



Wireless Infrastructure in the ROW

Design Standards and Program Guidelines

August 2023



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1 Introduction

1.1 Background

Wireless infrastructure is a private utility that has largely been absent from Arizona Department of Transportation (ADOT) rights-of-way in the past. As part of a federal initiative to expand community access to high-speed wireless services throughout the nation, State DOTs have been instructed to accommodate wireless infrastructure within the public roadway rights-of-way provided that it does not negatively impact the safety, design, construction, operation, maintenance, or stability of the highway.

In 2018, the Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act (MOBILE NOW Act) was passed which requires States to establish a formal process for managing wireless infrastructure ROW efforts within their system. ADOT has developed these guidelines to provide private wireless providers the information needed to navigate the encroachment permit process specific to wireless infrastructure.

1.2 Purpose of the Guidelines

The purpose of this guideline document is to outline the technical installation requirements, the ADOT encroachment process, and the required submittal materials for installing wireless infrastructure in ADOT right-of-way. The structure of the document is as follows:

- ▶ Terms and Definitions
- ▶ Requirements for Wireless Infrastructure
- ▶ Process Overview
- ▶ Application Requirements
- ▶ Maintenance and Modifications



2 Terms and Definitions

The following are terms (acronyms) used in the document:

ADOT	Arizona Department of Transportation
ASR	Antenna Structure Registration
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FHWA	Federal Highway Administration
NEPA	National Environmental Policy Act
ROW	Right-Of-Way

The following are definitions of key words used in the document:

Antenna (wireless)	A device designed for the purpose of emitting radio frequency; designed to be operated, or is operating, from a fixed location and is attached to a tower, building, or other structure.
Encroachment permit	A written approval granted by the Department for construction of a fixed or temporary improvement within a state highway right-of-way, or for any activity requiring the temporary use of or intrusion upon a state highway right-of-way.
Macro cell	Wireless infrastructure installations that do not meet the definitions provided in 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U. Typically much larger in antenna and structure than a small cell.
Permittee	A person or entity to whom the Department issues an encroachment permit, and who is responsible for meeting the obligations, responsibilities, and specifications stated in the encroachment permit.
Shot clock	The period of time allotted for the review of an application; obtained by counting forward, beginning on the day after the date when the application was submitted, by the number of calendar days. Days considered a “holiday” as defined in 47 CFR 1.4(e) or a legal holiday within the relevant State do not count toward the shot clock.
Small cell	Wireless infrastructure installations that meet the definitions provided in 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U.
Tolling	The act of pausing the application review shot clock in order to allow permittee to provide missing information or address comments on a submittal.



3 Requirements for Wireless Infrastructure

The installation of wireless infrastructure within ADOT’s right-of-way needs to meet certain criteria and requirements to ensure that the accommodation does not adversely affect the safety, design, construction, operation, and maintenance of the highway. In general, wireless infrastructure is a private utility that falls under the guidance and requirements contained in the existing ADOT *Guideline for Accommodating Utilities on Highway Rights-of-Way*. This document provides further guidance and requirements that are specific to wireless utilities.

3.1 Wireless Infrastructure Categories

Federal law has established two categories for wireless infrastructure – “small cell” and “macro cell” – based largely on the dimensions of the infrastructure. Private utilities shall determine which category is applicable to their proposed installation, as the processes and requirements for each category differ. Definitions of each are as follows:

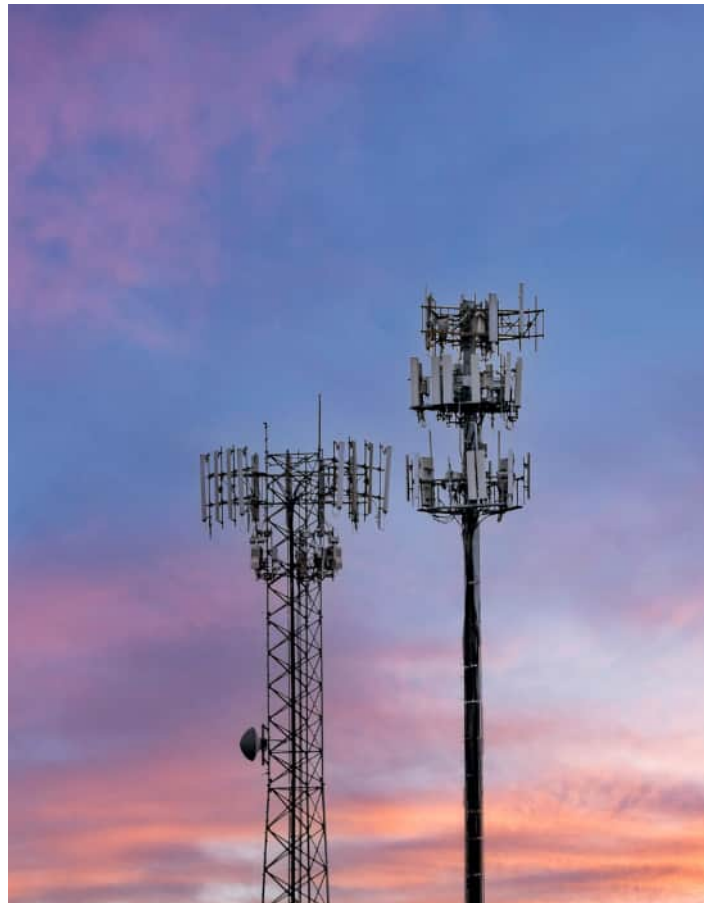
Small Cell

Wireless installations that follow the definitions provided in 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U. [\[website link\]](#)

- Mounted on structures 50 feet or less in height including their antennas, or no more than 10 percent taller than other adjacent structures, or do not extend existing structures on which they are located to a height of more than 50 feet or by more than 10 percent, whichever is greater.
- Each antenna associated with the deployment, excluding associated antenna equipment that does not emit Radio Frequency (RF), is no more than three cubic feet in volume.
- All other wireless equipment associated with the structure, including the wireless equipment associated with the antenna and any pre-existing associated equipment on the structure, is no more than 28 cubic feet in volume. *[Equipment includes power sources, shelters, or cabinets associated with an antenna, located at the same fixed location as the antenna, and mounted or installed at the same time as the antenna.]*
- The facilities do not require antenna structure registration from FCC.
- The facilities are not located on Tribal lands.
- The facilities do not result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in 47 CFR Chapter 1, Subchapter A, Part 1, Subpart I, 1.1307(b). [\[website link\]](#)

Macro Cell

Wireless installations that do not meet one or more of the above criteria.



While each antenna design and installation are unique, broad examples of the two categories are provided in **Figure 1**.

