ARIZONA
Developer & Engineering Guide

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Introduction

EPCOR USA (EPCOR) acquired American Water Works Company's Arizona and New Mexico water businesses in 2011 to become one of the largest private regulated water provider utilities in the Southwest. The transaction included operations in 11 water utility districts, and has since expanded to operating in 12 counties, 34 communities, 16 water and three wastewater districts across Arizona, New Mexio and Texas.

EPCOR designs, owns, and operates essential water utility services, working closely with developers to ensure reliable infrastructure is in place for new communities. Our Developer Services team streamlines the process of transferring developer-constructed water systems to EPCOR. Once conveyed, EPCOR assumes full ownership, establishes service connections, and manages ongoing water operations to ensure safe and efficient service delivery.

Purpose

This Developer & Engineering guide is intended to provide clarification and details on how EPCOR’s Developer Services team and our Developers navigate the main extension workflow process. In addition, this document provides specifications regarding EPCOR design requirements for contributed infrastructure.

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Note: Throughout this Developer & Engineering Guide, "Utility" means EPCOR Water Arizona, Inc. If you have questions about anything in this document, contact USAdeveloperservices@epcor.com.

Definitions

Application: An application for Water or Sewer Main Extension
Utility: EPCOR Water Arizona, Inc.

Acronyms

ADEQ: Arizona Department of Environmental Quality
AMA: Active Management Area
ACC: Arizona Corporation Commission
ACH: Automated Clearing House
ADWR: Arizona Department of Water Resources
ALTA: American Land Title Association
AOC: Approval of Construction
ATC: Approval to Construct
AWWA: American Water Works Association
CAWS: Certificate of Assured Water Supply
CIAC: Contributions in Aid of Construction
CMU: Concrete Masonry Unit
DAWS: Designation of Assured Water Supply
DCDA: Double Check Detector Assembly
GGI: Gravity Grease Interceptor
HGI: Hydro-mechanical Grease Interceptor
IDSA: Industrial Discharge Sewer Agreement
MAG: Maricopa Association of Governments
MXA: Main Extension Agreement
PPC: Pretreatment Program Coordinator
PRV: Pressure Reducing Valves
PUE: Public Utility Easements
ROW: Right of Way
RPDA: Reduced Pressure Detector Assembly
SICA: Service Interconnection Agreements

Chapter 1

Developer General Information

1. Main Extension Process Overview

The Main Extension workflow is structured into four key stages: *Application and Agreements*, *Planning and Construction*, *Asset Conveyance*, and *Metering and Refunds,* each governed by specific stage gates that must be met before advancing to the next phase. *During Application and Agreements*, EPCOR will not begin reviewing plans until the Plan Review Fees are paid. During *Planning and Construction*, EPCOR will not sign any plans or permits until the Master Utility Agreement (MXA) is signed. In the *Asset Conveyance* stage, Final Acceptance will *not* be issued unless **all required Final Acceptance documents are received**. The Final Acceptance Checklist will help the developer ensure all necessary documents have been included with the Final Acceptance submission. The As-Builts and Cost Breakdown Worksheets must be submitted before a Meter Application will be accepted.

To maintain momentum and ensure timely service delivery, progression to the next phase is strictly contingent on meeting all stage gate requirements – no exceptions.

2. EPCOR Water Developer Services – Fee Schedule

These fees are subject to change. Always check with EPCOR to verify the latest approved fees.

ACH payment method is required.

