Utility Plan Review Checklist

Reasons for Permit Rejection:

A. PLAN REQUIREMENTS – Refer to the Utility Permit Manual (UDM-148). 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. Plans must be legible and decipherable. Scale or dimension drawing to accurately depict relationships among the physical features within the construction area and adequately enough to clearly identify potential conflicts. Preferably 1″=40′ or 1″=20′ for drawing scale on an 11x17 page. Font size must be no smaller than 0.06 or 1/8th inch when printed, regardless of page size and 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 being 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 addresses or parcel numbers and lot lines

❑ 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 (including abandoned) 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 and 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, waterlines, and gas lines over twelve inches (12″) in diameter must be shown drawn to scale. All conduit systems over twelve inches (12″) in diameter/width or larger must be shown to scale.

❑ 14. Symbology for structures greater than twelve inches (12″) in width or diameter, such pedestals, vaults equipment cabinets, etc. must be shown to scale.

- ❑ 15. Identify and dimension paving improvements. In areas with new development, all existing and proposed paving improvements must be shown.
- ❑ 16. Bore/trench depth 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. Please include a utility coordination block on the cover sheet.
- ❑ 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 the 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 the Utility Permit Manual (UDM-148), 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. Please include a utility coordination block on the cover sheet.

❑ 36. Where proposed projects adjoin, all plan sets must call out the adjoining project with a note at the tie-point(s).

❑ 37. Where the applicant is occupying infrastructure owned by another provider (3rd party), that 3rd party provider must be identified on the plans as the infrastructure owner.

B. PROFILE REQUIEMENTS – 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 per 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.

Two options are typically available:

- ❑ a. Provide a "designed" bore profile using current pothole data. Potholing requires it's own separate 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 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 utilities.
- ❑ b. Or, in most cases, by completing a blank profile sheet in the field based on preliminary potholing at the time of 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 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 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 the Utility Permit Manual (UDM-148), the Civil Engineering Utility Company Notes, and the City of Chandler Supplement to MAG Section 608 (page13) and Engineered Utility Bore Detail C-112 as applicable.

❑ 6. Existing and proposed grades at intervals of one hundred (100) feet or less in the same alignment as the proposed constructions 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 sewer 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 to 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 must be placed 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 street crossings.

- The most common joint trench designs involve some combination of dry utilities, i.e. electric, communication (telephone, cable, video service, fiber optic, data lines) and gas, with the exception of high pressure (greater than 60 psig) 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. Maintain 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. Maintain 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. Maintain 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 STRUCTURES

❑ 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. Proposed above ground structures must not block the view of existing signs.
- ❑ 8. 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 the 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.
- ❑ 9. 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, use an orange traffic cone, etc. Photosims are not acceptable for this purpose and the photo must have been taken within 90 days prior to the submittal of the permit application to accurately show the current field conditions of the area.
- ❑ 10. Show the dimensions of all proposed structures (including poles) on the plans.
- ❑ 11. Include detail(s) of the actual structure(s) being proposed.
- ❑ 12. 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.
- ❑ 13. 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.
- ❑ 14. Equipment doors must not block the sidewalk when open.
- ❑ 15. Obtain License from the City to install bus shelter in City right-of-way.
- ❑ 16. 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

❑ 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. Typically, half-sack slurry is required for ALL WORK within the right-of-way, especially in areas where manual or mechanical compaction is not feasible, such as in the gaps around handholes or vaults. Subsidence due to failures of poor compaction is a public safety hazard.

❑ 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.

❑ 7. A single provider may not singularly occupy double the typical industry accepted right-of-way space with two vaults installed next to each other or less than typical industry distances without a special need, where such a need must be clearly documented on the plans.

Please Correct All Deficiencies and Resubmit

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