA-##-D-**-BZ-525-40K
- Cree LED: ARE-EDG-3M-DA-##-D-**-BZ-525-40K
- Cree LED: ARE-EDG-4M-DA-##-D-**-BZ-525-40K
- Cree LED: ARE-EDG-5M-DA-##-D-**-BZ-525-40K

NUMBER OF LED'S TO BE SPECIFIED ON PLANS.
 ** VOLTAGE REQUIREMENTS ARE TO BE SPECIFIED ON PLANS.

CABLE - PROVIDE #10 XHHW, STRANDED COPPER 600V, 90 DEGREES CELSIUS CONDUCTORS. WIRE TO LUMINAIRE. SECURE TO LUMINAIRE ARM WITH CABLE GRIP PROVIDED WITH LUMINAIRE. PROVIDE ADEQUATE LENGTH TO EXTEND MIN. 2 FEET OUT OF HAND HOLE.

EXECUTION - ALL LUMINAIRES SHALL BE PLUMB AND LEVEL. ALL LAMPS SHALL BE OPERATIONAL PRIOR TO INSPECTION. ALL SURFACES SHALL BE CLEANED OF DIRT, DEBRIS, ETC. FREE OF SCRATCHES, DENTS, ETC.


METHOD OF MEASUREMENT - SEE ODOT SPECIFICATIONS SECTION 625.

BASIS OF PAYMENT - SEE ODOT SPECIFICATIONS SECTION 625.