Figure 1: Examples of the Wireless Infrastructure Categories



3.2 General Requirements

Applies to Both Small Cell and Macro Cell

Proposed wireless facilities within the ADOT right-of-way must not interfere with typical highway functions, must follow all applicable laws governing the use and underlying lands, and must not unduly impact adjacent owners. The following general requirements apply to all wireless facilities installed in ADOT right-of-way:

- Installations shall not interfere with the safety, design, construction, operation, maintenance or stability of the highway.
- Installations shall comply with the local planning, zoning, and/or building requirements of the underlying local jurisdiction.
- Installations shall not violate any applicable local, state, or federal law including the Americans with Disabilities Act.
- Installations shall not impact the accessibility of ADOT infrastructure that requires inspection and maintenance.
- The installation shall not cause ADOT to incur any additional expense or maintenance cost.
- The installation shall not impact any existing underground infrastructure or drainage without specific approval from ADOT.
- All installations shall provide individual placards that list the service provider’s company name, contact phone number, and site identification number to ensure ADOT or emergency personnel can contact the service provider in cases of damage or emergencies caused by roadway incidents. On small cell, the placard shall be less than 4 inches by 6 inches and placed at the following two locations: pole/structure at a height of 4 feet from the ground; front face of the power pedestal.

3.3 Location Guidelines



Applies to Both Small Cell and Macro Cell

All new wireless infrastructure installations shall adhere to the following location requirements, regardless of whether it is small cell or macro cell:

- ⦿ Installations shall not be allowed on access-controlled interstates, i.e. I-8, I-10, I-17, I-40, etc., except as referenced below for macro cells.
- ⦿ Installations may be allowed on access-controlled freeways, i.e. Loop 101, Loop 202, and access-controlled state highways, i.e. SR 210, if the site can be accessed from existing maintenance easements/roads and both installation and future maintenance does not rely on the existing mainline shoulder.
- ⦿ Installations shall not interfere with planned future highway improvements.
- ⦿ Installations shall not be allowed within a highway median.
- ⦿ Installations shall not be allowed on ADOT roadway bridges.
- ⦿ Installations shall be as close to the ADOT right-of-way line as feasible, taking into account ADOT needs for maintenance and any requirements set forth by the local jurisdiction.
- ⦿ Installations should be located outside the roadway clear zone as defined in the *ADOT Roadway Design Guidelines*. If equipment is to be located within the clear zone, an applicant must show that no alternative location is feasible and all above ground infrastructure must be protected from traffic per ADOT standards. Breakaway equipment will not be allowed for wireless installations.

In all cases, access to the site is a non-exclusive access route provided by ADOT to the applicant for temporary use. Access to the site shall not be considered an easement dedicated to the applicant.



Small Cell

For small cell installations, additional location requirements include:

- ⦿ Installations should be a minimum of 150 feet from a signalized intersection measured from the nearest traffic signal pole. If closer than 150 feet, the proposed installations shall not obstruct visibility of any signal heads by approaching traffic and must be approved by ADOT.
- ⦿ Installations should be located a minimum of 300 feet from existing small cell wireless infrastructure where feasible. In cases where this is not feasible, collocation should be considered.



Macro Cell

For macro cell installations, additional location requirements include:

- ⦿ If a proposed macro cell site is within an access-controlled interstate corridor and access to the site can be provided from existing infrastructure that is not the mainline roadway then an exception may be considered. A Special Case Request should be submitted following the direction provided through the ADOT Encroachment Permit Office [\[website link\]](#).

3.4 Collocation Guidelines

The installation of structures supporting wireless antennas can create additional risks and visual clutter within the ADOT right-of-way. To minimize these concerns, collocation of antennas on existing structures (private or public) can benefit ADOT and the general public.

📶 **Small Cell**

For small cell wireless, collocation of equipment shall adhere to the following requirements:

- Collocation on existing infrastructure may be allowed within ADOT right-of-way. ADOT preference for collocation, if feasible, is provided in the following order:
 - a. Existing non-ADOT wireless infrastructure
 - b. Existing non-ADOT utility pole
 - c. Existing ADOT roadway luminaire pole (non-median, non-lowering)
- Installations shall not be allowed to collocate on the following existing ADOT facilities:
 - a. high-mast median lighting or any ADOT poles that have equipment with lowering capabilities
 - b. traffic signal poles
 - c. overhead sign structures
- Collocation with ADOT infrastructure will require the wireless infrastructure applicant to install a replacement pole, assume pole ownership, and maintain the shared pole. If ADOT roadway lighting or other features are located on the pole, the applicant will allow ADOT access to the pole to maintain and operate the ADOT equipment. Collocation with ADOT infrastructure will not be allowed if the existing pole utilizes a breakaway base (Refer to Section 3.3).
- Collocation with ADOT lighting will require the applicant to reinstall the existing luminaire at the same height over the roadway using a similar-style mast arm of the same length and profile as the original. The applicant shall prepare a lighting analysis to confirm that the new configuration matches or improves the prior roadway lighting condition.
- Collocation with ADOT infrastructure will require additional power requirements as listed in the appropriate section.

📶 **Macro Cell**

For macro cell wireless, collocation requirements include:

- Collocation of new macro cell equipment shall not be allowed on ADOT infrastructure.
- Collocation of new macro cell equipment may be allowed on existing macro cell installations. Applicants shall coordinate with the ADOT Broadband Office and existing permit owner on specific criteria and fees.

An example collocation on a roadway luminaire pole is provided in **Figure 2**.

Figure 2: Example Collocation on a Roadway Luminaire Pole



3.5 Radio Frequencies Guidelines

Proposed wireless facilities within the ADOT right-of-way will emit frequencies that are governed by the FCC. In some cases, the frequencies will be in a specific range and low enough power that there is no need to license; in other cases, the frequencies will need approval and licensing from FCC. It is the responsibility of the applicant to obtain necessary federal reviews and approvals.



Small Cell

For small cell wireless installations, the facilities shall not result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U, 1.1307(b).

[\[website link\]](#)



Macro Cell

For macro cell wireless installations, the following requirements apply:

- Installations shall follow FCC requirements in terms of evaluating, mitigating, and managing human RF radiation exposure as detailed in 47 CFR Chapter 1, Subchapter A, Part 1, Subpart I, 1.1310. [\[website link\]](#)
- Installations shall only transmit or receive frequencies that are licensed to the owner, or customers collocated on the structure, by FCC or do not require FCC approval (unlicensed).



3.6 Electrical Power Guidelines



Applies to Both Small Cell and Macro Cell

Proposed wireless facilities within the ADOT right-of-way will require external power, presumably electrical, to maintain operations. Electrical power to the proposed facilities must be installed according to typical ADOT standards. All wireless infrastructure installations shall adhere to the following requirements, regardless of whether it is small cell or macro cell:

- ⦿ All electrical wiring, cabinets, equipment, and associated work shall comply with the National Electric Code (NEC) and applicable ADOT guidelines and standards.
- ⦿ Electrical lines shall be installed underground through the use of conduit and pull boxes as described in the *ADOT Guideline for Accommodating Utilities on Highway Rights of Way*. Use of aerial power will be considered on a case-by-case basis by ADOT but generally limited to rural areas.
- ⦿ Installations shall not use ADOT's electrical service as the power source for any wireless infrastructure equipment. A separate dedicated power source shall be provided.
- ⦿ Installations may include external generators or connections for portable generators for back-up power only. Such installations shall include containment elements to prevent fuel spill and will be approved on a case-by-case basis.