Plan Review Fee – for Main Extensions and Service Interconnection Agreements (SICA) • Does not apply to projects that are "fire protection services or fire hydrants only". • This fee covers reviews of plans and reports for main extensions and SICAs. • The invoice must be paid before review will begin. ACH payment is required.	**$5,000**
Construction Administration Fee • Does not apply to projects that are "fire protection services or fire hydrants only". • This fee covers EPCOR's construction inspection and overhead. • This fee is due on receipt of an invoice from EPCOR. • The invoice is sent out on receipt of a signed Main Extension Agreement ("MXA") and must be paid before a pre-construction meeting will be held. • The developer's engineer determines the estimated total cost of construction of the main extension, which is added as an exhibit to the MXA.	**$6,500 + 5% of the Contractor's bid**
Review Fee for Master Plan Reports for developments with *100 or fewer* residential services • This fee covers reviews of reports only, no plans. • The types of Master Plan Reports include water, sewer, and reclaimed water. • The invoice must be paid before review will begin. ACH payment is required.	**$1,500 per report type**
Review Fee for Master Plan Reports for developments with *more than 100* residential services • This fee covers reviews of reports only, (no plans). • The types of Master Plan Reports include water, sewer, and reclaimed water. • The invoice must be paid before review will begin. ACH payment is required.	**$2,500 per report type**
Review Fee for Master Plan Reports for commercial developments • This fee covers reviews of reports only, (no plans). The types of Master Plan Reports include water, sewer, or reclaimed water. • The invoice must be paid before review will begin. ACH payment is required.	**$2,500 per report type**
Plan Review Fee – for Services Only (no main extension) • This fee covers reviews of plans, reports, and inspection for service only. • The invoice must be paid before review will begin. ACH payment is required.	**$2,500**
CC&N Application Fee • If developer requests expansion of EPCOR service area, $10,000 fee is due when EPCOR agrees to pursue the service area expansion.	**$10,000**
Hook-Up Fees	**As Stated in Tariff**
Water Meter Fees	**As Stated in Tariff**

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3. Summary of Key Points in the Main Extension Process

This outline provides an overview of the key procedures involved in administration, design, and construction of water distribution or sewer collection facilities for developer-funded projects. These procedures have been designed to promote efficient completion of projects at the lowest possible cost. Adherence to these procedures will avoid costly delays.

1. When a proposed development is within EPCOR Water Arizona, Inc's. ("Utility") service area, Applicant will complete an Application for Water or Sewer Main Extension ("Application") and submit the Application along with engineering plans to Utility. Utility will send Applicant an invoice for the Plan Review Fee ($5,000), which is a non-refundable contribution intended to cover the initial cost of Utility's project management expenses, including reviews of engineering plans, specifications and design reports, preparation and reviews of the Main Extension Agreement ("MXA") and coordination of flow tests where necessary. The Application is available on EPCOR's website (HERE).

2. The Plan Review Fee of $5,000 is structured to cover a reasonable number of plan and report reviews, phone calls, emails, and meetings. If Applicant or Applicant's Engineer fails to satisfactorily address Utility's review comments, produces a high number of emails, phone calls, or meetings, the Plan Review Fee may not be sufficient to cover Utility's time. In the case where Utility's costs exceed the Plan Review Fee, Utility will send a second invoice to Applicant. Utility is not obligated to continue work until Utility receives payment of the second invoice. Utility's project manager will determine the cost of the second invoice based on the estimated cost to complete the plan review.

   Subsequent reviews of engineering plans are intended to focus only on changes requested by Utility as a result of the initial review and are not considered a complete review. As such, any changes made to the plans must be clearly identified so the plan reviewer can maximize the use of their time and focus solely on plan revisions. If other changes have been made to the plans (those not requested from Utility), they must be clearly called out as changes, or there is the possibility that these changes could be rejected during construction and result in costly delays.

   There are no expedited reviews. All reviews, (first, second, or third) can range from 4 to 6 weeks each. All submittals are scheduled for review in the order in which they are submitted to Utility regardless of size or number of reviews. Applicant must plan accordingly.