Date: 5/1/2014

STANDARD DRAWING

LUMINAIRE

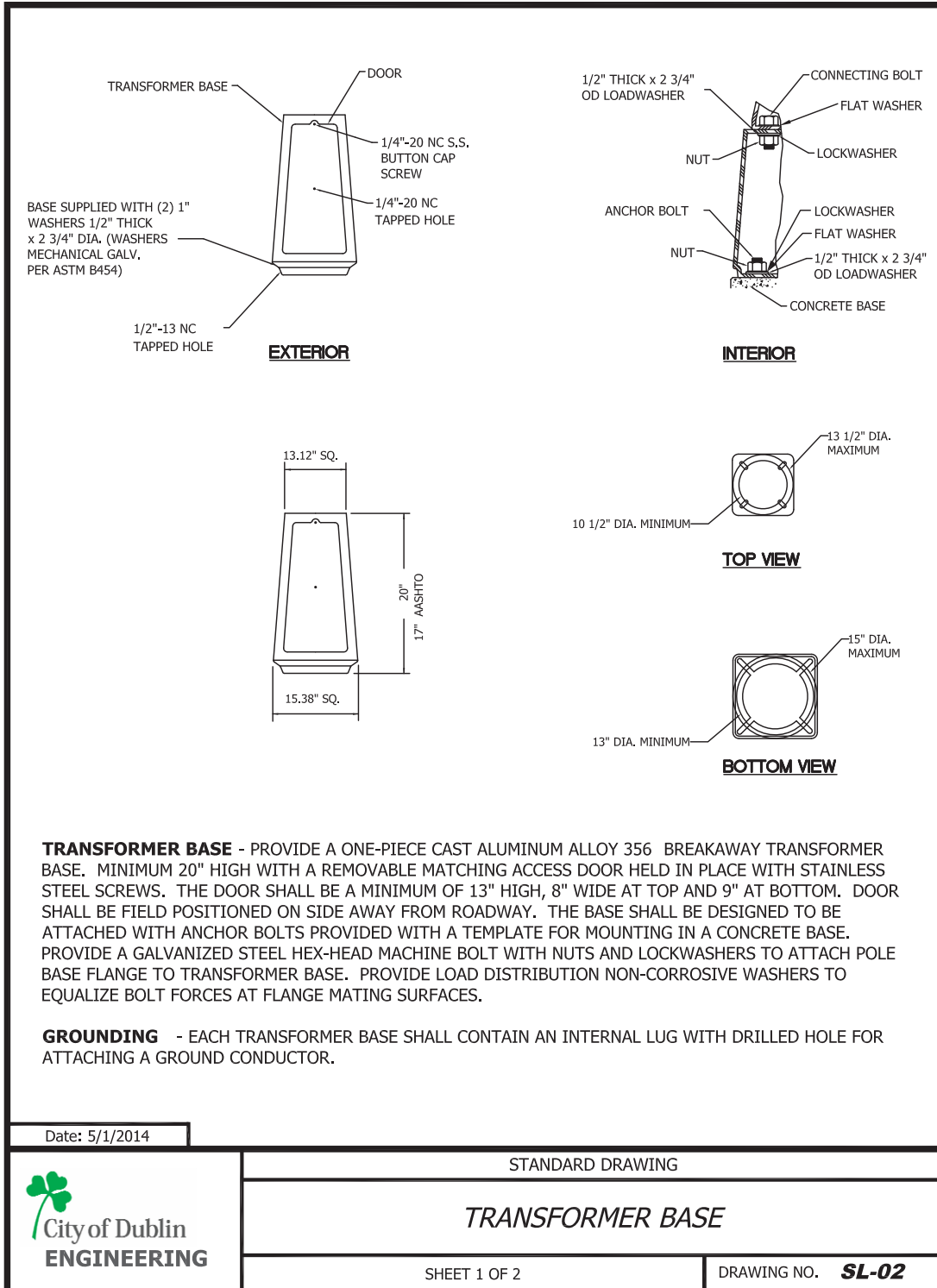


SHEET 1 OF 1

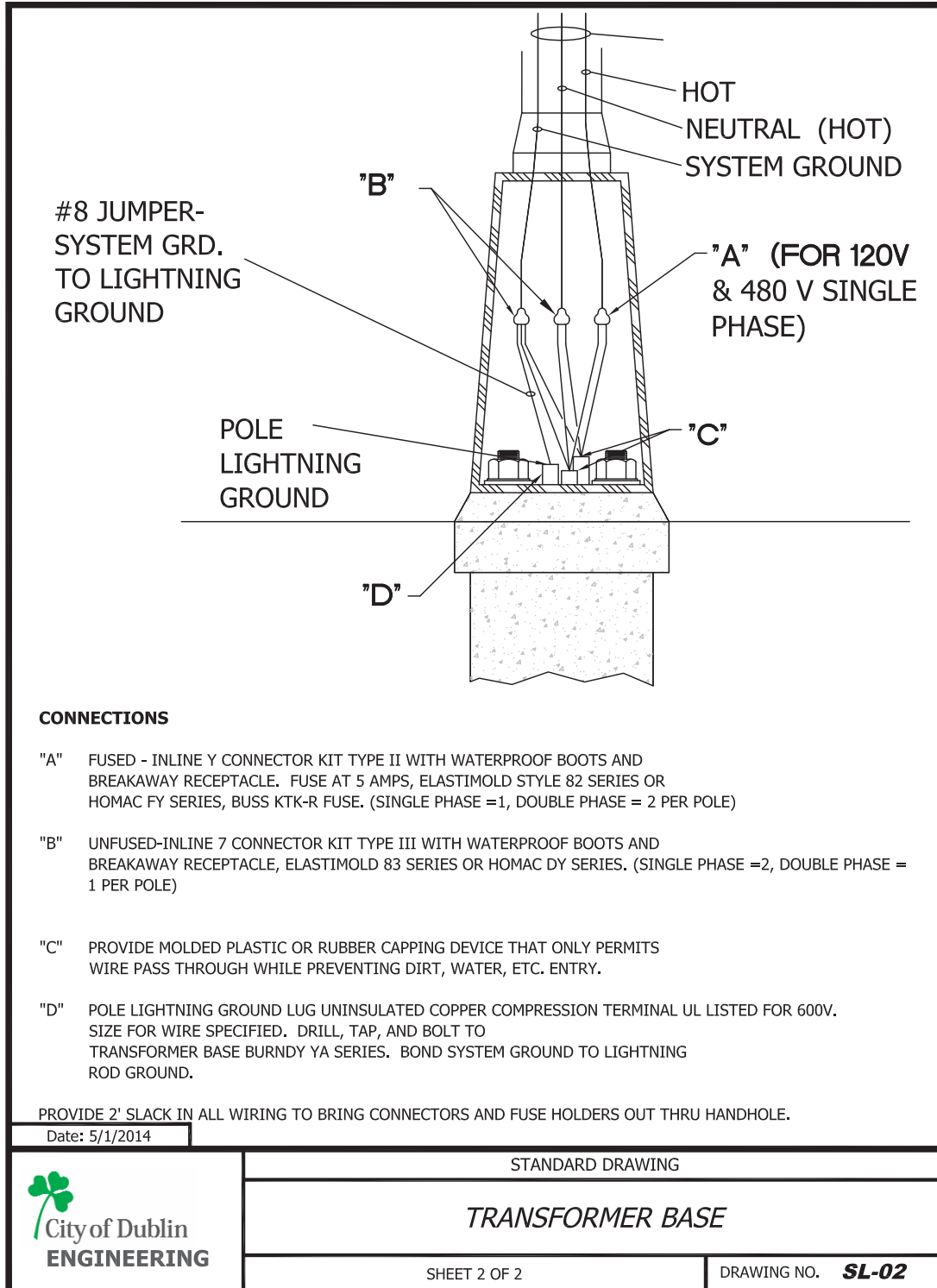