Small Cell

For small cell installations, additional electrical power requirements include:

- ⦿ Power pedestals and other equipment shall be installed within 5-feet of the support structure and parallel to or behind the structure as referenced from the roadway, unless there is a conflict or request by ADOT. Power pedestal size shall be no larger than an ADOT "Myers" or "Milbank" style cabinet as listed in ADOT Traffic Signals and Lighting Standard Drawing 3-5. If the power equipment can be pole mounted, the enclosure must face away from traffic.
- ⦿ Electrical disconnect switches shall be provided for emergency use in cases of damage caused by roadway incidents or other events. The switch may be mounted on the pole, the ground equipment cabinet, or the power meter pedestal. In all cases, the switch must be within 4-feet of the ground. The switch shall be accessible to ADOT staff. If a lock (combination, key, other) is installed, the applicant must provide ADOT the resources (code or key) to unlock the switch.
- ⦿ In collocation installations, wiring for the ADOT roadway luminaire or other features previously located on the pole shall be reinstalled separate from the wireless infrastructure wiring. All electrical wires for the ADOT luminaire or other features on the pole shall be new and connected to the existing power source. Separate conduit and equipment grounding will be required for each power circuit; co-use of ADOT grounding wire is not permitted. In addition, a warning placard shall be placed on the pole indicating that "Multiple power sources are located within the pole."



Macro Cell

Any additional guidance would be site-specific and provided during the encroachment permit process.

3.7 Aesthetic Guidelines

Applies to Both Small Cell and Macro Cell

The installation of wireless facilities in the ADOT right-of-way will create a visual impact to both the highway as well as adjacent land uses. It is the responsibility of the applicant to coordinate with local agencies to ensure that concerns surrounding visual impact are addressed. All wireless infrastructure installations shall adhere to the following requirements, regardless of whether it is small cell or macro cell:

- Installations shall not include advertising, flashing lights, decals, stickers, or commercial signage unless required by federal law.
- Installations shall utilize underground connections for power and communication to minimize visual impact. In no cases shall there be exposed wiring.

Small Cell

For new small cell wireless installations, additional aesthetic requirements include:

- Installations should match the color, size, and material of any adjacent poles within 150 feet.
- The color of all wireless antennas and ancillary equipment should match the color of the pole on which it is attached.

Macro Cell

For new macro cell wireless installations, additional aesthetic requirements include:

- Installations shall meet the aesthetic requirements set by the local jurisdiction, including any impacted historical district or cultural resources. This includes any local requirements for concealment elements, camouflage, and shrouding techniques to minimize contrast between the equipment and the surrounding landscape. Two examples of concealment techniques for macro cell installations are provided in **Figure 3**.

Figure 3: Example Concealment Treatments for Local Aesthetics





4 Process Overview

4.1 Introduction

The installation of wireless infrastructure within ADOT right-of-way is considered a highway encroachment and shall follow the existing *ADOT Encroachment Permits Policies Guidelines and Procedures Manual* and associated processes. Wireless infrastructure encroachments have additional steps beyond those included in the *ADOT Encroachment Permits Policies Guidelines and Procedures Manual* due to the associated height, communication frequencies, and visual impacts. Each additional step is described below.

4.2 STEP 1: Determine Eligibility

The first step in applying for a wireless infrastructure encroachment in ADOT right-of-way requires the applicant to determine the wireless infrastructure category and a feasible location.

The distinction between small cell and macro cell categories is based on the definitions within 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U. [\[website link\]](#)

Small Cell

Small cell infrastructure must meet the following characteristics:

- Mounted on structures 50 feet or less in height including their antennas, or no more than 10 percent taller than other adjacent structures, or do not extend existing structures on which they are located to a height of more than 50 feet or by more than 10 percent, whichever is greater.
- Each antenna associated with the deployment, excluding associated antenna equipment that does not emit RF, is no more than three cubic feet in volume.
- All other wireless equipment associated with the structure, including the wireless equipment associated with the antenna and any pre-existing associated equipment on the structure, is no more than 28 cubic feet in volume. *[Equipment includes power sources, shelters, or cabinets associated with an antenna, located at the same fixed location as the antenna, and mounted or installed at the same time as the antenna.]*
- The facilities do not require antenna structure registration from FCC.
- The facilities are not located on Tribal lands.
- The facilities do not result in human exposure to radiofrequency radiation in excess of the applicable safety standards specified in 47 CFR Chapter 1, Subchapter A, Part 1, Subpart I, 1.1307(b). [\[website link\]](#)

Macro Cell

If one or more of the small cell criteria is not met, the wireless infrastructure is considered a macro cell infrastructure.

4.2.1 Pre-Application Meeting

For new macro cell locations, applicants shall contact the ADOT Broadband Office [website link] prior to application to coordinate on acceptable sites and feasibility. Preliminary determination of ADOT right-of-way can be found under the ADOT Broadband Office website. The website includes right-of-way information in a GIS-format with aerial background photogrammetry and measurement tools available. Final determination of right-of-way should be based on survey data and as-built maps.

For new small cell locations, similar pre-application coordination with ADOT is not required but recommended. Such meetings should be conducted through the appropriate ADOT District Permit Office [website link]. In all cases, allowable locations must meet the criteria in Section 3.3 (Location Guidelines) of this document.

It should be noted that pre-application meetings do not start the federal shot clock timeframes described in Section 4.5. These meetings are to outline the process, address any known issues, and facilitate complete applications for more streamlined reviews.

4.3 STEP 2: Local Jurisdiction Approval

ADOT right-of-way is typically a narrow and linear feature within a local governing agency and ADOT may not own the underlying land. As adjacent local lands may be impacted by wireless infrastructure, applicants must coordinate with the local jurisdiction and/or underlying property owner to ensure that the infrastructure is compatible with local planning and zoning and that any required aesthetic treatments are identified. The applicant will be wholly responsible for this step and must self certify completion as part of the encroachment permit application. Coordination and approvals from local jurisdiction and/or underlying property owner may be done concurrently with the encroachment application if the shot clock is paused.

4.4 STEP 3: Federal Review (Macro Cell Only)

For macro cell infrastructure, applicants shall follow all FAA and FCC rules and regulations applicable to the installation of both a vertical structure and a communication device. The applicant will be wholly responsible for this step and must obtain any required federal review and approvals prior to submitting an

application to ADOT to ensure that the proposed installation meets the requirements from the FAA and FCC. While a summary of the federal processes for FAA and FCC is provided below, it is the responsibility of the applicant to ensure all steps have been met and, if necessary, obtain a Letter of Determination of “No Hazard” from the FAA and the Antenna Structure Registration (ASR) number from the FCC.

