

City of Chandler Utility Permit Manual

Requirements for Working in the City Rights-of-Way and Utility Easements

UDM-148



Development Services

Engineering Division
215 E. Buffalo Street
Chandler, Arizona 85225

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1. PURPOSE

The purpose is to describe the requirements for securing a permit for utility construction in the public rights-of-way.

The City of Chandler grants permissions for locating existing utilities and for construction or maintenance work in Public Rights-of-Way (ROW) and Public Utility Easements (PUE) by issuance of a permit as outlined in [Section 2 of Chapter 46](#) of the Chandler City Code.

The City of Chandler administers planning, permitting, and construction process in accordance with the [Arizona Utility Coordinating Committee \(AUCC\) Public Improvement Project Guide](#), the [Maricopa Association of Governments \(MAG\) Uniform Standard Specifications for Public Works Construction](#), the [City of Chandler Engineering & Design Standards Manual](#) and [City of Chandler Specifications & Standard Details \(Supplement to MAG\)](#). Plan review or field approvals may include exceptions to engineering standards, however all federal, state and local laws are still applicable as city staff does not have the authority supersede the jurisdictional authority of a body of law.

Encroachment permits (including annual blanket permits and as-built permits) are necessary to assure that all utilities are constructed and maintained; in proper location with adequate spacing, built in accordance with current specifications, and liability issues properly addressed.

The placement of traffic-control markings on pavements and curbs by the City and the marking of pavements, curbs and sidewalks by utility companies, engineers and surveyors to indicate the location of underground utility lines and monuments in connection with surveying, design, construction and maintenance work may be done without a permit; however, all other pavement, curb and sidewalk marking require a permit.

Engineered construction drawings (plans) must be submitted for review. The objective is to make optimum utilization of the space available in the public rights-of-way and public utility easements, to assure compliance with all City policies and specifications, to coordinate with other utility companies, agencies, and City project activities, and to reduce the risk and/or inconvenience to the public. Please note that many areas of Chandler are dual or multi-jurisdictional, meaning there is an overlap in some aspect or another in regard to permitting authority and multiple approvals (permit, license, [FAA Form 7460](#), etc.) may be required. Approvals must be obtained from all necessary agencies (e.g. ADOT, MCDOT, FAA, UPRR, SRP, RWCD, EPNG, etc.) for the specific project prior to the preconstruction meeting.

2. PERMIT PROCESS – OVERVIEW

Permit applications are submitted to the City of Chandler, Development Services Department either in person (215 East Buffalo Street) or on-line together with a digital copy of construction drawings, details, notes, pictures, project quantities, and any other additional information as may be required by the City for a particular project.

Upon receiving the application and appropriate drawings, details, notes, etc., City staff will log the request into the City's electronic permit system and route the documents for technical review.

This review includes checking for compliance with construction standards, approving alignments, verifying that the work is in the public rights-of-way or public utility easement, determining if other work is occurring at the same time or site, verifying that all joint trench opportunities have been incorporated into the design, checking for conflicts, determining if the work is proposed in newly paved streets or alleys, verifying that

proper pavement replacement or bore requirements have been incorporated into the plans, and verifying that all City requirements have been met. The City requires that all permitted projects comply with the [Arizona Utility Coordinating Committee](#) project models, including the [Joint Use Trench Model](#) (see Joint Use Trench section).

Upon completion of the review (approximately twenty (20) business days), the permit application will be either issued to the applicant or returned for further modification. Permits are generally issued to expire up to six (6) months from the date issuance, unless otherwise specified.

Special conditions or stipulations are added to the permit, so it is important that the applicant carefully review the permit for compliance. In addition, if the company obtaining the permit represents the company that has a License, Franchise or ROW Use Agreement with the City that is authorized by Chapter 46 of the Chandler City Code, then there may be other conditions attached to the permit and the company is responsible to adhere to these conditions.

If additions or corrections are required to the plans or permit application, the application will be considered incomplete and the applicant will be notified and asked to make corrections and resubmit.

3. PERMIT APPLICATION AND FEES

Permit applications are currently accepted electronically or by paper submittal. The City of Chandler encourages applications to be submitted electronically via the [Citizen Access Portal](#). A [step by step submittal guide](#) can be found under the [Telecommunications & Utility Franchise page](#) on the [City of Chandler website](#). Completing the fields of the web form application and submitting the form through the on-line portal is the electronic equivalent of the paper application form. Consequently, a paper copy of the application form is not required for on-line submittals. Quantities should be completed during the application process and will not be adjustable by the applicant after submittal. Entering the appropriate quantities is required and applications without quantities or with improper quantities may be cancelled and a new application will have to be submitted by the applicant.

To obtain a paper permit, two (2) documents and three (3) plan sets must be submitted before a permit will be issued. The documents required for a permit are the "[Civil Improvements/Encroachment Permit & Street Cut Application](#)" form (UDM-012), and the "[Certificate of Quantities for Encroachment Permits](#)" form (UDM-008). The forms are supplied by the City of Chandler and are available online under "SECTION 7: Off-Site Inspection and Permitting" of the [Unified Development Manual](#) (UDM).

Additional review fees of \$150 per sheet per review are added after 4 or more reviews.