DRAWING NO. **SL-01**



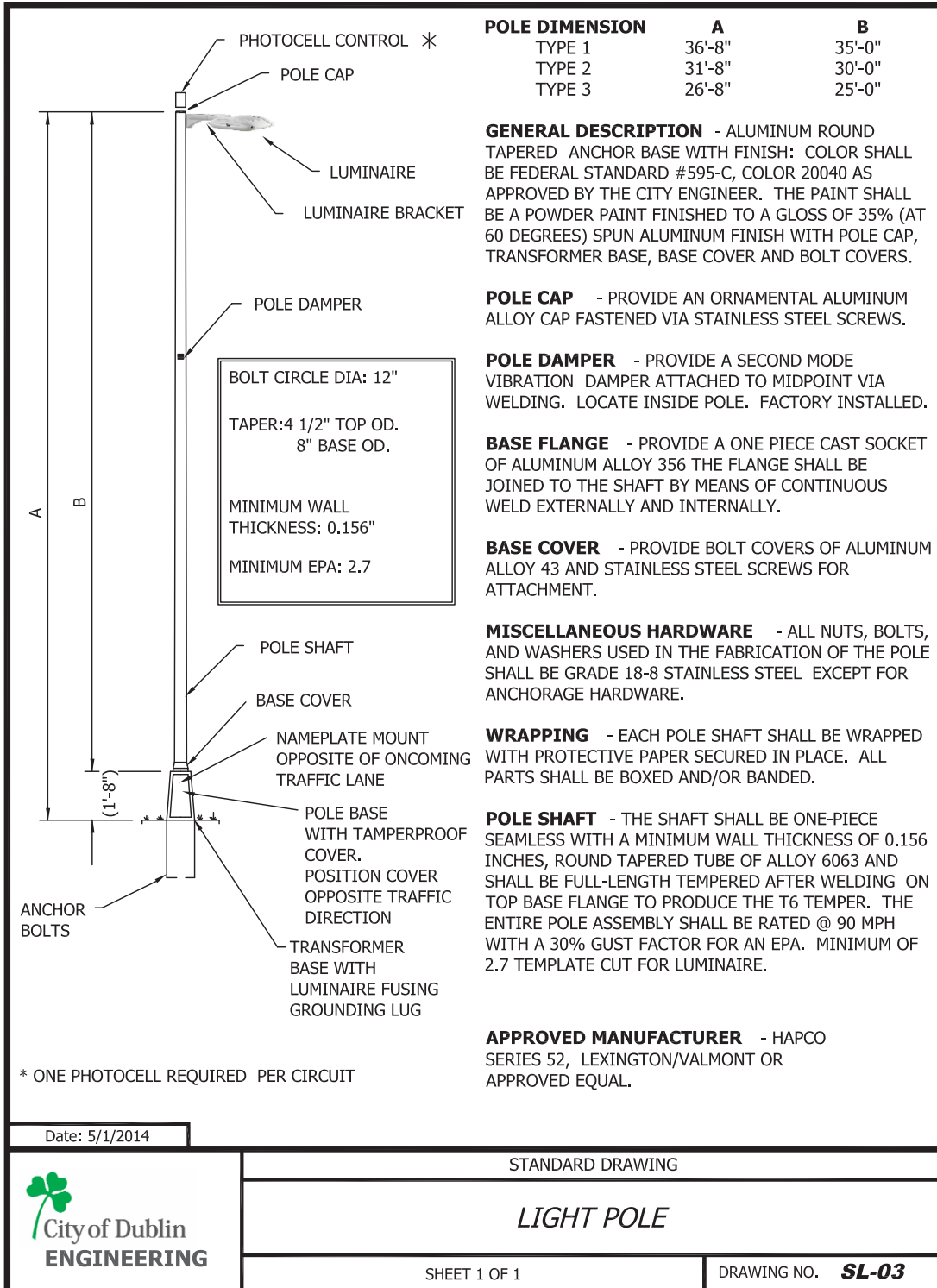
6.2 Transformer Base--SL-02 (1 of 2)