4.4.1 FAA review

The FAA requires notification and registration of all structures that meet at least one of the following criteria:

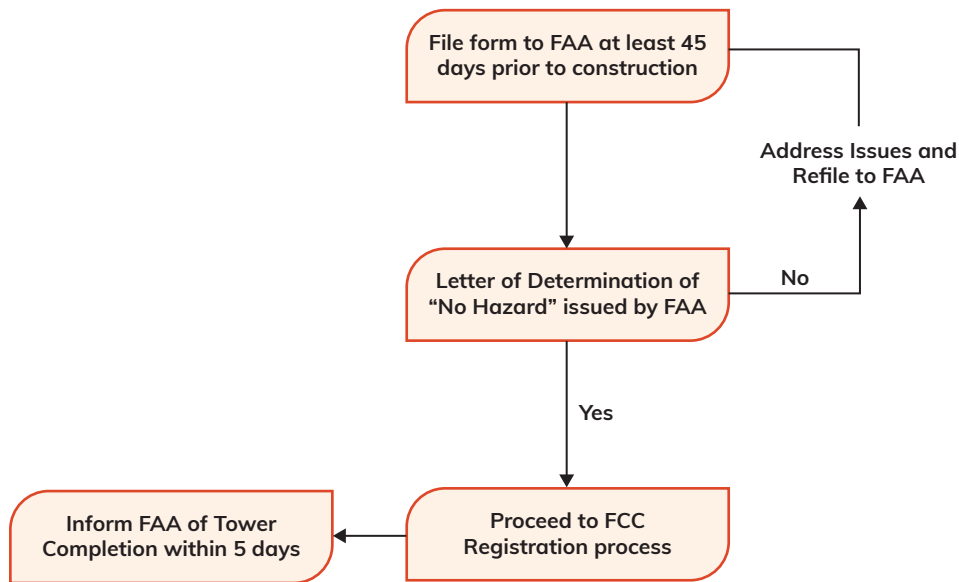
- ▶ Structure exceeds 200 feet above ground.
- ▶ Structure is in close proximity to an airport or heliport and will exceed defined slope ratios.
- ▶ Structure will emit frequencies that does not meet FAA Collocation Policy.
- ▶ Structure will be in an instrument approach area and might exceed Part 77 Subpart C.
- ▶ Structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception.
- ▶ Structure will be at an airport or heliport.
- ▶ Filing has been requested by the FAA.

If any of the above criteria are met, FAA must be notified of the proposed activity. To assist, a FAA Notice Criteria Tool is available to determine applicability based on a proposed site location and structure height [website link]. If FAA notification is required, applicants are required to obtain a determination letter of “No Hazard” prior to construction/modification. For new structures, the required Form 7460-1 must be completed at least 45 days prior to construction. For alterations that are subject to the licensing requirements of the FCC, the required form must be submitted on or before the date that the application is filed with the FCC.

The FAA will subsequently perform an aeronautical study to determine if the proposed tower poses a hazard to air navigation. If a determination of “No Hazard” is not received, the applicant must address FAA issues and refile. Once the tower is approved by FAA, a separate Form 7460-2 must be filed with the FAA by the contractor within 5 days after the construction of the tower reaches its maximum height to inform the FAA the tower construction is complete. These steps shall be the responsibility of the encroachment applicant; ADOT will not request associated documentation as part of the encroachment permit process.

A graphic overview of the process is provided in Figure 4.

Figure 4: FAA Notification Process



4.4.2 FCC review

Building new structures or collocating antennas on existing structures requires compliance with the FCC’s rules for environmental review to ensure that adequate measures are taken to protect environmental and historic resources. Any new structures, or collocations that involve substantial height or footprint increases as defined by 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U, require:

- ▶ Compliance with FCC rules implementing NEPA (which includes separate procedures for Endangered Species Act and National Historic Preservation Act)
- ▶ ASR with the FCC (depending on the location and height)

The NEPA process requires various levels of review depending on the level of impact. These include: Categorical Exclusion, Environmental Assessment (EA), and Environmental Impact Statements (EIS). While the obligation to comply with NEPA ultimately rests with FCC, the actual assessment/evaluation is delegated to the tower owner, licensee, applicant, registrant, and owners of facilities used for FCC-licensed service. A checklist has been developed by FCC to assist in determining whether an EA is required.

Regarding RF radiation, applicants must determine whether their facilities qualify for an exemption under 47 CFR § 1.1307(b)(3). If not, the applicant must prepare an evaluation of human exposure to RF radiation to

confirm that the proposed facility will be in compliance with the limits in 47 CFR § 1.1310 or prepare an EA evaluating the effects of RF that exceed the limits.

Once applicants obtain a No Hazard Determination from the FAA, applicants are required to submit an FCC Form 854 to obtain an ASR for licensed frequencies. This typically incorporates the FAA’s “no hazard” marking and/or lighting specifications and assigns the antenna an ASR number. Once an antenna structure is registered, no changes to the specifications in the ASR are permitted without prior approval from both the FAA and the FCC.

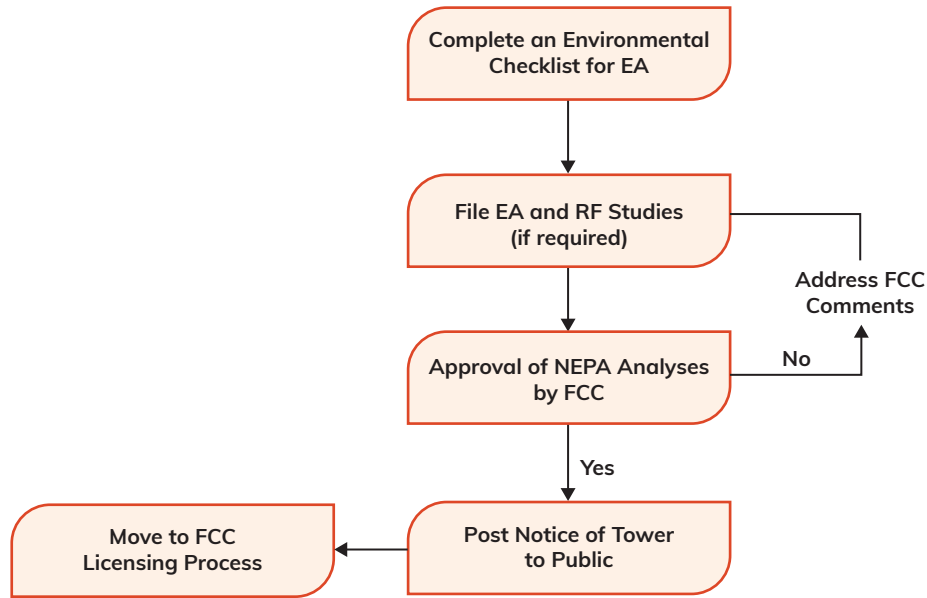
Prior to construction, the following actions are required:

- ▶ Review, analysis, and completion of the NEPA Checklist to determine if the project qualifies for a Categorical Exclusion
- ▶ Filling an Environmental Assessment (where required)
- ▶ Receipt of the ASR number
- ▶ Conclusion of the 30-day public notice period (where required)
- ▶ Resolution of any requests for environmental review (where applicable)

These steps shall be the responsibility of the encroachment applicant; ADOT will not request associated documentation as part of the encroachment permit process.

A graphic overview of the process is provided in **Figure 5**.

Figure 5: FCC Registration Process



4.5 STEP 4: Submit ADOT Encroachment Application

An encroachment permit is required to occupy ADOT right-of-way and is typically processed through the appropriate ADOT District. Proposed wireless facilities will follow the same general approach and District staff will be the primary contact. While information regarding the ADOT encroachment permit process is available from the ADOT Encroachment Permit Office [\[website link\]](#), specific guidance related to wireless infrastructure is provided in Section 5 of this document.