Annual Permits (which are sometimes referred to as Annual Blanket Permits or Annual Maintenance Permits) are issued for emergency work and for reoccurring minor facility maintenance work in public rights-of-way and public utility easements only. Maintenance permits authorize a company to perform routine minor work where no excavation is involved. Such work includes only: splicing in existing vaults or pedestals, module swaps, removal/replacement of faceplates, conduit proofing, removal or replacement of a single node, and to remove or replace single line extenders (aka amplifiers or repeaters). New placement of aerial facilities is **NOT ALLOWED** as part of these permits including: aerial span replacement of faulty plant and fiber/coax cable including over lashing to existing plant, or installation of new strands. Emergency work restoration (aka. as-built permits) must be permitted under a separate encroachment permit after the work is completed under an Annual Emergency Permit. Contact the City's Utility Coordinator for verbal instructions on emergency work restoration at 480-782-3310.

Permittees must demonstrate proof of insurance with agreed to limits of liability and naming the City as additionally insured before issuance of any permits. Specifics for these may be specified in the License, Franchise or ROW Use Agreement with the City. The fee and insurance requirement may be satisfied by agreement, but proof of such should be on file with the City and updated as required.

Permit fees and other construction costs are collected upon issuance of each individual permit in accordance with the [Permit & Pavement Fee Schedule](#) – except as specified by a License, Franchise or ROW Use Agreement.

Seal coat charges are also collected upon permit issuance in accordance with MAG Section 336.2.4.

Permission to excavate in new streets will not be granted for two (2) years after completion of street construction, rehabilitation, or renovation. Exceptions will be granted for emergencies, which endanger life or property, interruption of essential utility service, work mandated by government, or services for buildings where no feasible means of providing service exists. A pavement restoration fee for early deterioration will be assessed for cutting new or resurfaced pavement less than six (6) years old. To reference current street cut restrictions please see the City's [Interactive Pavement Cut Restrictions Map](#). For more clarification refer to the [Pavement Cut Restrictions Flowchart](#) and detailed Chandler City Code, [Chapter 46-2.7](#).

4. CONSTRUCTION PLAN REQUIREMENTS

A. Plan View Requirements – Refer to the [Plan Review Checklist](#). Complete construction plan drawings must be provided in accordance with the following:

1. Include stationing and offsets for all existing and proposed above ground facilities within the proposed construction area.
2. Scale or dimension drawing to accurately depict relationships among the physical features within the construction area adequately enough to clearly identify potential conflicts. Preferably 1"=40' or 1"=20' for drawing scale.
3. Dimension ties of existing and proposed underground utility lines to monument lines in streets and to property lines in alleys and easements, not to back-of-curb, edge of pavement, sidewalks, etc. The lines tied to the dimensions should be clearly and easily identifiable and labelled or the dimension itself should be labelled to identify the line it is tied to. BoC and EoP lines should themselves be dimensioned from the monument line and the sidewalk width should be dimensioned.
4. All offsets and dimensions should be measured in decimal feet. Rounding to the nearest whole number for 1:40 scale, round to the nearest half-foot for 1:20 or 1:10 scale.
5. Show locations and limits of proposed construction to include existing and proposed rights-of-way and adjacent easements clearly labeled and dimensioned. Right-of-Way lines must be labeled "R/W", "RW" or "ROW." Clearly differentiate between City of Chandler and others' ROW.
6. Include property lines and either address numbers or parcel numbers.
7. Include correct street names.
8. Show linear trench/bore feet in ROW and private property on plans.
9. Joint trench must identify all companies sharing in the trench.
10. Include the location and size of all existing and proposed facilities to which the proposed construction will either cross or run parallel to within the right-of-way corridor. Lip-of-gutter, edge of pavement, sidewalk, driveway, back of curb, sanitary sewer lines, water lines, irrigation facilities,

other utilities, landscaping, structures, street lights and traffic signals must be shown and drawn to scale extending a minimum of twenty feet (20') beyond the construction limits. Simply using a symbol to indicate these facilities is not sufficient.

11. A legend should be included to show all symbology used on the plans. Distinguish each type of improvement and differentiate between existing or proposed.
12. For all plans, show all proposed improvements and associated notes in black and in bold. For lines such as R/W, PUE, P/L, EoP, BoC, Sidewalk, etc. do NOT use a color designated for AZ811 use. Gray or black, not bolded unless it is a proposed improvement, should be used. For color plans, show all existing linework and facilities in 811 Uniform Color Code for Marking Underground Facilities which can be found on the AZ811 website at <http://www.arizona811.com/>.
13. Storm drains, sanitary sewer lines, water lines, and gas lines over twelve inches (12") in diameter drawn to scale. All conduit systems over twelve inches (12") in diameter or width or larger must be shown to scale.
14. Symbology for structures greater than twelve inches (12") in width or diameter, such as pedestals, vaults equipment cabinets, etc. must be shown to scale.
15. Identify and dimension paving, sidewalk and concrete improvements. In areas with new development, all existing and proposed improvements must be shown.
16. Bore/trench depths must be in compliance with [City of Chandler Supplement to MAG Section 360 \(page 8\)](#) and City of Chandler minimum coverage requirements. See the City of Chandler [Minimum Coverage Requirements](#) and [Engineered Utility Bore Detail C-112](#) for additional information.
17. Proposed utility crossings should be at or as near as is practicable to a 90-degree angle to the road monument line.
18. Show all bore, receiving, and relief pits and potholes. The City waives the sewer main potholing requirement to help preserve the integrity of the streets. The contractor must check elevations at the up and down stream manholes. Bore, receiving, and relief pits should be stationed and offset. Potholes should not be stationed and offset.
19. Proposed improvements that fall within the vicinity of a proposed City Capital Improvements Program (CIP) or development project limits must be coordinated with the proposed capital or development project. The proposed improvements for all projects within and extending a minimum of twenty feet (20') beyond the construction limits must be shown on the plans and show that there are no conflicts.
20. Provide a complete title block to include the name and contact information of the designer or engineer.
21. Include a north arrow on each plan sheet, preferably with the orientation of north up or to the right.
22. Include a vicinity map indicating the nearest major cross streets.
23. Include an AZ811 note or symbol stating, "Contact Arizona 811 at least two (2) full working days before construction."
24. Provide a minimum 3-inch by 1.5-inch space for a City of Chandler Plan Review Approval stamp on each page.
25. Include or call out all MAG and City of Chandler specifications and details as needed. Refer to City of Chandler Unified Development Manual for all City specifications and details at <https://www.chandleraz.gov/government/departments/development-services/unified-development-manual>.
26. Include the City of Chandler [Civil Engineering Utility Company Notes](#) on the plans. The most current notes can be found at:

https://www.chandleraz.gov/sites/default/files/TelecommunicationsUtilityFranchise/UDM_UTILITYCOMPANYNOTES.pdf

27. Separation from all facilities must be in accordance with Federal, State, and local requirements. See section D of Part 4 of this manual (see below), the [Civil Engineering Utility Company Notes](#), and the [City of Chandler Supplement to MAG Section 608 \(page 13\)](#) and [Engineered Utility Bore Detail C-112](#) as applicable for City of Chandler requirements.
28. Include trench and bore cross section detail(s) showing width, depth and number of conduit(s) or pipe(s). Depth must be in accordance with the requirements in the City of Chandler [Minimum Cover Requirements](#). **No direct buried lines allowed, including on private property.** Unless otherwise noted, all conduits must be two (2) inch minimum PVC Schedule 40 or better. Conduits should be sized and placed to allow replacement of, or addition of, capacity to existing facilities without disturbing the surface.
29. All proposed equipment details must be shown and dimensioned on the plan such as pedestals, transformers & pads, switching cabinets, utility vaults, etc.
30. Include the utility company logo and project number.
31. Design the running line route out of the paved roadway. If this option is unavailable, identify the conflict on the plan with a note explaining why the design must encroach into the pavement. Please note that the City of Chandler prefers utility installations behind the sidewalk and back-of-curb. If this option is unavailable, the second option is in the median. The final option should be to install under the roadway due to traffic congestion and pavement damage concerns. A pavement cut of new pavement is not allowed (0-2 years) or may be subject to damage/restoration fees (0-6 years). See [section 2.7 of Chapter 46 of Chandler City Code](#) and section 7 of the [Permit & Pavement Fee Schedule](#).
32. Design the running line route to minimize the impact to the pavement, public right-of-way and the safety of the travelling public and to avoid congestion as required by [Chandler City Code Section 46-6.1\(A\)](#).
33. Comply with MAG and the City of Chandler Standard Details and Specifications. Refer to MAG [Section 336 & 360 and Detail 200-1](#), as well as the [City of Chandler supplements thereto](#) and additionally, City [Details C-103, C-104, and C-111](#).
34. All revisions to approved plans must be made distinctive on the revised plans. "Clouded" representation of revisions to approved plans is the preferred method. Changes to plans that have not been approved do not require "clouding".
35. Project is too large for a single submittal. Please limit each application to sections no longer than three-quarters (3/4) to one (1) mile in length or to no more than 5 separate locations unless all locations are contained within a single quarter section. Alternatively, a larger project may be accepted, at the discretion of the City, provided an additional file or files such as a dwg file or files may be required as a condition of acceptance.

B. Profile Requirements – Complete profile drawings showing the following minimum requirements must be provided for all projects that require utilities to be bored and for projects that are trenched in areas with proposed grade changes or proposed utility improvements. An accurate profile must be approved before starting the bore. These requirements apply not only to longitudinal and lateral street bores, but also utility bores outside paved areas crossing existing utilities.

1. Profile required in accordance with the City [Engineered Utility Bore Detail C-112](#) and the [City of Chandler Supplement to MAG Section 608](#) (page 13). The bore profile should start at the bore

drill rod entry point shown as point “A” in [MAG Section 608](#) Figure 608-1. Typically, two options for achieving this requirement are available. The first option is to provide a “designed” bore profile as part of the permit application plan submittal. This method usually requires current pothole data acquired through a separate potholing permit. In some cases, this option may be required by the City due to proposed facilities that have been designed as part of a City or development project that may or may not yet be installed in the field at the time of construction of this project, or to verify that the proposed running line will be possible to install in areas heavily congested with existing facilities. Alternatively, for most projects a blank profile sheet can usually be completed in the field based on preliminary potholing at the time construction to provide an “actual” bore profile. “Actual” profiles are required for all drilling projects, including “hog drilling” and for projects that already have “designed” profiles and must be verified and approved by the City inspector prior to starting the drilling operation.