6.3 Transformer Base--SL-02 (2 of 2)



6.4 Light Pole--SL-03



TOP VIEW

PLAN VIEW

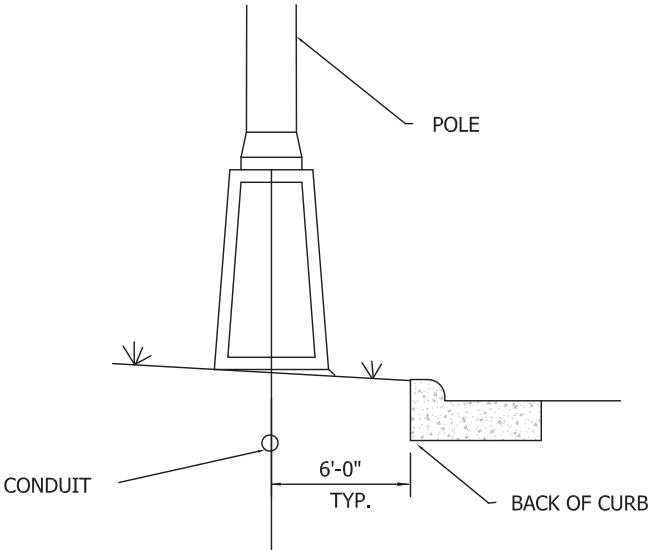



CONCRETE - CLASS C, 4000 PSI, 5-7% AIR ENTRAINED. FILL ALL EXPOSED SURFACE VOIDS. CHAMFER ALL EDGES, SLOPE TOP 1/4" WITH GROUT TO DRAIN WATER (FILL VOID BETWEEN BASE PLATE & POLE BASE SOLID, AFTER PLUMBING POLE), ADJUST SO TRANSFORMER BASE HAS NO GAP TO GROUTED SURFACE. HOT OR COLD WEATHER - FOLLOW ODOT CONSTRUCTION & MATERIAL SPECIFICATIONS SECTION 625.

CONCRETE FINISH - REMOVE ALL FORM MARKS, HAND RUB EXPOSED TOP AND SIDES WITH CARBIDE STONE.

