

LIBERTY UTILITIES DEVELOPMENT GUIDE  
MARICOPA COUNTY, AZ

**WATER LINE CONSTRUCTION INSPECTION REQUIREMENTS**

To schedule appointments for the following, contact the Construction Inspector (480-881-9812), no less than 48 hours (2 business days) in advance, or see Page 3 for other contact information.

1. Trench inspection prior to pipe installation.
2. After pipe, bends, fittings, joint restraints, tracer wire, etc. has been installed on 4 inches of bedding, but before shading is started to verify position and type.
3. Blocking and thrust blocks where required.
4. After bedding (from bottom of trench to one [1] foot above pipe) has been placed into trench and properly compacted.
5. Installation of marking tape and tracer wire prior to other backfilling of trench.
6. After each lift of backfill material has been placed into the trench and properly compacted.
7. Third party passing compaction testing results.
8. Pressure test for tapping sleeve.
9. Pressure test for waterline.
10. Waterline chlorine injection and sampling.
11. Third party passing bacteriological sampling to be witnessed by a Utility representative. All results sent to Utility for review and approval.
12. Continuity testing for all tracer wire.
13. Operational Inspection, Final Inspection, and re-inspection if required.

**NOTES:**

1. When appointments are arranged at least 48 hours (2 business days) in advance, the inspection/test will be conducted as scheduled. When appointments are requested for the same day, the Construction Inspector will conduct the inspection/test based upon his availability.
2. If Contractor proceeds with construction before having approval of Construction Inspector, Contractor will be required to expose the pipeline, valve, thrust blocks, etc., at no cost to Utility, to permit inspection by the Construction Inspector. The required exposure of pipeline by Contractor shall not deem acceptance of facility. Utility reserves the right to reject any facility not properly scheduled for inspection by Utility for any reason. The rejection shall be final.
2. If developer chooses to proceed with construction without a signed Agreement, signed plans, and an MCESD issued ATC (Approval to Construct) or exemption letter, the project will be considered "At Risk". The Utility reserves the right to deny inspections until the previously mentioned items are completed and any required changes shall be at the developer's expense.

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**SEWER LINE CONSTRUCTION INSPECTION REQUIREMENTS**

To schedule appointments for the following, contact the Construction Inspector (480-881-9812), no less than 48 hours (2 business days) in advance, or see page 3 for other contact information.

1. Trench inspection prior to pipe installation.
2. After pipe has been installed in trench and before backfilling is started.
3. After bedding (from bottom of trench to one [1] foot above pipe) has been placed into trench and properly compacted.
4. Installation of marking tape and tracer wire prior to other backfilling of trench.
5. After each lift of backfill material has been placed into the trench and properly compacted.
6. Third party passing compaction testing results.
7. Installation of manhole bases.
8. Each connection to an existing manhole and/or stub.
9. Deflection test on sewer line.
10. Low-pressure air test on sewer line.
11. Insecticide coating of manholes
12. Continuity testing for all tracer wire.
13. The contractor shall uniform slope test all sewer lines by videotape; and vacuum or water test all Manholes in accordance with A.A.C. R18-9-E301. These tests shall also be coordinated with the Construction Inspector. Documented results and videotape shall be submitted to Utility for approval.
14. Operational Inspection, Final inspection and re-inspection if required.

**NOTES:**

1. When appointments are arranged at least 48 hours (2 business days) in advance, the inspection/test will be conducted as scheduled. When appointments are requested for the same day, the Construction Inspector will conduct the inspection/test based upon his availability.
2. If Contractor proceeds with construction before having approval of Construction Inspector, Contractor will be required to expose the pipeline, manhole, etc., at no cost to Utility, to permit inspection by the Construction Inspector. The required exposure of pipeline by Contractor shall not deem acceptance of facility. Utility reserves the right to reject any facility not properly scheduled for inspection by Utility for any reason. The rejection shall be final.
3. If developer chooses to proceed with construction without a signed Agreement, signed plans, and an MCESD issued ATC (Approval to Construct) or exemption letter, the project will be considered "At Risk". The Utility reserves the right to deny inspections until the previously mentioned items are completed and any required changes shall be at the developer's expense.

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**WATER LINE OPERATIONAL/ FINAL APPROVAL**

To schedule Operational or Final inspections, contact the Construction Inspector (480-881-9812) no less than 48 hours (2 business days) in advance.

**The following must be completed prior to issuing a passing Operational Inspection:**

1. The appropriate agreements must be executed.
2. All facilities have been installed and constructed per approved plans, any discrepancies have been resolved and facilities are connected to a distribution system that is operational. If the facilities are not installed and constructed per approved plans, the Utility reserves the right to deny inspections until any discrepancies have been resolved at the developer's expense.
3. All water services (verify correct size) installed, excluding water meter boxes.
4. Entire project has passed pressure testing.
5. Disinfection/ flushing/ bacteriological testing (passing results from lab sent directly to Utility's inspector for approval).
6. All water valves including auxiliary (fire hydrant) valves are accessible and keyed to ensure that they are in the open position to provide adequate water service and fire flows.
7. Compaction sampling test results. Passing test results sent to Utility's inspector for approval.
8. Approval to Construct. Water mains must have an Approval of Construction ("AOC") before approval to tie in mains to Utility's existing lines.