2. Show all bore pit locations, including receiving and relief pits and indicate the sizes of each pit.
3. Depth of cover or elevations should be taken from the existing surface grade at intervals of one hundred (100) feet or less in the same alignment as the proposed construction. If proposed grade changes are planned (such as, due to a CIP or development project), minimum covers should be based on whichever elevations are the lower of the existing and proposed grades.
4. A vertical scale that adequately depicts the installation of existing facilities is required. Please specify scale (1"=2', 1"=3', 1"=4', 1"=5'). Use of different vertical and horizontal scales on profile details is preferred for clarity.
5. Separation from all facilities must be in accordance with Federal, State and local requirements. See section D of Part 4 of this manual (see below), the [Civil Engineering Utility Company Notes](#), and the [City of Chandler Supplement to MAG Section 608 \(page 13\)](#) and [Engineered Utility Bore Detail C-112](#) as applicable for City of Chandler requirements.
6. Existing and proposed grades at intervals of one hundred (100) feet or less in the same alignment as the proposed construction must be in a continuous line on the plans throughout the project.
7. Show all existing and proposed facilities that the proposed construction will cross. Storm drains, sanitary sewers lines, water lines, conduit systems, and other underground facilities (e.g. scuppers, catch basins, concrete footings, etc.), must be drawn to scale (showing approximate outside dimensions).
8. Show conduit/sleeve on profile. **No direct buried lines allowed.** Unless otherwise noted, all conduits must be two (2) inch minimum PVC Schedule 40 or better. Conduits should be sized and placed to allow replacement of, or addition of, capacity to existing facilities without disturbing the surface.
9. Elevations must be City of Chandler datum and indicated on the plans, if needed.

C. Underground and Overhead Requirements

1. Temporary overhead services for construction may be permitted for a six (6) month period, typically no more than 12 months is allowed and requires written approval from the Director of the Development Services Department. No final occupancy will be granted until all temporary services are removed. See [subsection F of section 4 of chapter 47](#) of Chandler City Code.
2. Minimum overhead clearances must be in accordance with NESC, section 23 (for example, typical clearances are 15.5 feet for insulated communications conductors and 16.0 feet for 0-750V electric supply cables).

3. Placement of new Aerial facilities or poles **IS NOT ALLOWED** including aerial span replacement of faulty fiber/copper/coax cable and over-lashing to existing plant or installation of new strand. Placement of new aerial equipment is also **NOT ALLOWED** including: pole mounted or strand mounted terminators, repeaters, line extenders, transformers, capacitor banks, aerial storage loops, splice enclosures, etc. All new facilities are required to be installed underground. See [section 9.2 of Chapter 46](#) and [section 4 of Chapter 47](#) of Chandler City Code.
4. Aerial overhead in City ROW or PUE must be shown and called out on plans. If a riser is to be placed, identify new connection or existing aerial plant being tied into and method of connection. Existing aerial fiber storage and splice enclosures are considered embargoed and must be converted to underground. A one-time installation of a riser stub cable may be permitted at the discretion of the City Engineer and should be sized appropriately and spliced accordingly so that future access to aerial splice enclosures is not required. New risers are not allowed on poles when high-voltage power lines (above twelve (12) kV) are present as required by [section 4 of Chapter 47](#) of Chandler City Code. Any permitted aerial installations are also required to meet any applicable standards outlined in the [City of Chandler Design Standards, Concepts, & Requirements for Small Wireless Facilities in the Right-of-Way](#).
5. Convert to first existing pole beyond property limits. Place underground all overhead utility lines, either within a proposed development or redevelopment project within public ROW or easements adjacent to the project. Utility poles and lines are defined herein as the poles, structures, wire, aerial cables and related facilities used in the distribution of electricity or in the transmission of telecommunications, telegraph, data, radio or video communications. This requirement includes both new and existing utility lines on and adjacent to the project, including lines which extend across public streets, alleys or easements adjacent to the property being developed or redeveloped. Existing utility lines adjacent to a project must be under-grounded up to the first existing pole beyond the limits of the property. This requirement includes the undergrounding of all existing overhead service lines attached to the lines to be removed along with necessary conduit, supports, restoration, etc., necessary to convert the service line from overhead to underground. The requirement must apply regardless of the existence of easements for overhead lines. When high-voltage lines (above twelve (12) kV or similar) are present, all lines other than the high-voltage lines must be placed underground. See [section 4 of Chapter 47 of Chandler City Code](#).
6. Verify joint trench opportunities with utilities for installations greater than six hundred (600) feet and for arterial crossings. The most common joint trench designs involve some combination of dry utilities, i.e. electric, communication (telephone, cable, cable TV, fiber optic, data lines) and gas, with the exception of high pressure (greater than 60 psi) gas lines and lines that are six (6) inches or greater in diameter. If the associated utilities decline joint trench opportunities, submit written documentation to Utility Coordination via email at tuf@chandleraz.gov, or submit the documentation along with the plan set at the time of permit application.
7. Place all service lines underground. See [section 9.2 of Chapter 46](#) and [section 4 of Chapter 47](#) of Chandler City Code.

D. Utility Clearance Requirements - Any and all more stringent separation requirements required by Federal, State, or Local codes or ordinances take precedence for the following:

1. A six (6) foot minimum horizontal separation from the exterior wall of any underground non-City utility must be provided to the exterior wall of storm drains, water and sewer mains. All fire

lines, regardless of size, (including hydrants and other fire service connections) are considered mains.