Upon submitting the application to ADOT, the department will review the application for administrative completeness. If and when administratively complete, the permit application will be reviewed for agency and technical compliance. Due to federal requirements on wireless infrastructure, the ADOT review of wireless installations will be subject to the Federal Shot Clock requirements.

In the case of macro cell infrastructure, additional coordination will be required with the ADOT Broadband Office on the review and lease management. Leases are required for all new installations and many collocations and rates will be determined by ADOT based on fair market rent.

4.5.1 Federal Shot Clock, Small Cell Application

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Small Cell

Under 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U, public agencies are given a prescribed timeframe to review and act on applications for wireless infrastructure. This “shot clock”, as shown in **Table 1**, displays the sum of reasonable review times and tolling for individual small cell applications.

Table 1: Federal Shot Clock Timeframes (Small Cell)

Application Type	New Structure	Collocation on Existing Structure
Individual small cell	90 days	60 days

Federal Code allows for tolling periods in the shot clock timeframe if additional or new information is required. If an initial small cell encroachment application is found to be administratively incomplete and ADOT notifies the applicant on or before the 10th day after submission, the shot clock will be reset to zero once a complete application is submitted.

Once a technical review is underway for a permit, ADOT will notify the applicant if additional information is needed. The tolling period shall be the number of days from the day after the date the agency provides a valid notice of incompleteness to the applicant, in writing, until the date on which the applicant submits all the documents and information to render the application complete. The shot clock will resume when the applicant has submitted all the required information.

Once an application is tolled, there must be a response to ADOT from the applicant within 60 days to

indicate progress or request an extension otherwise the application will be deemed inactive and a new application will be required when activity resumes. This requirement is codified in Arizona Administrative Code R17-1-102 - "If the applicant does not withdraw the application and does not respond, within 60 days after the date on a request for additional information under subsection (D), to each item required by the request, the Department shall treat the application as withdrawn. The Department shall not issue a written notice of denial."

If a small cell application is for multiple sites (i.e., batch), then the review times above remain the same so long as all sites are similar. If the sites vary between new and collocation, the review time will be based on the new structure timeframe of 90 days.

4.5.2 Federal Shot Clock, Macro Cell Application



Macro Cell

Under 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U, public agencies are given a prescribed timeframe to review and act on applications for wireless infrastructure. This "shot clock", as shown in **Table 2**, displays the sum of reasonable review times and tolling for individual macro cell applications.

Federal Code allows for tolling periods in the shot clock timeframe if additional or new information is required. For initial macro cell encroachment applications, the tolling period shall be the number of days from the day after the date the agency provides a valid notice of incompleteness to the applicant, in writing, until the date on which the applicant submits all the documents and information to render the application complete if ADOT

notifies the applicant on or before the 30th day after submission. The shot clock will resume when the applicant has submitted all the required information.

Once an application is tolled, there must be a response to ADOT from the applicant within 60 days to indicate progress or request an extension otherwise the application will be deemed inactive and a new application will be required when activity resumes. This requirement is codified in Arizona Administrative Code R17-1-102 - "If the applicant does not withdraw the application and does not respond, within 60 days after the date on a request for additional information under subsection (D), to each item required by the request, the Department shall treat the application as withdrawn. The Department shall not issue a written notice of denial."

Table 2: Federal Shot Clock Timeframes (Macro Cell)

Application Type	New Structure	Collocation on Existing Structure
Individual large (macro) cell	150 days	90 days



5 Application Requirements

The encroachment permit for wireless infrastructure shall follow the existing *ADOT Encroachment Permits Policies Guidelines and Procedures Manual* and associated processes. In general, the permit application must consist of the following primary elements:

- ▶ ADOT Encroachment Permit Application
- ▶ Plan Sheet
- ▶ Profile Sheet
- ▶ Local Jurisdictional Approval (as applicable)
- ▶ Certificates of Insurance or Evidence of Self-Insurance

5.1 ADOT Encroachment Permit Application

The ADOT Encroachment Permit is a required element for all non-agency activities and infrastructure within ADOT right-of-way. General information about the process and application are available from the ADOT Encroachment Permit Office [\[website link\]](#). In addition to the permit application form, the website provides the following key elements:

- ▶ Encroachment Permits Policies Guidelines & Procedures Manual
- ▶ Encroachment Permit Pre-Application Checklist
- ▶ Encroachment Application Instructions
- ▶ Encroachment Permit Insurance Requirements

5.1.1 Encroachment Permits Policies Guidelines & Procedures Manual

This document is the defining reference in terms of the encroachment process and requirements and provides detail on each element of the permit. While quick reference guides, matrices, and checklists have been developed on specific topics, this document should be considered the “original/official” source. Major topics contained in the document include permit types, insurance requirements, engineering and construction, environmental clearances, and right-of-way. Applicants should focus on the “Utilities” section of that manual as wireless infrastructure is a private utility.

5.1.2 Encroachment Permit Pre-Application Checklist

This checklist outlines the coordination that takes place during the pre-application meeting outlined in Section 4.2.1 of this document (Pre-Application Meeting). The checklist provides discussion topics for both the applicant and ADOT. The applicant will be required to describe the scope of the proposed wireless installation in terms of approximate location, structure, and antennas in order to obtain initial feedback from ADOT and to inform the overall process. In turn, ADOT staff will provide information on the application, insurance requirements, utility guidelines, and other applicable requirements.

5.1.3 Encroachment Application Instructions

The Encroachment Application Instructions is a brief document that provides definitions and clarification for each entry required on the permit application. Contact information for each ADOT District is also included along with a route/milepost map that can assist in locating the proposed site within ADOT reference terminology.

5.1.4 Encroachment Permit Insurance Requirements

Insurance requirements for the permit activity are listed in this document in a matrix form that identifies insurance types, coverage limits, and endorsement requirements. A checklist is provided for communication and coordination between the applicant, the applicant’s insurance provider(s), and ADOT. It is recommended that applicants reference the insurance matrix prior to the pre-application meeting.

5.2 Plan Sheet

Applicants must submit a plan sheet as part of the encroachment permit application to illustrate the scope and design of the wireless infrastructure. While plan sheets should follow the basic requirements contained in the *Encroachment Permits Policies Guidelines & Procedures Manual*, the following are the key elements that need to be included and labeled for wireless infrastructure in the ADOT right-of-way:

- ▶ State infrastructure: roadway centerline, edge of pavement, right-of-way line, sidewalks/paths
- ▶ Adjacent land use: local municipality (name), adjacent property lines and existing building(s)
- ▶ Clear zone: posted speed limit, clear zone line
- ▶ Utilities: existing utility lines, poles, conduit/pull boxes, etc.
- ▶ Proposed infrastructure: pole/structure, power supply including conduit/pull box, any supporting cabinets/pedestals, enclosures (macro cell only)
- ▶ Limits of construction

An example plan sheet is provided in the Appendix.

5.3 Profile Sheet

Applicants must submit a profile sheet as part of the encroachment permit application to illustrate the antenna details and vertical aspects of the wireless infrastructure. While profile sheets should follow the basic requirements contained in the *Encroachment Permits Policies Guidelines & Procedures Manual*, the following are the key elements that need to be included and labeled for wireless infrastructure in the ADOT right-of-way:

- ▶ Pole/Structure: height, material, foundation
- ▶ Existing equipment (if applicable): luminaire, utility lines, etc.
- ▶ Proposed equipment: antenna, mounts, ancillary equipment
- ▶ Wiring: location of wiring (power, communication), handholes, conduit, etc.