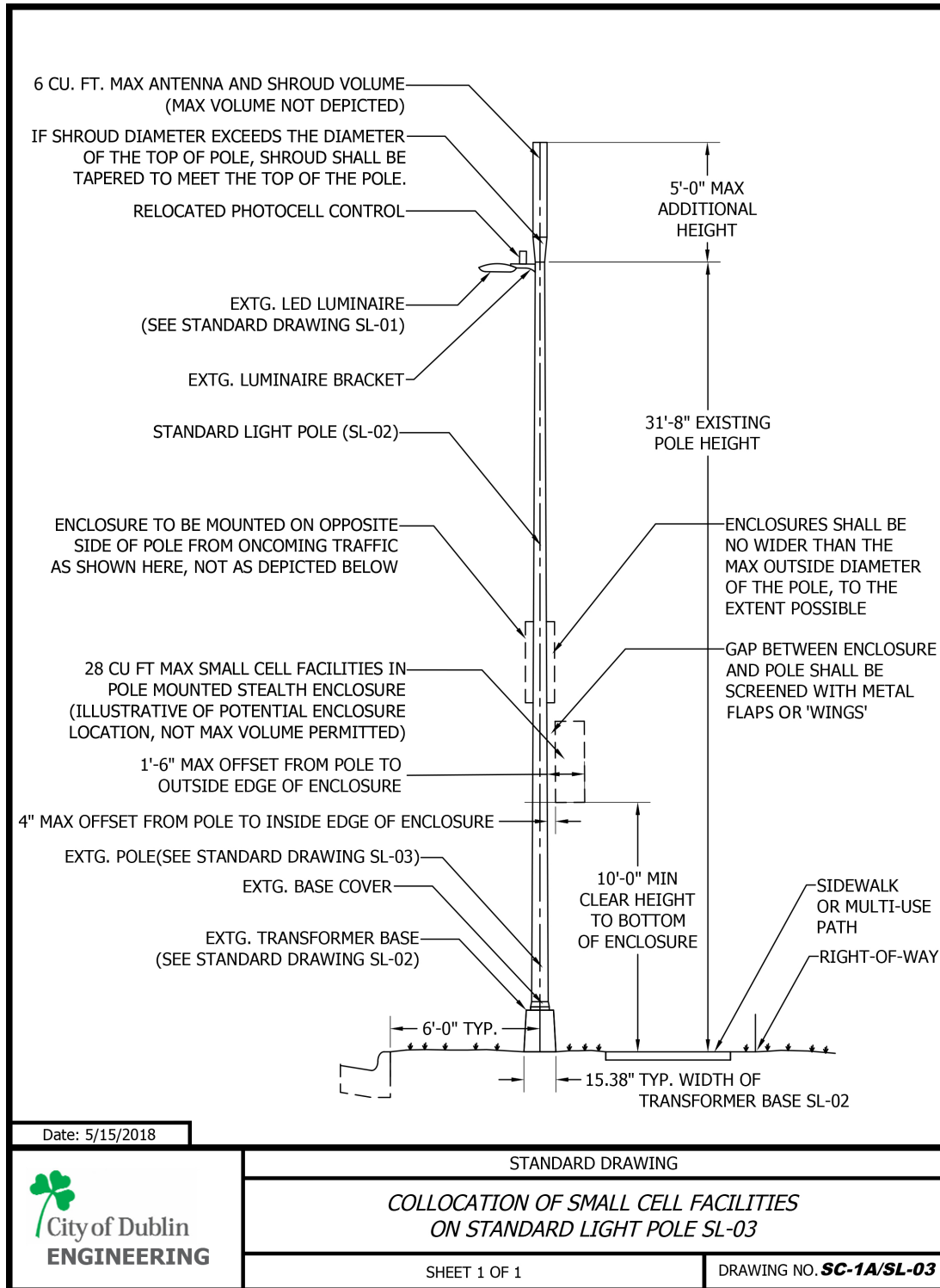
REINFORCING - ASTM A-615 GRADE 60, TYPE S DEFORMED BILLET: #6 VERTICALS, (6 TOTAL), #4 HORIZONTALS 12" O.C., CIRCULAR FORMED. WIRE TIE ALL CONNECTIONS, MAINTAIN 3" MINIMUM CONCRETE COVER.

GROUNDING - PROVIDE 5/8" X 10'-0" COPPER WELD ONE-PIECE GROUND ROD. DRIVE A MINIMUM OF 2'-0" BELOW GRADE. RUN #4 AWG SOLID COPPER GROUNDING ELECTRODE CONDUCTOR IN 3/4" PVC CONDUIT FROM ROD TO ENCLOSURE GROUND BAR. "CAD" WELD WIRE CONNECTION AT ROD.