2. A three (3) foot minimum horizontal separation from the exterior wall of any underground non-City utility must be provided to the exterior wall of water and sewer service lines. This separation applies to open trenching only. Refer to MAG section 608 and the [City Supplement to MAG Section 608](#) for clearance requirements while boring.
3. A two (2) foot minimum vertical separation from the exterior wall of any underground non-City utility must be provided to the exterior wall of all wet utilities.
4. Utilities should be installed in standard locations to minimize the impact to the public right-of-way and the safety of the travelling public and to avoid congestion as required by [Chandler City Code Section 46-6.1\(A\)](#). For additional information regarding standard utility locations refer to the City of Chandler Standard Details and Specifications, Street Series, [C-200 – C-254](#).
5. Depth requirements must be in accordance with City of Chandler [Minimum Cover Requirements](#) or at the discretion of the City Engineer.

E. Above Ground Utility Structures – Any permitted above ground utility structure installations are also required to meet any applicable standards outlined in the [City of Chandler Design Standards, Concepts, & Requirements for Small Wireless Facilities in the Right-of-Way](#). All permit applications, excluding inside the boundaries of a new subdivision that place an above ground structure greater than twenty-four inches (24”) in height, width or depth must be accompanied by the following:

1. All above ground structures, over three (3) feet in height, must comply with the development standards of the underlying zoning district. See [Chapter 35 of Chandler City Code](#).
2. Identify potential location of structure within neighborhood. Select the site on the basis of aesthetics AND technical/engineering restrictions.
3. Equipment cabinets with air-conditioning must be enclosed by walls and setback a minimum of fifteen (15) feet from lots where the existing or planned primary use is a residential dwelling.
4. Structure must be placed on the same side as utility poles.
5. Do not block or impede trash truck access and alley access, including residential or commercial alley access gates or restrict gate functionality. Pedestals should be placed as close to property lines as practicable while adhering to all other clearance requirements and avoiding placements within drive areas such as blocking RV gates.
6. No structure to exceed three (3) feet in height in front yard of residential homes.
7. No structures over eighteen (18) inches in height are allowed within one (1) foot of the back-of-curb or the edge of a sidewalk. Utility structures, such as streetlight poles, utility poles, utility cabinets, or utility vaults are not allowed within five and a half (5.5) feet of the back-of-curb, but obstructions may be located as close as two and a half (2.5) feet from back of curb when adjacent to deceleration lanes, parking lanes, right turn lane or bus bays. See sections 4.2.4.3 through 4.2.5 in the [Engineering & Design Standards Manual Chapter 4 - Street Design and Access Control](#). The city, in its sole discretion, may increase that minimum clearance on a case-by-case basis to ensure the safe use of the sidewalk and adjacent area.
8. Provide three (3) photographs of the location of the proposed structure, one (1) at 90 degrees, and the other two at 45 degrees on either side of the proposed location. Identify the location of the proposed structure, mark the location with white paint or tape, use an orange traffic cone, etc.
9. Show the dimensions of all proposed structures (including poles) on the plans.

10. Include detail(s) of the actual structure(s) being proposed.
11. Verify sight-triangle compliance. No structure to exceed two (2) feet in height within the sight triangle. See Figure 4-D in the [Engineering & Design Standards Manual Chapter 4 - Street Design and Access Control](#) and [City Details C-246, C-247 and C-248](#).
12. The height of the equipment foundation must be two (2) inches above finished grade. If the foundation encroaches into any portion of the sidewalk (only allowed in certain cases), then the foundation must be flush with the sidewalk.
13. Equipment doors must not block the sidewalk when open.
14. Obtain a License from the City to install bus shelter in City right-of-way.
15. Electric Company Meter (aka Service Entrance Section):
 - a) To request an address for a private electrical service in City ROW indicate in the Detailed Description block of the permit application that “a new electrical service is being installed and a new address will be required”.
 - b) All electric company meters shall be installed in the ROW or PUE. The location of the meter equipment shall have minimum ingress and egress clearance from private property lines and driveways.
 - c) All electric company meters shall maintain minimum clearance from above-ground utility cabinets and below-ground utilities.
 - d) All electric company meters shall be installed in a location that does not impair or interfere with the SDE or SVT safety requirements of the City.
 - e) The electric company meters shall be screened or contained within a “Myers-type” or “Milbank-type” pedestal cabinet that is painted to match the ground equipment or as specified by the City. (see *Exhibit E1* of the [City of Chandler Design Standards, Concepts, & Requirements for Small Wireless Facilities in the Right-of-Way](#))
 - f) In the case where screening is not required, the City may specify the paint color of the electric company meter cabinet on a case-by-case basis.

F. Manhole/Vault Requirements – Manholes, vaults, and handholes must be approved in advance of placement.

1. Include a detail for each type and size of vault, (whether manhole or handhole) proposed on the plan. Show dimensions of all proposed vaults on the plans. Details for all components of multi-piece vaults must be included (lids, rings, collars, bottoms, tops, etc.).
2. Vault lids should be designed and installed outside of existing and future sidewalk areas whenever possible. Changes to vault placement in the field must be approved by the City Inspector prior to excavation.
3. Please place vaults outside of the paved area whenever possible. If this is not possible, please provide a note on the plans explaining why it is not.
4. Vaults should be placed as close to property lines as practicable while adhering to all other clearance requirements and avoiding placements within drive areas such as blocking RV gates.
5. Structural engineering specifications for vaults must be included for all vaults placed in the right-of-way. For vaults placed in high-traffic areas such as in the pavement or drivable areas of an alley, a concrete vault with a concrete base with a traffic rating of H20/HS20 or better is required. Concrete vaults with a concrete base must include a sump, a concrete lid, a frame and cover that meets [MAG Standard Details 422-425 and the associated MAG specifications](#). All precast

manhole bases must be placed on 8 inches minimum of ABC as required by [MAG section 702](#) compacted to 100% maximum density. All manholes and hand holes must be installed per manufacturer, MAG and City of Chandler specifications.