An example plan sheet is provided in the Appendix.

It is the responsibility of the applicant to perform adequate structural analysis by a licensed engineer to ensure that the proposed structural elements and foundation elements can support all current and future wireless infrastructure. This requirement applies for new poles/structures as well as all collocations. ADOT staff will not review or approve any engineering analysis related to the structure or equipment connections.





5.4 Local Jurisdictional Approval

For all wireless infrastructure, applicants must self-certify completion of local jurisdictional review and approval process as described in Section 4 (Process Overview) of this document. This coordination is important to the ADOT encroachment process to ensure that the applicant has identified all issues that may impact the design and/or location of the wireless facility. Approvals from local jurisdictions may be done concurrently with the encroachment application if the shot clock is paused.

5.5 Certificates of Insurance or Evidence of Self-Insurance

Encroachment activities within ADOT right-of-way require that the encroachment owner assume all legal liability and financial responsibility for the activity throughout the duration of the encroachment and to “indemnify, defend, and save harmless ADOT and the State of Arizona” from claims, costs, damages, and other actions associated with the permit. The ADOT *Guide for Accommodating Utilities on Highway Right-of-Way* establishes that utilities in ADOT right-of-way are required to provide insurance for each occurrence for as long as the utility is within the right-of-way. The permittee and any associated contractor are required to provide ADOT with insurance consistent with the listed requirements in the *Encroachment Permit Insurance Requirements*. This includes certificate(s) of insurance naming State of Arizona/ADOT as an Additional Insured with respects to General Liability and Automobile Liability and provide a Waiver of Subrogation endorsement in favor of the State of Arizona/ADOT for all insurance coverages. Alternatively, an applicant can provide documentation of self-insurance in-lieu of third-party coverage.



6 Special Case: Macro Cell Collocations

6.1 Collocation without Substantial Change

Activities involving macro cell collocations that do not result in a substantial change are provided separate agency approval limitations under 47 CFR Chapter 1, Subchapter A, Part 1, Subpart U. A “substantial change” for structures in the public right-of-way is defined as:

- ▶ An increase in the height of the structure by more than 10% or more than ten feet, whichever is greater;
 - changes in height should be measured from the dimensions of the tower or base station, inclusive of originally approved appurtenances and any modifications that were approved prior to the passage of the Spectrum Act.
- ▶ The addition of an appurtenance to the body of the structure that would protrude from the edge of the structure by more than six feet;
- ▶ The installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets; or, for towers in the public rights-of-way and base stations, 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;
- ▶ It entails any excavation or deployment outside of the current site;
- ▶ It would defeat the concealment elements of the eligible support structure; or
- ▶ It does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in § 1.40001 (b)(7)(i) through (iv).

The processes and requirements for submittal and approval of macro collocations, as described in the prior chapters of this Guidebook, are subject to change as described in this section as applicable.

6.1.1 Agency Approvals

For macro cell collocations that do not result in a substantial change, a State or local government “may not deny and shall approve any eligible facilities request for modification of an eligible support structure that does not substantially change the physical dimensions of such structure.”

6.1.2 Review Shot Clock

For macro cell collocations that do not result in a substantial change, ADOT’s Federal shot clock will be reduced to 60 days. ADOT shall approve the application within 60 days of the date on which an encroachment permit is received, unless it determines that the application is incomplete. Tolling of the shot clock, as described in Section 4.5 of this Guidebook, may only occur by mutual agreement or in cases where ADOT determines that the application is incomplete.

6.1.3 Application Requirements

For macro cell collocations that do not result in a substantial change, the applicant shall provide ADOT documentation that the proposed collocation does not meet any of the criteria for a substantial change in conjunction with the encroachment permit application. Per the above referenced CFR, a State or local government may not require an applicant to submit any other documentation.



THRU TRAFFIC MERGE LEFT



7 Maintenance and Modifications

The wireless infrastructure owner/operator is responsible for routine maintenance and repairs to ensure that the infrastructure maintains its intended use and does not pose additional risks beyond those identified during ADOT approval. Since the initial encroachment permit is only for the installation of the wireless infrastructure, maintenance and/or modifications of the site require additional coordination and approval by ADOT through the same encroachment permit process.

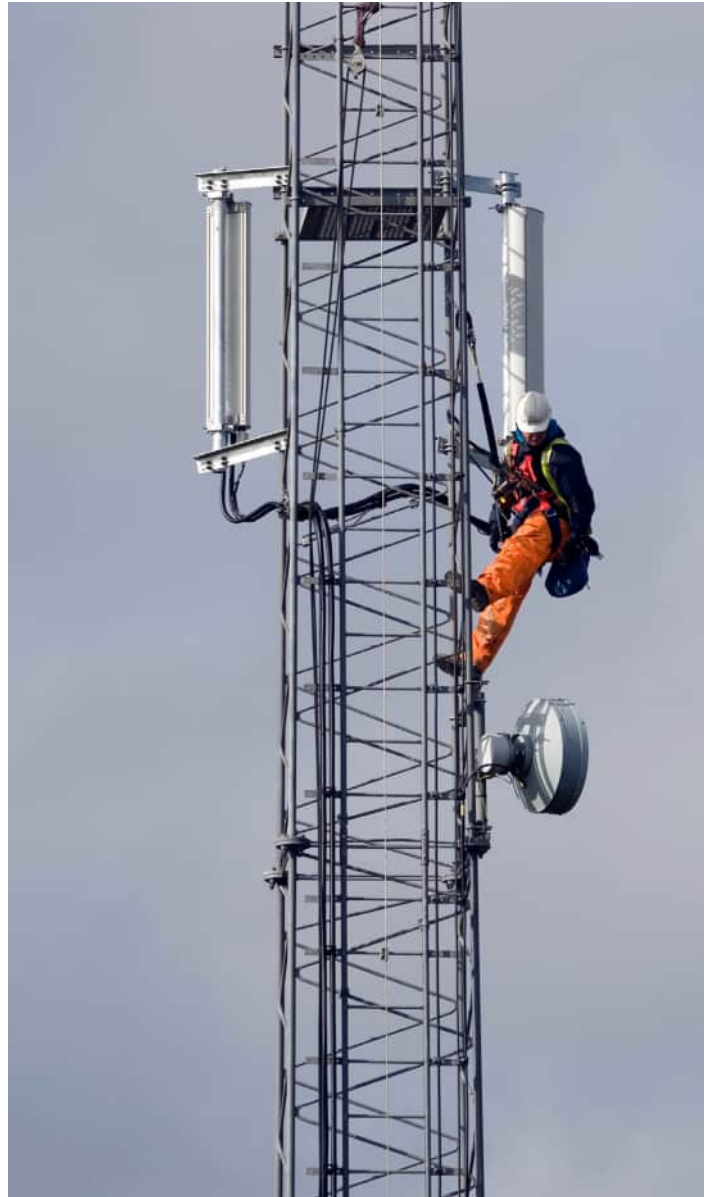
7.1 Maintenance

Blanket permits are available for utility providers to cover routine maintenance and emergency repairs. These permits are issued for one year and cover the utility owner/operator to maintain existing equipment so long as activities do not result in any material changes. The permits can be extended for another year with insurance renewal. Any material changes, such as the relocation of equipment or the addition of permanent equipment, will require a new encroachment permit.