3. Upon receipt of the plans, Utility will assign a project manager to coordinate with Applicant's Engineer to assist them in developing engineering plans and specifications in accordance with Utility's requirements. These requirements are outlined this guide, which is available on EPCOR's website. During plan development, the following may be required from the developer:

   a. A letter or design report from the engineer estimating the ultimate population equivalents for the development, the average and maximum anticipated daily water demands (or wastewater flow rates) for domestic, irrigation, and fire protection, and the anticipated number and sizes of meters and service lines and proposed backflow prevention devices.

   b. A letter from the jurisdictional fire protection agency setting forth requirements for fire flows, public fire hydrants, and/or private fire protection systems. These requirements must be incorporated into the engineering report. The letter and report must show the minimum required fire flow shown in gallons per minute and duration shown in hours.

   c. Preliminary plats or final plats showing lot numbers with corresponding street addresses and public utility easements. **A final recorded plat is required prior to final acceptance**.

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d. Permanent easements require a minimum of 20 feet. Temporary construction easement should be minimum 30 feet for all water/sewer facilities that are out of public right-of-way. Larger width easements may be required in certain cases. Utility easement forms are available on request. Draft easement forms, deeds, ALTA surveys and title reports will be submitted for Utility review prior to recordation of easements or execution of deeds. After Utility approval, developer will be responsible for recording the easements. A notarized copy of the recorded document shall be provided to Utility. Recorded off-site easements will be required prior to construction. Recorded on-site easements are required prior to final acceptance.

e. One complete set of final engineering sealed plans (approved by the fire protection agency, the governing regulatory agency, and Utility).

f. Copies of Certificates of Approval to Construct as issued by the governing regulatory agency.

g. A material breakdown sheet in a format approved by Utility showing the quantity, size, and estimated construction cost of all water/sewer facilities to be conveyed to Utility, including permitting and engineering costs. This sheet must be signed and sealed by an engineer.

4. Construction Administration Fee: The Construction Administration fee covers Utility's estimated construction administration expenses, including inspecting and testing the construction work, participating in construction progress meetings, reviewing as-built engineering drawings, coordinating with the Utilities Division of the Arizona Corporation Commission (see paragraph 7 below), reviewing Applicant's invoices reviewing ALTA surveys, title reports, easement, and deed documents, and facilitating other numerous internal project management activities. An invoice for this fee will be sent to Applicant immediately following receipt of Applicant's signed MXA. **The Construction Administration fee is $6,500 plus 5% of the engineer's estimated total cost of construction.** The engineer's estimated total cost of construction is the agreed-upon cost as detailed in paragraph 3.g above. This fee is a non-refundable contribution in aid of construction.

5. The contractor's insurance coverage must be in the types and amounts required by Utility and must include Utility as an additional insured. A sample certificate of insurance form with the required coverage is available upon request. The contractor is responsible to coordinate the site pre-construction meetings, inspection schedules and testing of new facilities by notification to Utility two business days prior to any planned activity.

6. Arizona Corporation Commission:

   a. All main extension agreements will be filed with and approved by the Utilities Division of the Arizona Corporation Commission ("ACC"). No agreement will be approved by the ACC unless accompanied by a Certificate of Approval to Construct or an exemption letter by the State or County regulatory agency. Construction shall not begin until approval is received from the Utilities Division of the ACC, which typically takes a minimum of 4 to 6 weeks. Utility will invoice Applicant the meter and hookup fees after ACC approval.

7. The following items are required after completion and testing of the new facilities and prior to activation of water/sewer service:

   a. All items listed in section 3.

   b. Copies of Certificates of Approval of Construction as issued by the governing regulatory County or State agency.

   c. Applicant's actual cost breakdown, including copies of all contracts and paid bills, invoices and other statements of expenses incurred by developer, covering all the costs of permitting, design, and construction of the water/sewer facilities. Applicant shall submit details using the Water or Sewer Cost Breakdown worksheet provided by Utility.

   d. Unconditional lien waivers and release on final payment.