**The following must be inspected prior to issuing a passing Final Inspection:**

As-builts must be received prior to final inspection

1. Fire Hydrant
  - a) Installed per MAG STD DTL 360 and 362, location as shown on as-builts, pumper nozzle pointed in correct direction, and good condition in appearance with bollards if required.
  - b) Painted yellow (Flow color-coded if required by jurisdictional fire agency/ department) per Utility's Water Notes.
  - c) Painted RED if private and not utility owned.
  - d) Flange is at proper grade.
  - e) Chains and caps are on and secure.
  - f) Caps are on and threads not damaged.
  - g) Fire hydrant must be flow tested at walkthrough.
2. Valve & box
  - a) Installed per MAG STD DTL 391 Type 'A' location as shown on as-builts.
  - b) Verify valve is fully open and then close ¼ turn.
  - c) Box is at grade with concrete collar if in pavement.
  - d) Box and lid not damaged, no gaps where dirt can enter.
  - e) Tracer wire has been tested and is accessible.
3. Meter box
  - a) Installed per Utility's specifications and location as shown on as-builts.
  - b) Box is level and just above/ at grade (2.5" above grade ).
  - c) Box is uniform with other boxes.
  - d) Box is not damaged or cracked and lid is not missing.
  - e) No apparent leak at meter connections.
  - f) No excessive debris, dirt, mud inside box
4. Blow-off
  - a) Install per MAG STD DTL 390 'A' and location as shown on as-builts.
  - b) Box is level and just above/ at grade (1" above grade typical).
  - c) Box is not damaged or cracked and lid is not missing.
  - d) Corporation ("Corp.") stop is in serviceable condition and threads not damaged. If corp. is capped, remove cap and check for leaky valve.
  - e) No apparent leaks.
5. Air release valve
  - a) Install per Utility's specifications and location as shown on as-builts.
6. Projects requiring a backflow prevention assembly must be inspected prior to activation of service by an Arizona certified technician and passing test results sent to Utility.

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**SEWER LINE OPERATIONAL/ FINAL APPROVAL**

To schedule Operational or Final inspections, contact the Construction Inspector (480-881-9812) no less than 48 hours (2 business days) in advance.

**The following must be completed prior to issuing a passing Operational Inspection:**

1. All facilities have been installed and constructed per approved plans, any discrepancies have been resolved and facilities are connected to a collection system that is operational.
2. Low Pressure Air Test of pipe.
3. Mandrel Test of pipe, Inspector to OD tape measure diameter of mandrel to verify correct dimension prior to and after testing:
  - 8" pipe, SDR 35, 5% deflection = 7.28"
  - 10" pipe, SDR 35, 5% deflection = 9.08"
  - 12" pipe, SDR 35, 5% deflection = 10.79"
  - 15" pipe, SDR 35, 5% deflection = 13.20"
  - 18" pipe, SDR 35, 5% deflection = 16.13"
4. Videotape (DVD) of 100% of pipe and manholes.
5. Passing Compaction sampling test results must be submitted to Utility.
6. The collection system must be free of dirt and debris by the process of hydro-vac jetting water and must be connected to a downstream collection system that is operational.
7. If applicable, verify watertight manhole frame and cover were installed in accordance with approved plans
8. Sewer valve or approved equal has been installed in accordance with approved plans (for projects where Utility only owns/ operates the sewer facilities, without corresponding water utility ownership).

**The following must be completed prior to issuing a passing Final Inspection:**

1. As-builts must be received prior to Final Inspection.
2. Tracer wire has been tested and is accessible.
3. Manhole
  - a) Installed per MAG STD DTL 420,423,424,426 (as specified on plans) with a 30" ring and cover, cover has appropriate labeling, no steps and location as shown on as-builts.
  - b) All manholes shall be collared with concrete, with a minimum of 18" of concrete from grade ring to edge of concrete.
  - c) Inside completely grouted and grout is secure to walls and grade rings.
  - d) No debris or trash inside manhole, verify that there is no dirt or debris in the pipe.
4. Insecticide coating inside manhole.
5. Vacuum test of manholes.
6. Hydrogen-sulfide protective coating (SewerShield 100 or approved equal), installed by a certified applicator, as called out on the plans.
7. The collection system must be re-verified that it is free of dirt and debris.
8. Cleanout
  - a) Installed per MAG STD DTL 441 and location as shown on as-builts.
  - b) No standing water observable.
  - c) No concrete or foreign material.
  - d) Pipe is not damaged.