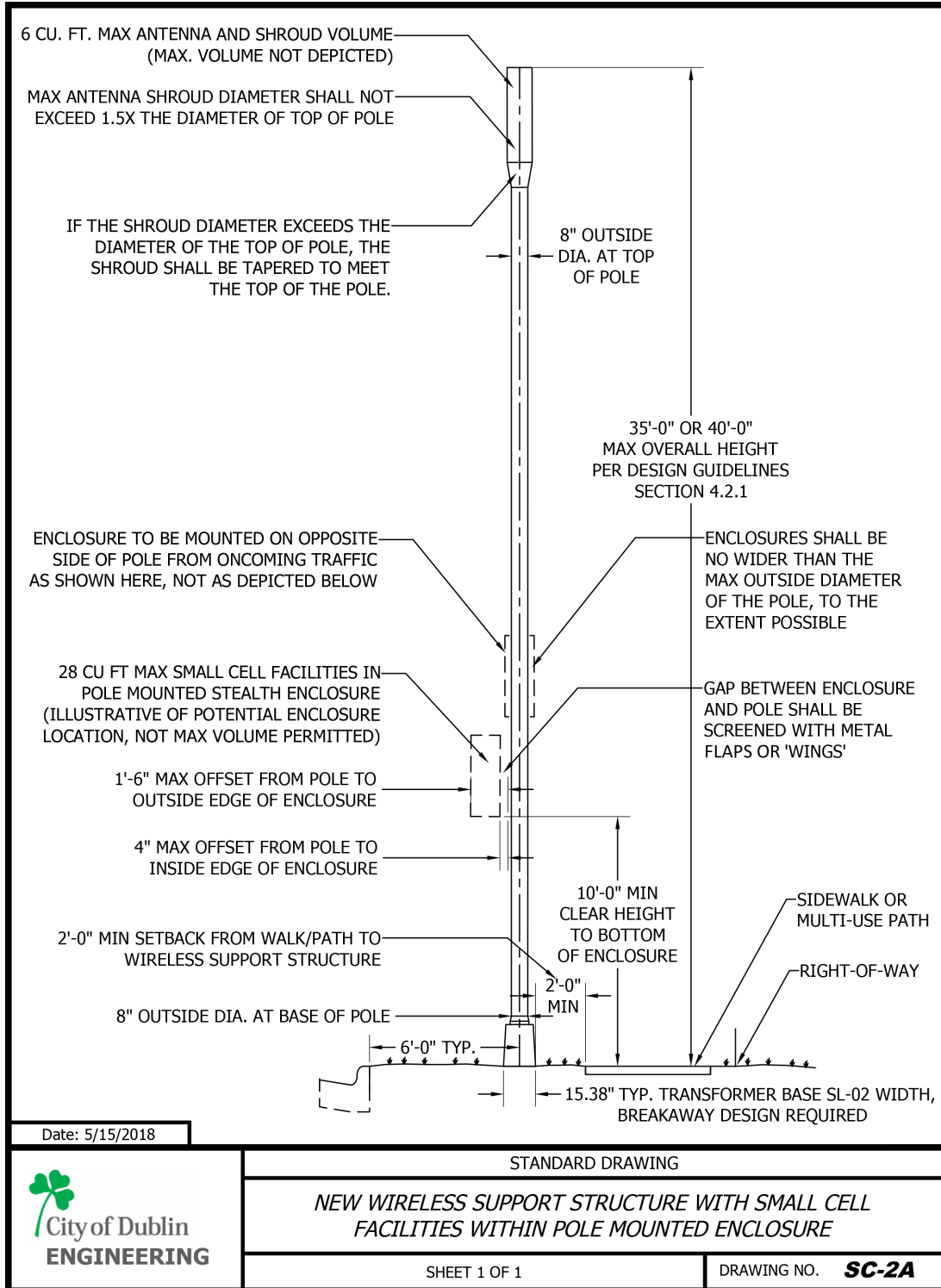
6.6 Pole Foundation--SL-04 (2 of 2)