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e. One set of sealed and certified as-built engineering plans as a PDF file.

f. Recorded plat, easements and deeds.

g. Backflow Certification, as required per *Chapter 5, Backflow Prevention*.

h. Final walk-through inspection by Utility and resolution of all punch list items.

i. Payment of all applicable tariff fees (meter fees, hook-up fees, etc.).

8. Final Acceptance: The information listed in paragraph 7, above, is required before Utility will accept the facilities constructed by Applicant and start refunds of advances. **Utility will not provide water or sewer service until after it provides the final acceptance letter.** Additional details on the Final Acceptance requirements are detailed in the Final Acceptance section of these guidelines.

9. Meter Applications: After Applicant receives the Final Acceptance letter they may apply for water meters (meter application link: page Water Meter Application | EPCOR Arizona). Determine which district your property is in and select the meter application from that district. For questions, contact mywater@epcor.com.

10. Where Utility is responsible for constructing the project, the following steps will be taken:

    a. Utility will sign / approve the engineering plans provided by Applicant's engineer.

    b. Applicant's engineer will obtain all required permits, including but not limited to the following: Approval to Construct, Approval of Construction, as-built plans, the Certificate of Assured Water Supply, MWD License Agreement, City or County Right-of-way Permits, and any other permits or approvals necessary for the project, and will furnish copies of these permits to Utility.

    c. Applicant must specify, in writing, the date for Utility to put the project out to bid ("Request to Bid"). Utility will determine the bid due date. Any Applicant requirements regarding time constraints (construction completion deadlines) must be noted in the Request to Bid. Please note the estimated time required from the invitation to bid to the start of construction may be six to eight weeks.

    d. Utility will solicit bids from qualified contractors. Applicant may request a specific licensed, bonded, and insured contractor be added to the invitation to bid list. Applicant must request the contractor two weeks prior to the invitation to bid date. The contractor must meet all Utility's insurance and safety requirements.

    e. After Utility receives and reviews the bids, Utility will provide Applicant with a bid evaluation report that includes the recommended contractor, the bid amount, and the Contractor's construction schedule.

    f. Prior to the start of construction, Applicant will pay to Utility, as a refundable advance in aid of construction. The payment covers the cost of the selected Contractor's bid, plus the estimated cost of Utility's labor and overhead, as well as contingency for the construction costs, calculated as 10% of the total of construction and Utility's labor.

    g. After construction completion, Utility will audit the projects costs. If the actual costs are less than the amount advanced by Applicant, Utility will refund the difference to Applicant after construction completion.

    h. Utility will refund Applicant's refundable advances in aid of construction in accordance with Arizona Administrative Code § R14-2-406.D for water and § R14-2-606.C for sewer. Any unrefunded balance of such advances remaining at the end of the applicable refund period shall become non-refundable. No interest shall be paid on any amount advanced by Applicant.

The above steps are not necessarily all inclusive, but rather an outline of critical points in the development of developer-funded projects. These steps should be referenced when planning such projects. Other specific project requirements may apply on a case-by-case basis.

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4. Water Meter Installation Checklist

Before Utility will set a meter, Applicant is responsible to ensure the following items have been addressed:

- Parcel name, lot, and address must be clearly posted in front of the premises.
- All lot grading must be within six (6) inches of final grade.
- Meter box **must be unbroken (with lid), level and adjusted to final grade.**
- Meter box must be free of all dirt and debris.
- Meter box must be unobstructed and accessible.
- Angle valve must be undamaged, flush with box and in correct location (see EPCOR Detail 342-2).
- Backflow device (if required, such as for irrigation meters) must be installed prior to meter set.
- Unless approved by Utility, meter boxes must be on street frontages corresponding with the street address of the property

Applicant must complete a water meter application and attach a clearly visible photo of the water meter box, lid, and lot sign showing the lot number or address of the property requesting water service.

