AMAFCA Guidelines for Utility Installations at AMAFCA Facilities

June 2026

Introduction

For the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) to ensure the flood control function of their facilities and rights-of-way, and to regulate the use of those facilities, these guidelines have been compiled to provide information to utility companies, local government agencies, and private entities who desire to construct utility facilities within the limits of AMAFCA rights-of-way. These guidelines and design criteria are intended for modifications or relocations to existing utility facilities and proposed new utility facilities.

For the purposes of this document, utilities are any above or below ground equipment used for the transmission of communications or the production, storage, transmission, sale, delivery, or furnishing of water, natural gas, petroleum products, electricity, sewage, drainage, or other commodities.

The following AMAFCA documents shall also be referred to for any utility design or construction project:

- AMAFCA General Construction Notes, Standard Drawings, & Specifications
- Utility Agreement (UA)
- Temporary Construction Access License (TCAL)

Design/Plan Review

It is recommended that AMAFCA be involved in the conceptual design prior to the preparation of detailed design and construction documents. This early involvement of AMAFCA staff may provide site specific recommendations that will avoid unnecessary design modifications later in the process.

Complete plans and specifications shall be provided to AMAFCA allowing adequate time for review and comment. Final approval of the design and construction documents, and issuance of a Temporary Construction Access License (TCAL) shall not be provided until AMAFCA comments have been adequately addressed.

The proposed utility plans shall include the following information:

Plan View

a. AMAFCA facility name
    i. Stationing numbering if applicable or available
b. North direction arrow
c. Placement of the utility within the facility right-of-way with appropriate distances from known structures or boundaries indicated for reference.
d. Location of benchmarks both permanent and temporary
e. Location and dimensions/limits of proposed boring pit locations or open cut excavations.

f. Location and dimensions of proposed construction zone
g. Location and dimensions of proposed utility access vaults to be used for servicing the utility. Note that utility access vaults should be situated outside of the AMAFCA right-of-way. If the vault locations must be within the AMAFCA right-of-way, they shall be located in locations that do not inhibit AMAFCA maintenance operations.

Profile View

a. The entire cross section of the proposed utility facility including and proposed limits of excavation and extending to the limits of the work or available right-of-way, whichever is greater.
b. The location of the proposed facility, including grade and invert elevations and top of casing or tunnel elevations
c. Distance from the top of the utility facility to the bottom of the AMAFCA facility or from the bottom of the overhead utility facility to the top of the AMAFCA facility.
d. Location, size, and depth of any pits required for boring operations and the type of intended shoring to be used for the pits.
e. Locations and elevations of utility access vaults. Note that utility access vaults should be situated outside of the AMAFCA right-of-way. If the vault locations must be within the AMAFCA right-of-way, they shall be located in locations that do not inhibit AMAFCA maintenance operations.

General Design and Specifications

The following is to be incorporated as part of the proposed utility facility. It is not intended to be an exhaustive list and the Utility is encouraged to provide additional information as it deems advisable in connection with the proposed facility.

a. All plans and specifications shall bear the seal of the appropriate Professional Engineer, licensed in the State of New Mexico.
b. In all cases, full consideration shall be given to the protection and operational capabilities of the AMAFCA facility during construction. Final installed facilities shall not adversely affect the function or the ability of AMAFCA to operate or maintain the facility.
c. All construction, activities, maintenance, inspection, repair, dust control, relocation and removal of any improvements shall be accomplished at the sole expense of the Utility, and subject to inspection by AMAFCA. All construction activities shall be completed as shown on the approved plans and specifications previously approved by AMAFCA and in accordance with applicable laws, rules, and regulations then in effect. The Utility shall notify AMAFCA in writing ten (10) business days before commencing any work in AMAFCA's right-of-way. The Utility will provide AMAFCA with the Contractor's contact information, including but not limited to project manager's contact information as well as location and dates of all pre-construction meetings and any scheduled progress meetings.
d. All construction work performed, or materials used within the limits of AMAFCA's right-of-way, shall be subject to periodic onsite inspection by AMAFCA staff or designated representatives. Any comments by AMAFCA as