<p>LUMINAIRE FUSING - REFER TO TRANSFORMER BASE DETAIL SL-02</p> <p>GROUNDING LEG - REFER TO TRANSFORMER BASE DETAIL SL-02</p> <p>ANCHORAGE - PROVIDE A SET OF FOUR-50,000 PSI-MIN YIELD STEEL STRENGTH ANCHOR BOLTS, THREADED, HOT-DIPPED GALVANIZED AT THE THREADED END FOR AT LEAST 10". THE BOLTS SHALL INCLUDE A 4" MINIMUM RIGHT ANGLE HOOK AT THE UNTHREADED END. PROVIDE GALVANIZED NUT, LOCKWASHERS AND FLATWASHERS FOR EACH BOLT.</p> <p>GROUT - 10,000 PSI, HIGH STRENGTH, NON-SHRINK, NON-METALLIC, COMPLY WITH CRD-C-621, PROVIDE SAND COAT FINISH (PROVIDE SONNOGROUT OR APPROVED EQUAL).</p> <p>WEATHERPROOFING - PROVIDE PENETRATING SURFACE APPLIED, 1 COAT CONCRETE WATERPROOFING AGENT. MATERIAL SHALL BE CLEAR PENETRATING, WATER BASED, ALKYALKOXYLSILANE AND CONTAIN A MINIMUM OF 40% BY WEIGHT SOLIDS AND BE APPLIED PER MANUFACTURER'S DIRECTIONS. COVERAGE SHALL BE 150 SQ. FEET PER GALLON (PROVIDE HYDROZO ENVIROSEAL 40 OR APPROVED EQUAL). APPLY 1 COAT TO ALL CONCRETE EXPOSED SURFACES ABOVE GRADE.</p> <p>FIELD CONDITIONS - CONSULT ENGINEER FOR ABNORMAL SOIL CONDITIONS SILTS AND CLAY WITH WATER LIMITS GREATER THAN 50%, HIGH ORGANIC SOILS, SHALLOW BEDROCK, ETC.</p> <p>CONDUIT - SHALL BE HEAVY WALL 2" OR 3/4" PER GRAPHIC. RIGID NON-METALLIC SCHEDULE 40 PVC FOR USE ABOVE & BELOW GROUND OR CONCRETE ENCASED. RATED FOR 90 DEGREES CELSIUS CONDUCTORS AND USE IN DIRECT SUNLIGHT. MATERIAL SHALL BE UL LISTED AND COMPLY WITH NEMA TC2-1978 AND F.S. #WC-1094A. PROVIDE IN 10 FOOT SECTIONS. SEAL ALL JOINTS WATERTIGHT. GLUE JOINTS WITH PVC CEMENT. BUSH ALL ENDS. ALL BENDS SHALL USE LONG RADIUS PREFORMED ELBOWS. EXTEND CONDUIT TO MINIMUM 2'-0" BELOW GRADE. LOCATION TO BE COORDINATED WITH LANDSCAPING AND UTILITIES.</p> <p>IF UNIT TYPE DUCT CABLE IS UTILIZED IN TRENCHES IN LIEU OF PVC CONDUIT, AT POLE FOUNDATIONS RETAIN THE PVC CONDUIT SPECIFIED ABOVE IT SHALL FUNCTION AS A SLEEVE FOR THE DUCT CABLE. OVERSIZE PVC CONDUIT EITHER 2 1/2" OR 3" AS REQUIRED BASED ON DUCT CABLE OUTSIDE DIAMETER.</p> <p>CONDUIT CAPS - TERMINAL POINTS OF ALL CONDUIT AND DUCT CABLE SHALL BE SEALED PROMPTLY AFTER INSTALLATION BY MEANS OF A MOLDED PLASTIC OR RUBBER CAPPING DEVICE THAT ONLY PERMITS WIRE PASS THROUGH.</p>	 <p style="text-align: center;">TYPICAL FOUNDATION LOCATION</p>				
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">Date: 5/1/2014</div> <div style="text-align: center; flex-grow: 1;"> <p>STANDARD DRAWING</p> <p><i>POLE FOUNDATION</i></p> </div> </div>					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; text-align: center;">  </td> <td style="width: 40%; text-align: center;"> <p>SHEET 2 OF 2</p> </td> </tr> <tr> <td colspan="2" style="text-align: right; padding-right: 10px;"> <p>DRAWING NO. SL-04</p> </td> </tr> </table>			<p>SHEET 2 OF 2</p>	<p>DRAWING NO. SL-04</p>	
	<p>SHEET 2 OF 2</p>				
<p>DRAWING NO. SL-04</p>					

6.7 Collocation with Pole Mounted Small Cell Facilities Enclosure--SC-1A/SL-0



6.8 New Wireless Support Structure w/ Pole Mounted Facility Enclosure--SC-2A



6.9 New Wireless Support Structure w/ Facilities in Transformer Base--SC-2C