6. Where the meet point between two companies is not a single vault (which is the 1st choice of the City since the DEMARC between the companies is typically only one splice/connection point in one of the vaults anyway) vaults should be placed as close together as possible (no more than 3 feet apart, but preferably butted up against each other with a conduit cored through the sidewalls) so as not to create a space between the vaults that neither company claims Locate responsibility for.

5. CONSTRUCTION REQUIREMENTS

A. Notification Forms and Construction Schedules

1. All projects require the Permit (Inspection) Notification to be submitted a minimum of 24 hours before the requested start of work date via the City of Chandler [on-line inspection scheduling system](#). Do not provide notification on the inspector's cellular telephone or voice mail.
2. All projects within City of Chandler ROW or PUEs are required to hold a preconstruction meeting with City inspector unless otherwise specified in the permit conditions or approved by the City inspector. Projects that are indicated on the permit to require a precon may be subject to fines, penalties, or additional requirements (such as pavement reconstruction) if the contractor fails to contact the inspector listed on the permit to set up the preconstruction meeting.
3. All projects crossing a paved alley, residential, arterial or collector street require a preconstruction meeting.
4. All work must be completed as described in the Approved construction plans, or be field approved with the city inspector's initials giving approval of deviation prior to deviating from the approved plans.
5. Prior to the preconstruction meeting the AZ811 ticket must be cleared and the locate markings must be verified by the contractor. If markings are missing the contractor should contact AZ811 to have the missing locate markings placed and the city inspector to reschedule the preconstruction meetings. For larger projects, verify with the city inspector if partial locates are acceptable.
6. Normal inspection hours are 6:00 a.m. to 3:30 p.m., Monday through Friday. Any work outside of this window requires a [Request for Inspection Outside of Normal Business Hours form](#) to be completed and signed by a representative of the company that is the permit holder and emailed by that company to permit.notification@chandleraz.gov a minimum of 48 hours in advance of the request date.
7. In accordance with [Chapter 11-10.2 "Construction Noise", subsection B, of the Chandler City Code](#) construction work occurring within five hundred (500) feet of a residential property may not begin prior to 5:00 a.m. and may not continue beyond 10:00 p.m. on weekdays. Notwithstanding the foregoing, construction work occurring within five hundred (500) of a residential property shall not begin prior to 7:00 a.m. and must stop by 7:00 p.m. on any Saturday, Sunday or holiday. For the purposes of this section, a "residential property" is defined as a lot, parcel or tract of land containing one (1) or more dwelling units, and distance is measured from lot lines with any intervening public right-of-way being included in the measurement. Work outside of the normal inspection hours requires an approved [Request for Inspection Outside of Normal Business Hours form](#). An exception may be granted to this requirement should the City of Chandler require the work to be performed at night and this exception must be approved by the Development Services Department with a

condition stating such on the approved permit form. The Directors of the Development Services or the Public Works and Utilities Department may revoke any encroachment permit granted such an exception upon complaint based upon substantial evidence that the construction activity caused unreasonable disturbance in the vicinity of the work site. Chandler Police or a city official may also shut down a work site at any time for any reason they deem to be necessary, generally this will be for a safety concern related to the work activity or traveling public or in for disturbing the peace if working outside noise ordinance hours.

B. All Installations Must:

1. Have a copy of the approved permit, Approved or Approved as Corrected stamped construction plan, and traffic control plan and other agency permits, licenses and forms (as applicable) available during the preconstruction meeting and on-site during construction at all times.
2. Submit notification of work through the inspection request process a minimum of 24 hours in advance.
3. Submit notifications to residents, homeowners associations, and businesses in accordance with [DSP-201](#).
4. Be governed by the City [Engineering & Design Standards Manual Chapter 7 - Traffic Barricade Design](#) or added specific traffic regulation, which must be attached to the approved permit whenever applicable. All sidewalks must remain open or have proper ADA compliant detours provided.
5. Have crews working with and wearing proper personal protective equipment for the type of work being performed.
6. Conform to the latest applicable [MAG Uniform Standard Details and Specifications](#) and the current [City of Chandler Supplements thereto](#).
7. For all alley work, no matter the size of the work/staging area, have a warning sign acknowledging construction ahead at each alley entrance.
8. Not Hole-hog bore on arterial and collector streets.
9. Have prior City approval for all changes and variances when utility conflicts are found during the construction phase, by the inspector or by an approval plan revision as will be determined by the City inspector
10. Include trench excavation coverings for all excavations in the right-of-way and PUE whenever work is not active or the trench is not actively being monitored by the utility company or the contractor. Steel plates are required for covering trenches in the paved section of a roadway or sidewalk in accordance with MAG Standard Detail 211. Steel plates or plywood coverings are required for all trench excavation coverings in landscaped areas, unless otherwise completely caged off and made securely inaccessible to the public. If plywood coverings are utilized, they must be installed or secured in such a way as to prevent accidental displacement by the wind, equipment or other users of the right-of-way and must be capable of supporting, without failure, at least twice the weight of equipment, materials and users of the right-of-way that may be imposed on the cover at any one time.
11. Not utilize small plates. 1 foot by 1 foot and 2 foot by 2 foot plates are prohibited.
12. Have all trench plates be recessed on streets where the posted speed limit is 30 mph or greater. Steel plates must be able to withstand heavy traffic without any movement. Steel plates must recess on top of a milled surface of eighteen (18) inches minimum on all sides of the trench. Refer to [MAG Detail 211](#).
13. Have all trench plates that are not required to be recessed, to be installed in a manner that is considered by the city to be safe to the traveling public. This means that no sharp edges or corners