a result of such inspections shall be directed to the Utility for review. Utility may be required to reimburse AMAFCA for certain costs incurred for on-site inspection and related services performed by AMAFCA staff or designated representatives. All construction activities associated with the project shall be completed in such a manner so as not to damage or interfere with the operation and maintenance of AMAFCA's flood control facilities and equipment. If any activities of the project endanger the flood control function of any AMAFCA facilities, AMAFCA shall notify the Utility and it shall promptly commence to correct such condition and to restore the AMAFCA facilities at Utility's sole expense. In the event Utility fails to commence such repairs within seventy-two (72) hours of such notice, AMAFCA shall commence to make such repairs to correct such condition at the expense of the Utility.

e. Any existing survey control monuments that are disturbed or damaged as a result of the project activities, shall be replaced by a surveyor licensed in the State of New Mexico at the Utility's expense. AMAFCA shall be notified at least two business days (48 hours) prior to any monument placement.
f. The Utility shall maintain or repair all AMAFCA infrastructure including but not limited to fencing, gates, signage, and all other facilities. All repairs will be performed to return facilities to original or AMAFCA-approved condition.
g. The maximum wheel load allowed in the AMAFCA channel shall be twelve thousand (12,000) pounds.
h. No tracked vehicles will be allowed in AMAFCA hard-lined or concrete channel without written permission from AMAFCA.
i. Cranes operating with outriggers in the channel shall limit the outrigger footprint load area to less than twelve thousand (12,000) pounds.
j. Regardless of the size of the project, an erosion and sediment control plan to minimize sediment entering AMAFCA's Facilities will be required. The plan will be provided and approved by AMAFCA prior to construction.
k. If the project requires the submittal of a stormwater pollution prevention plan (SWPPP), the plan will be submitted to AMAFCA for approval before the Notice of Intent (NOI) is submitted to EPA, if and only if, the plan is allowed to use any AMAFCA Facility as a Best Management Practice (BMP) or if a BMP will inhibit the function of an AMAFCA Facility.
l. Any fines levied due to any activities that violate conditions of the AMAFCA MS4 Permit NMR04A000 shall be paid by the Utility.
m. If appropriate, a soils investigation and soil slope stability analysis will be required to ensure the stability of any excavations within the slope limits of the AMAFCA facility. The analysis will assume the channel is functioning at full design capacity and flowing at design depth and rates. A copy of the analysis will be submitted to AMAFCA for review.
n. All utility installations installed above or below an AMAFCA facility will be designed and constructed with the longest service life and relatively minimal maintenance and service requirements.
o. Considerations shall be made for known or planned futures expansions of the facility to minimize impacts to the AMAFCA facility when those expansions occur.
p. All utilities shall be designed in accordance with currently applicable standards, codes, and regulations for the respective type of utility.

q. Refer to AMAFCA's General Construction Notes, Standard Drawings, & Specifications for additional requirements.

Design and Installation Criteria for Underground Utilities

The following information is provided for those utilities that will be installed underground at AMAFCA facilities. Please refer to AMAFCA Standard Detail 502 for Buried Crossings for additional information.