5. Utility Ownership of Facilities

All water facilities on Utility side of the service meter, including meter, are owned by Utility. In almost all cases, all fire hydrants, taps, and isolation valves located in right-of-way ("ROW"), public utility easements ("PUE"), or easements dedicated to Utility are owned by Utility Fire hydrants located outside of ROW, PUEs, or easements dedicated to Utility are considered private and shall be painted red. Fire sprinkler taps, isolation valves, and that portion of the fire sprinkler services in ROW, PUE, or easements dedicated to Utility are owned by Utility (not including the backflow preventer). Utility will not own, maintain, or repair any private service lines, fire hydrants, or fire sprinklers systems, including the backflow preventer.

Where Utility provides sewer service, all sewer mains are owned by Utility. Utility will repair all leaks and will remove all stoppages in the sewer main. The property owner is responsible for all leaks and stoppages in the sewer service lateral up to the sewer main, and all structural defects or failures (including penetration of tree roots) for the service lateral on private property, up to the ROW line. Utility is responsible for all structural defects or failures (including penetration of tree roots) for the sewer lateral located in ROW.

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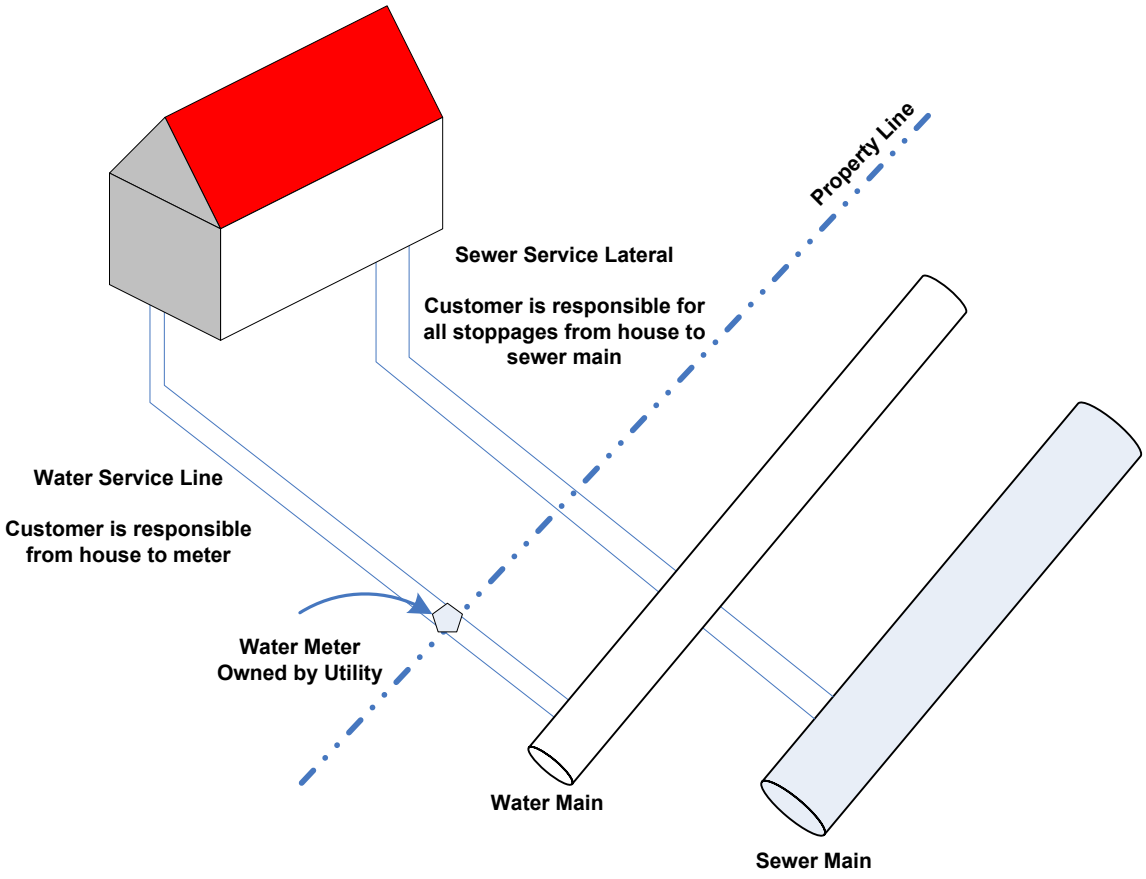