7.2 Removal and/or Abandonment

The removal and/or abandonment of a utility within ADOT right-of-way shall not be done without notification and approval by ADOT through the encroachment permit process. For the removal of wireless infrastructure, the owner/operator will be required to remove all above ground structures and equipment including foundations. For underground equipment, ADOT may allow conduit or similar features to be abandoned in place if they are a minimum of 5 feet horizontal and 2 feet vertical from any new or proposed highway feature. Abandonment of encroachment permits that include collocation with other facilities, including ADOT infrastructure, will require the encroachment owner to restore the shared infrastructure to its prior state.

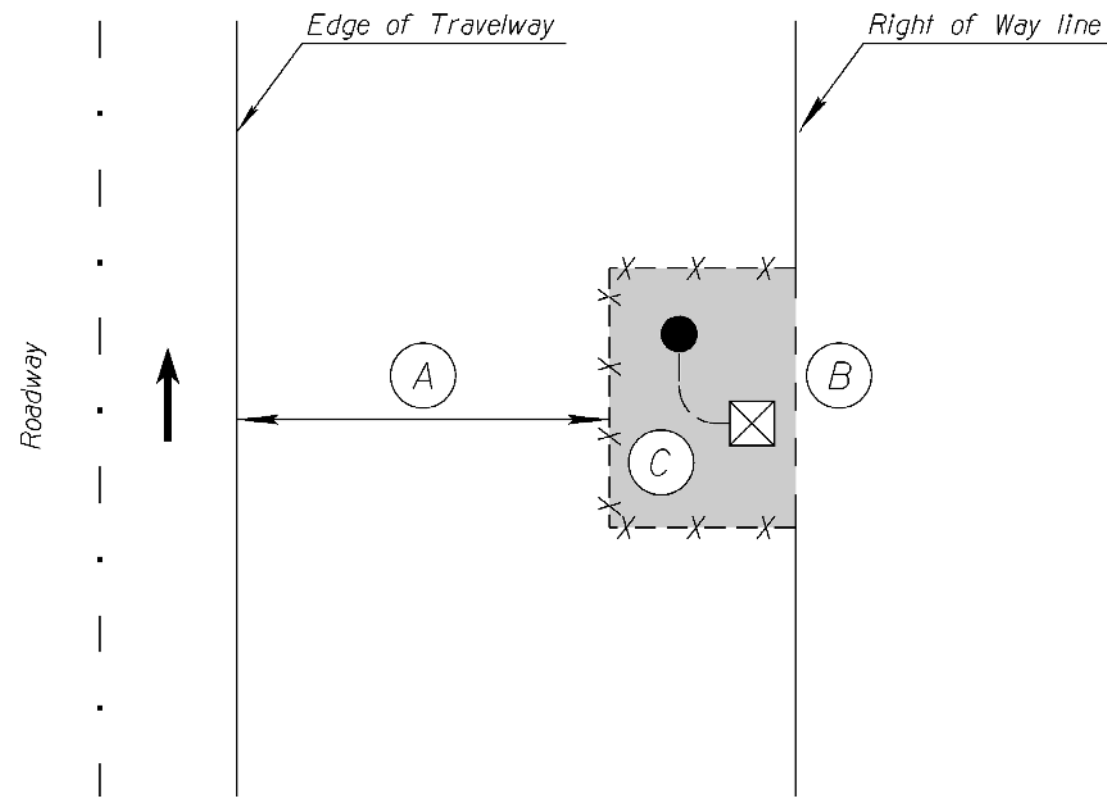
All removal costs are the responsibility of the owner/operator. Refer to the *ADOT Guide for Accommodating Utilities on Highway Right-of-Way* for additional details.





8 Appendix

8.1 Example Plan Sheet



Legend

- Small Cell Tower or Macro Cell Tower
- ⊠ Power Pedestal
- X- Enclosure (Macro Cell Only)
- Site Area

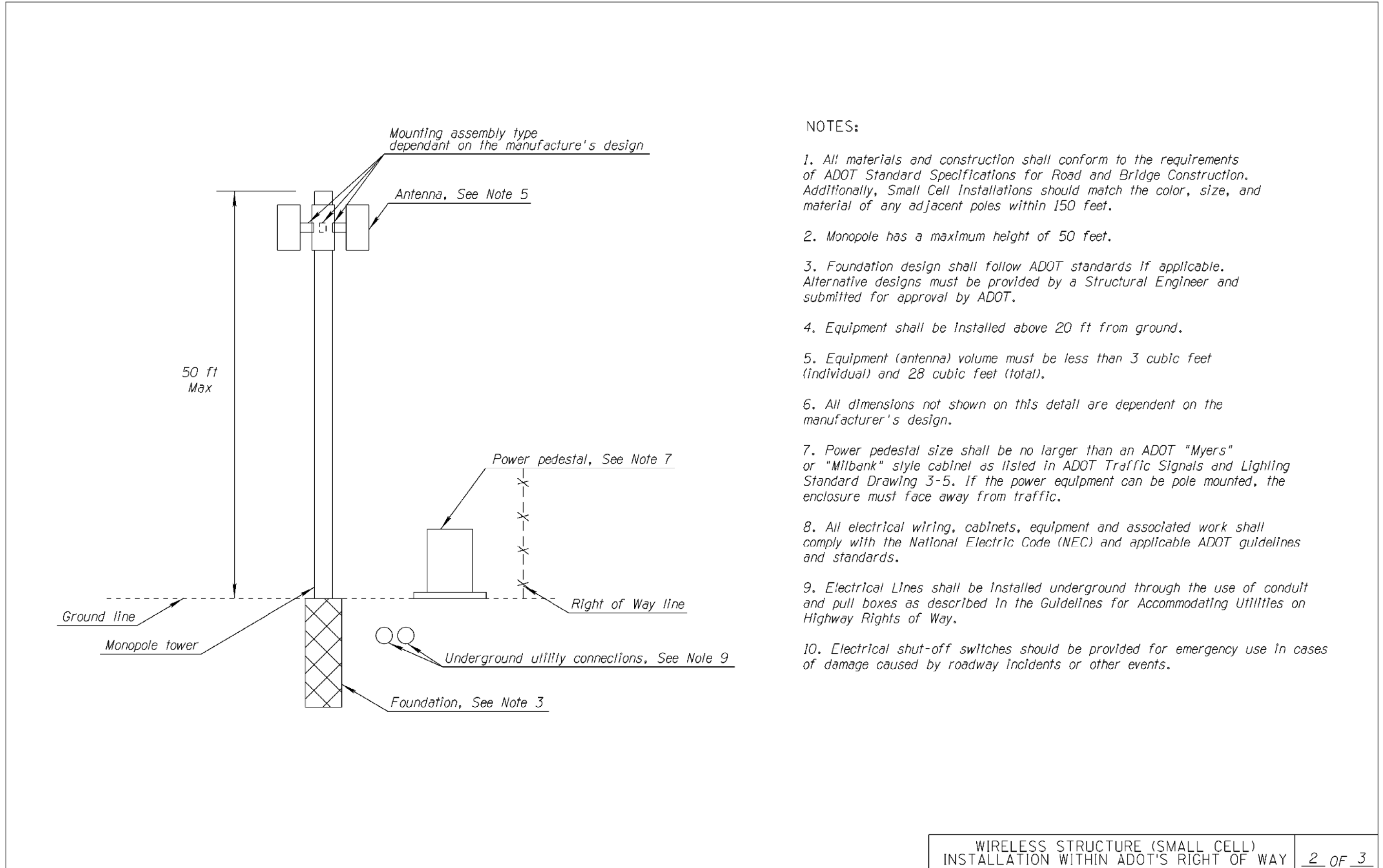
- (A) Wireless Facilities Installations shall be located outside the roadway clear zone as defined in the ADOT Utility Accomodation Guidelines.
- (B) Wireless Facility Installations shall be as close to the ADOT right-of-way line as feasible, taking into account ADOT needs for maintenance and any requirements set forth by the local jurisdiction.
- (C) With the exception of boxes/equipment, all utility connections shall be installed underground utilizing ADOT approved methods for pull boxes and conduits.