a. Installation of underground utilities at AMAFCA facilities will be installed between October 15 and May 15 unless prior written approval is given by AMAFCA.
b. A utility that crosses an AMAFCA facility shall do so at a right angle to the AMAFCA facility.
c. A minimum clearance of four (4) feet is required between the underside of a lined channel to the top of the casing or tunnel lining crossing.
d. Unlined facilities shall have a scour analysis study conducted per AMAFCA's *Sediment and Erosion Design Guide*, based on at minimum the one hundred (100) year storm event and existing soil characteristics. The top of the encasement or tunnel shall be at least two (2) feet below the calculated scour depth. A minimum clearance of five (5) feet is required between the invert elevation of an unlined or natural channel to the top of the casing or tunnel lining crossing.
e. Minimum clearances shall comply with all state, federal, and applicable utility code requirements, but in no case shall the clearance be less than as indicated above.
f. Temporary excavations within or adjacent to AMAFCA facilities may be allowed with prior AMAFCA approval and if they meet or exceed the following criteria:
    i. Excavation slopes shall not exceed two (2) horizontal; one (1) vertical.
    ii. If the excavation is to occur in a flood control facility that is in a cut section, the top slope limit of excavation must be a minimum of fifteen (15) feet horizontal distance from the top edge of the facility.
    iii. If the excavation is to occur in a flood control facility that is in a fill section, the top slope limit of excavation shall be no closer than the outside toe of the fill.
g. Auger-cast drilled pilings or shallow spread foot foundations may be permitted with prior AMAFCA approval based on location. Impact driven pilings are not permitted.
h. During excavation, all surface drainage shall be directed away from open trenches.
i. All subgrade, backfill and embankment shall be backfilled and compacted to 95% of maximum density as determined by ASTM D-1557 (Modified Proctor)
j. Backfill material shall be placed in lifts not to exceed twelve (12) inches.
k. Compaction of backfill material shall be performed with mechanical tampers of the appropriate size for the area and volume of materials being placed prior to the placement of the next layer of backfill material.

l. Moisture content shall be within plus or minus two (2) percentage points of optimum moisture content per ASTM D-1557.
m. Moisture content and density testing shall be performed at a frequency of not less than one sample per one hundred (100) cubic yards of backfill material placed. More frequent testing may be required based on conditions encountered.
n. Surrounding terrain shall be restored to AMAFCA-approved condition upon completion of work.
o. Any surplus material shall be removed from the site or stockpiled at AMAFCA's direction.
p. Maintenance roads disturbed during construction shall be repaired or replaced to conditions equal to or better than conditions prior to construction, as per AMAFCA requirements.
q. Utilities crossing transversely to an AMAFCA facility shall be installed in an encasement to protect the utility. The following are the minimum requirements for AMAFCA approval of the installation. Additional, site-specific requirements may be required on a case-by-case basis.
    i. Encasements shall extend from right-of-way line to right-of-way line or as approved by AMAFCA.
    ii. Encasements shall extend a minimum of five (5) feet beyond the projected toe of any excavated slope.
    iii. Casing pipe shall be constructed as to prevent leakage of any substance from the casing throughout its length except for one end.
    iv. Encasements shall be installed to slope to one end.
    v. Tunnel liner plates shall conform to the requirements of the current American Railway Engineering Associate, Manual for Railway Engineering.
r. Drains, markers, shut offs, relief valves, pedestals, and utility access vaults are examples of appurtenances that may be part of the utility installation. The following are the minimum requirements for AMAFCA approval of the installation. Additional, site-specific requirements may be required on a case-by-case basis.
    i. Identifiable, durable, and suitable markers shall be installed at the right-of-way line where utility enters or exists an AMAFCA facility. Markers shall be installed every one hundred (100) feet of the utility. Markers shall not be installed within the flowline of any facility.
    ii. Drains, relief valves, or similar appurtenances that are designed to release liquids or gasses from a utility shall be installed outside of the AMAFCA right-of-way line, where feasible.
    iii. All control valves shall be installed in pre-cast-utility access vaults, typically outside the AMAFCA right-of-way.
    iv. Utility access vaults that must be installed in the AMAFCA right-of-way shall have a six (6) inch thick, reinforced concrete collar installed around the access cover to identify and protect the access vault from maintenance activities.

v. Pedestals or other above ground appurtenances installed as part of an underground utility system shall be located at or near the right-of-way line. These appurtenances shall have a six (6) inch thick, reinforced collar installed to identify and protect the appurtenances from maintenance activities.

s. Installation of a proposed underground utility under AMAFCA facilities can be completed by tunneling or jack & boring. Jack & boring is the preferred method.