The water and sewer facilities as described above shall become the sole property of Utility when Utility issues final acceptance of such facilities. Full legal and equitable title in the facilities shall be vested in Utility, free and clear of any liens, without the requirement of any written document of transfer to Utility or acceptance by Utility.

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6. Developer Services Submittal List

Item	Code	Item Description
1.	a, 1	Electronic PDFs of each sheet
2.	c,1	Water/sewer material specifications
3.	a, 1	Property legal descriptions should be provided in verbal format and digital format. The verbal legal description should be provided in 8 ½" x 11" format suitable for incorporation into the MXA
4.	a,1	Project drawing showing property, easements, water/sewer facilities and ROWs in a format suitable for incorporation into the MXA
5.	a,1	Legal descriptions in 8 ½" x 11" format for incorporation into the easement document. All legal descriptions shall have a corresponding exhibit (if applicable)
6.	a,1	Engineer's estimate of probable cost
7.	a,1	Certificate of Approval to Construct (ATC) or exemption letter
8.	d,1	Main Extension Agreement (MXA)
9.	d.1	Arizona Corporation Commission Approval
10.	a,1	Master plans/design report
11.	a,1	Water/Sewer Service Agreement (ATC application)
12.	a,2	Address/lot map/CAD File – for subdivisions
13.	c,2	Trench compaction test results
14.	a,2	Final recorded property plat and/or final recorded easement (if applicable)
15.	c,2	Backflow prevention assembly and certification data submitted to Utility's backflow prevention specialist for approval
16.	a,1	Pre-treatment approvals – if applicable
17.	b,2	Certificate of Assured or Adequate Water Supply, whichever applies (if applicable)
18.	a,2	Certified as-built plans in PDF format, sealed and signed by registered engineer or registered surveyor.
19.	b,2	Itemized project contractor invoice/pay app showing 100% complete
20.	a.2	Approval of Construction (AOC) or Engineer's Notice of Compliance letter for exemption.
21.	c,2	Unconditional and release on final payment lien waiver(s)
22.	a,1	Well Siting Study (if applicable)
23.	a,2	ADWR Non-Exempt Well Permit (if applicable)
24.	b,2	ADWR form request to change well information (change of ownership) (if applicable)

Codes:

1 - Required prior to start of construction

2 - Required prior to final acceptance

a - Typically provided by engineer

b - Typically provided by Applicant

c - Typically provided by the contractor

d - Provided by Utility

*All items listed with code of 1 shall be submitted to Utility and approved prior to Utility's approval of Applicant's construction plans.

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Items from Developer by Second Plan Review Submittal

1. Current ALTA survey of the parcel with the future alignment of easement mapped (if necessary).
2. Current Title Report for easement property.
3. Boundary Closure Certification of Easement
4. Signed and sealed by engineer 8 ½" x 11" legal description and exhibit
5. Verify public access to the easement, may have to submit approved site plan, showing dedicated public access
6. Whenever possible, easements should be recorded on the final plat with EPCOR dedication language provided in this Developer Guide.
7. GIS data submittal for legal description exhibit (mapping see Requirements, below). EPCOR requires digital submission of easement data, including (a) PDF format for the instrument itself, and (b) the geometry of the easement in GIS (SHAPE or GDB) or CADD (.DWG or. DGN) format. Graphics relating to the easement shall be on a separate layer so it can be isolated from adjacent graphics.

Note: The related MXA must be in effect and fully signed prior to signing and delivery of the easement.

Note: The easement grantor must be the party that owns the affected real property. Applicant to the MXA and easement grantor do not need to be the same entity.