For Small Cell Installations, power pedestals and other equipment shall be installed parallel to or behind the installation as referenced to by the road travel way.

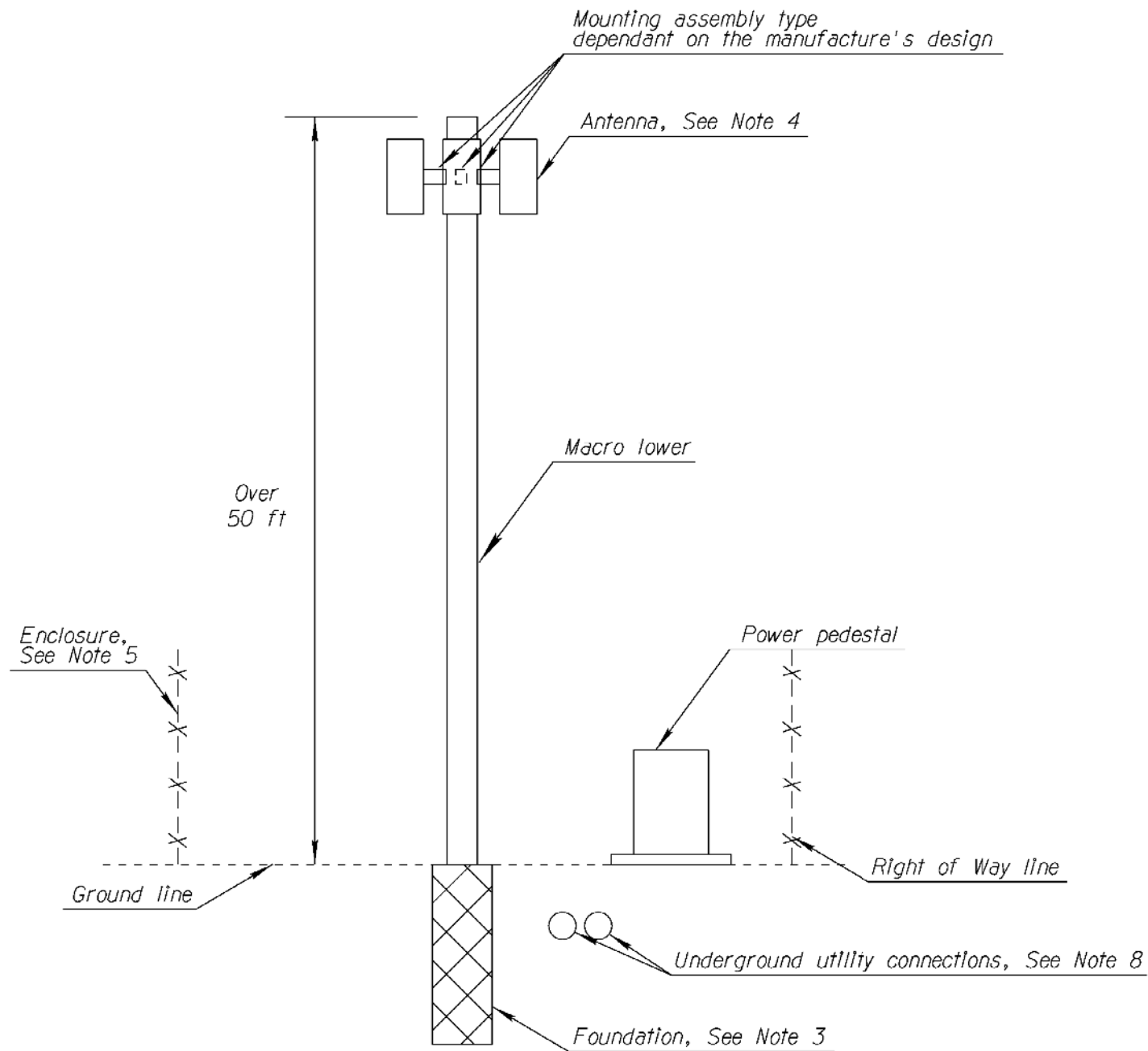
NOTES:

1. Unless otherwise approved by the Department, Installations shall be a minimum of 150 feet from a signalized intersection measured from the nearest traffic signal pole. Installations should be located a minimum of 300 feet from existing small cell wireless infrastructure. In cases where this is not feasible, collocation should be considered.
2. Site location and size depends on surrounding conditions and should be coordinated with ADOT District permit staff for approval.
3. Small cell wireless sites, inclusive of pole and required equipment, should not be enclosed. Macro sites are allowed enclosures using ADOT-approved materials and construction methods.
4. Wireless Facility Installations shall comply with the local planning, zoning, and/or building requirements of the underlying local jurisdiction. Including any applicable Historic District or Cultural Resource requirements.
5. Wireless Facility Installations shall not use ADOT's electrical service as the power source for any wireless infrastructure equipment. A separate dedicated power source shall be provided.

8.2 Example Profile Sheet



WIRELESS STRUCTURE (SMALL CELL)
 INSTALLATION WITHIN ADOT'S RIGHT OF WAY 2 OF 3



NOTES:

1. All materials and construction shall conform to the requirements of ADOT Standard Specifications for Road and Bridge Construction.
2. Macro tower has a height greater than 50 feet.
3. Foundation design shall follow ADOT standards if applicable. Alternative designs must be provided by a Structural Engineer and submitted for approval by ADOT.
4. Equipment shall be installed above 20 ft from ground.
5. The site area may be enclosed using ADOT-approved materials and construction methods.
6. All dimensions not shown on this detail are dependent on the manufacturer's design.
7. All electrical wiring, cabinets, equipment and associated work shall comply with the National Electric Code (NEC) and applicable ADOT guidelines and standards.
8. Electrical Lines shall be installed underground through the use of conduit and pull boxes as described in the Guidelines for Accommodating Utilities on Highway Rights of Way.
9. Electrical shut-off switches should be provided for emergency use in cases of damage caused by roadway incidents or other events.

ADOT