should extend beyond the edge of a sidewalk protruding over the gutter; plates must not be installed at an angle on a slope where there is separation from surface; and plates should be navigable by people with accessibility disabilities. For example, a plate installed on top of a sidewalk panel should have a minimum of 12-inches of cold patch or similar material installed on the sides, in line with the traveling path, to allow for a wheel chair to safely traverse over the plate.

14. Have all plates removed within four (4) calendar days and all backfill and restoration completed within seven (7) business days unless otherwise approved by the City inspector. Steel plates must be picked up when not in use and not be stored in the right-of-way, PUE, in an alley, or along the frontage of a business or residential property.
15. Have all barricades stored away from streets, alleys, sidewalks and occupied buildings so as not to be a hazard to the traveling public and all excess barricades must be removed from the job site daily.

C. Traffic Control Plans – Work in the street will require an approved construction plan and site-specific traffic control plan (TCP) before beginning construction.

1. Traffic Control Plans must be submitted a minimum of 24 hours prior to the requested start time. Traffic Control Plans submitted on Fridays, weekends, or holidays, will have the 24 hour time period begin on the next business day.
2. Traffic control plans can be discussed, but TCPs are approved by the Traffic Engineering Division. For questions, plan revisions, or date revisions, please contact the Traffic Engineering Inspector, at (480) 782-3453 (office), or tcp@chandleraz.gov (email).
3. Construction signs – Refer to [City Code Section 46-2.7\(E\)](#) outlining the City ordinance pertaining to construction signs.
4. Any work outside of the time frame requested is not permitted, and is subject to sanctions as described in the City [Engineering & Design Standards Manual Chapter 7 - Traffic Barricade Design](#).
5. The contractor is responsible to maintain the work zone and jobsite in a safe and clean manner.
6. The contractor must ensure that all traffic control devices no longer needed are removed from the roadway prior to the Job Foreman leaving the job site for the day.
7. Once all restoration work has been completed that the TCP was needed for, all traffic control devices need to be removed. If the work was completed prior to the approved end date of a TCP, an email needs to be sent to tcp@chandleraz.gov to cancel the TCP so that it can be removed from the Traffic Restrictions map and the work area can be made available for other contractors to work.
8. Refer to City of Chandler [Engineering & Design Standards Manual Chapter 7 - Traffic Barricade Design](#) for barricading requirements and additional information.

D. Vacuum excavation in the right of way must be accomplished as follows:

1. Sanitary sewer location and depth must be verified by checking BOTH the up and downstream manholes.
2. A permit is required for all utility location excavations. Refer to City of Chandler [Detail C-111](#) for vacuum excavation spacing requirements.
3. Backfill and restoration must be in accordance with section H of this document
4. 1 foot by 1 foot and 2 foot by 2 foot temporary pot-hole plates are not allowed. If crews choose to use them as a work zone safety device, they should be used only during the bore process with a crewmember onsite and only within barricaded areas. Pot-hole plates must be removed daily and

either restored temporarily or permanently. Permanent restoration is required to be completed within 7 working days.

5. Pothole a two (2) foot circumference around utility in accordance with Blue Stake Law (ARS 40-360.21 through 40-360.32). The utility must be found. If it is not found, then locates should be recalled or the utility operator should be contacted to assist with locating the facility.
6. An approved traffic plan must be on site with the crew.
7. Unauthorized nighttime digging is not allowed and penalties will be assessed if caught doing so.
8. At least one hole at each location must be marked with the initials of the excavating company and pothole date. A spray stencil is acceptable.

E. Horizontal Directional and Hog Drilling

1. Bore Profiles are required for all horizontal drilling in accordance with the City [Engineered Utility Bore Detail C-112](#) and the [City of Chandler Supplement to MAG Section 608](#) (page 13), including “hog drilling” and for projects that already have “designed” profiles and must be verified and approved by the City inspector prior to starting the drilling operation..
2. All Horizontal Directional Drilling must be accomplished in accordance with [MAG section 608](#) and the [City of Chandler Supplemental Specifications and Details](#).
3. Before street bore or trench that crosses a roadway, the contractor must schedule a field meeting with the City Inspector to verify:
 - a. Each crew has a copy of the approved plans and permit.
 - b. A utility survey was conducted. The utility survey is conducted to accurately locate all existing (active or abandoned) utilities within the area of interest that could conflict with the planned installation. Verification of survey will be submittal of an “actual” bore profile, which indicates utility crossing inverts and clearances and identifies the exterior bounds and depths of all structures such as vaults thrust blocks, above ground structure foundations, encasement of duct banks, etc. The bore profile should start at the bore drill rod entry point shown as point “A” in [MAG Section 608](#) Figure 608-1.
 - c. Verification of obvious existing conditions before construction. Existing site conditions along and adjacent to the alignment should be carefully documented (photos and/or video is recommended) to support against claims. Without documentation the City will likely take the word of the claimant.
 - d. The City inspector identifies the restoration limits.
4. Tracing or locating wire must be installed.