i. Jack & Boring

1. Smooth wall or spiral weld steel pipe may be jacked through dry bore holes slightly larger than the pipe. The hole shall be bored progressively ahead of the leading edges of the advancing pipe as spoil is mucked by the auger back through the pipe. As the operation progress, each new section of the encasement pipe shall be butt-welded to the section previously jacked into place.
2. Grout holes shall be installed in the top section of the encasement pipe at ten (10) foot centers and the voids filled with 1:3 Portland Cement grout (or approved equal) at sufficient pressure to prevent channel settlement.
3. In the event an obstruction is encountered during the Jack & Boring operation that prohibits further installation, the auger shall be withdrawn, and excess pipe is to be cut off, and filled with 1:3 Portland Cement grout (or approved equal) at sufficient pressure to fill all voids and the encasement pipe capped.
4. For concrete lined channels, and if allowed in these scenarios by AMAFCA, depending on the soil conditions between the casing and the bottom of the channel lining, pressure relief core holes may be required to provide pressure relief to prevent hydraulic jacking or buckling of the concrete.

ii. Tunneling

1. This method of installation consists of excavating an opening beneath AMAFCA facility for the purpose of installing a tunnel liner. The excavation operation shall only advance by incremental distances sufficient for placing single sections of tunnel liner.
2. The space outside the liner plates is to be held to a minimum and shall be grouted with a minimum of 1:3 Portland Cement (or approved equal) at sufficient pressure to completely fill all voids created by the excavation and installation of the liner plates.

Open cut or other methods may be necessitated due to site conditions or other unique circumstances for the installation of utilities at AMAFCA facilities. Express authorization from AMAFCA is required prior to design of such a crossing. The following is provided as supplemental information for an open cut installation that may be authorized.

a. A six (6) inch thick three (3) foot wide (minimum dimensions; actual size may vary depending on proposed utility), reinforced concrete blanket shall be installed a minimum of one (1) foot above the top of the utility. Clearances referenced in Sections c thru e of Design and Installation Criteria for Underground Utilities must also be met.
b. When the utility is crossing a AMAFCA facility that may be susceptible to erosion, appropriately sized cut off walls upstream and/or downstream of the utility will be required.

Design and Installation Criteria for Above Ground Utilities

The following information is provided for those utilities that will be installed above ground at AMAFCA facilities. Please refer to AMAFCA Standard Detail 501 for Overhead Utility Crossings for additional information.

a. Location and alignment of overhead utilities on AMAFCA facilities shall do so at a right angle to the AMAFCA facility when possible.
b. Poles to support the utility and related appurtenances shall be located at or as near as possible to the right-of-way limits.
c. No utility structure shall be located closer than fifteen (15) feet from the toe of any slope embankment of an AMAFCA facility.
d. No utility structure shall be located closer than fifteen (15) feet from the top edge of any AMAFCA facility.
e. The vertical clearance of an overhead utility on a AMAFCA facility shall be a minimum of twenty-five (25) feet. In no case shall the clearance be less than what is required by the current National Electric Safety Code, National Bureau of Standards. Clearances shall comply with all state, federal, and applicable utility code requirements, but in no case shall the clearance be less than as indicated above.
f. Guy wires to ground anchors shall be placed parallel to the AMAFCA maintenance roads unless the clearances listed above are satisfied. Guy wires to ground anchors shall always be placed in a manner which does not impede with AMAFCA's maintenance operations.
g. Any surplus material created as a result of the utility installation shall be removed from the site or stockpiled at AMAFCA's direction.
h. Surrounding terrain shall be restored to AMAFCA-approved condition upon completion of work.
i. Pedestals or other above ground appurtenances installed as part of a utility system shall be located at or near the right-of-way line. These appurtenances shall have a six (6) inch thick, reinforced collar installed to identify and protect the appurtenances from maintenance activities.
j. Utilities that are proposed to be installed on an existing AMAFCA facility crossing (e.g. a public roadway bridge) , shall first obtain the permission of the owner of the crossing and provide that authorization to AMAFCA. The following are the minimum requirements required by AMAFCA for the installation on an existing crossing. Additional, site-specific requirements may be needed.
    i. The utility shall be installed in such a manner as to not compromise the structural integrity of the facility.

ii. The utility shall not extend below the lowest support member of the crossing structure.