F. Abandonment of Facilities – For all facilities that are being abandoned please refer to [Abandoned Utilities in the Right of Way](#) Policy.

G. Utility Inspection and Testing – The utility company is to inspect their work with the City providing periodic oversight. The City inspector will be responsible for inspecting the restoration of City facilities in accordance with city standards, MAG requirements and City Supplements to the MAG requirements. Testing will be required according to MAG specifications and City of Chandler Supplements to the MAG. Tickets and test results must be given to the City’s utility coordinator or to the City inspector upon request.

H. Backfill and Restoration Requirements:

1. Trenches must be cleared of excess debris, (i.e. cans, trash, etc.) before slurry is installed.

2. Final backfill must be CLSM per [MAG Section 604](#), ABC per [MAG Section 702](#), or granular material or native backfill material per [MAG Section 601.4.8](#). Typically, half-sack ABC slurry is recommended for all work within the right-of-way.
3. Slurry must aerate (air dry) for a minimum of two days prior to permanent pavement installation.
4. All restoration must be to like or better conditions. When decomposed granite (DG) replacement is required the DG must be of the same size, type and color and be approved by the City Inspector prior to installation. Any trees, shrubs or bushes removed, must be replaced or relocated as directed by the City Inspector. All landscaping irrigation lines must be repaired, replaced or relocated to deliver water to new plant locations. Any turf removed must be replaced with sod or seeded and covered with soil. Any grade adjustments not approved on the plans must be approved by the City Inspector prior to making those grade adjustments.
5. Asphalt restoration must be in accordance with [MAG Detail 200-1 and Detail 200-2](#).
6. Concrete restoration must be in accordance with [MAG Section 340. Any concrete section \(i.e. sidewalk, curb and gutter, ADA ramps, PCCP, valley gutter, driveway, etc.\) must ultimately be removed and replaced from joint to joint.](#)
7. Sidewalk ramp restoration must be in accordance with City of Chandler Details [C-243, C-245, C249, C-257 & C258](#).
8. Spoil piles and contaminated millings must be removed. Back-dragging dirt is prohibited.
9. AC millings must be replaced and compacted over the excavation area.

I. Overtime Request – Overtime including after-hours, weekend and holiday work will need to be scheduled and approved by the City inspector 24-48 hours before the overtime work is to occur. A letter authorizing payment of overtime work on company letterhead from an authorized agent of the permit holding company in conjunction with the City of Chandler [“Request for Inspection Outside Normal Business Hours”](#) must be submitted to the inspector or emailed to permit.notification@chandleraz.gov by the utility representative accepting responsibility for payment before the City can approve overtime work. The utility company must be notified and approve overtime work. The request from the utility company must include a contact name, phone number, email address, and mailing address for the person accepting responsibility to ensure the overtime invoice from the City gets processed and paid. All invoices are due at the time of issuance and are typically sent out on a monthly basis unless other arrangements have been made with the City.

6. RECORD DRAWINGS (INSTALLATION RECORDS) – “Record Drawings” must be maintained by the owner of the facility in accordance with State Statutes and made available to the City upon request.

This manual summarizes selected City Code and City of Chandler Design Manual provisions to assist private utilities and developers installing facilities in rights-of-way, PUEs and City easements. If any discrepancies exist between this manual and the City Code or the City of Chandler Technical Design Manual (TDM), the respective Code provision or City of Chandler TDM must prevail over this manual.

For clarification or more information, please contact the Engineering Division’s utility coordinator at 480-782-3310.

7. UTILITY PERMIT MANUAL SUPPLEMENTS

- [Utility Company Encroachment Permit On-line Application Submittal - Step-by-Step Example](#)
- [Civil Engineering Utility Company Notes \(Supplemental Conditions for Approval\)](#)
- [Plan Review Checklist](#)
- [Pavement Cut Restrictions Map](#)
- [Pavement Cut Requirements Flow Chart](#)
- [Minimum Coverage Requirements](#)
- Sight Distance Compliances (see Figure 4-D of [Engineering & Design Standards Manual Chapter 4 - Street Design and Access Control](#) and City Details [C-246](#), [C-247](#) and [C-248](#)).
- [Permit & Pavement Fee Schedule](#) (see section 7 for Development Services)
- [Inspection Request - Work Notification Instructions](#)
- [Notification Requirements to Residents, HOAs and Businesses \(DSP-201\)](#)
- [Utility Work Preconstruction Meeting Form](#)
- [Certificate of Insurance Example](#)
- [Arizona ROC License Requirements for performing work in the public rights-of-way](#)
- [Engineered Utility Bore Detail C-112](#) and Blank Bore Profile Sheets [8.5x11](#) & [11x17](#)
- [Abandoned Utilities in the City's Right of Way](#), PWU-130
- [Request for Inspection Outside Normal Business Hours](#)
- Ramp Replacement Requirements (see City Details [C-243](#), [C-245](#), [C249](#), [C-257](#), [C-258](#) & [C-259](#))
- [Regulatory Guide on Ground Laid Temporary Facilities \(aka "Temp Lines"\)](#)
- [Temp Line Resolution Process](#)
- [List of Approved Products](#)
- [Civil Improvements/Encroachment Permit Application, Street Cut Application & Certificate of Quantities](#) (for paper application submittals)
- [Township, Range, Section Index Map](#)