GIS Requirements: The digital easement geometry should conform to the basic topology rules including:

Lines must not overlap	Must not have gaps
Must not intersect with existing parcels	Cannot overlap self
Must be closed polygon (in the case of polygons) where applicable	

Digital submittals must follow an existing EPCOR spatial reference (coordinate system and horizontal datum):

AZ – Phoenix Metro and Tubac: NAD 1983, State Plane Arizona Central, Feet

AZ – Mohave County: NAD 1983, State Plane Arizona West, Feet

NM – Edgewood/Thunder Mountain: NAD 1983, State Plane New Mexico Central, Feet

NM – Clovis: NAD 1983, State Plane New Mexico East, Feet

7. Requirements for Developer Designed and Built Water/Sewer Main Extensions

1. Applicant shall prepare and submit water or sewer plans in accordance with the requirements outlined in chapter three.
2. Utility will be available to discuss plan development and design concepts. Applicant is encouraged to contact Utility prior to plan development for special instructions that may apply to a particular expansion.
3. Water and sewer mains must have a minimum distance of 12 feet from structures such as buildings, block fences, or retaining walls, as measured from the edge of the building foundation or wall to the outside of the main. In rare cases where a water or sewer main must encroach within 12 feet from a building, block fence, or retaining wall, additional protection is required. Additional protection may include the use of a sleeve for the main, or modifications to the footing of the structure, to prevent damage in the event of a main break.

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4. For all main extensions, Applicant is responsible to install the main along the entire length of Applicant's property line frontage of that property being developed. The property line frontage is defined as that portion of a parcel of property that abuts a street, easement, or public ROW. If a parcel to be developed has more than one frontage, the main shall be extended along all frontages.
5. Prior to commencing construction, Applicant must provide Utility with an Approval to Construct as issued by the Maricopa County Environmental Services Department (for projects in Maricopa County), by the Santa Cruz County Department of Environmental Quality (for projects in Santa Cruz County), by the Arizona Department of Environmental Quality (for projects in Mohave and Pinal County), or approved delegate. For projects that are exempt from the plan review requirements per A.A.C. R18-5-505.B.3, Applicant must provide Utility a letter from the applicable regulator confirming the exemption. The ATC and exemption letter are also required by the Arizona Corporation Commission ("ACC") when filing main extension agreements with the ACC.
6. Applicant must only install materials approved in writing by Utility or as directed by Utility's inspector.
7. Applicant must construct all infrastructure in accordance with the Standards and Specifications of the Arizona Department of Environmental Quality, the Maricopa Association of Governments (regardless of project location), and Utility.
8. Utility will conduct periodic inspections of Applicant's construction. Utility does not provide full time on-site inspection. Responsibility for proper installation rests with Applicant. Such inspection as Utility personnel may perform in no way relieves Applicant of its responsibility for construction and installation of the infrastructure.
9. Applicant must not make any changes from approved plans and specifications without prior written approval of Utility. Field Directives authorizing changes in the approved plans and specifications must be co-signed by Utility and Applicant's Engineer of Record prior to construction.
10. Utility will give a final inspection report upon completion of all construction, including final adjustments of all valve boxes, manholes, meter boxes, etc. and submittal of any other required documentation.
11. In order to establish actual cost of construction, Applicant must provide copies of contractor pay apps/invoices showing 100% of the completed costs of material and labor for that portion of the work conveyed to Utility. Invoices must be itemized for the following categories: Costs of water and sewer mains (including valves and manholes), water and sewer services (including meter boxes), fire hydrants, and fire services, all with related fittings. The invoices must also include soft costs such as engineering, construction supervision, and any other costs directly associated with the work conveyed to Utility. Utility will reject pay app/invoices showing lump sum costs that are not itemized into the categories described in this paragraph.
12. Applicant must provide unconditional waiver and release on final payment lien releases from all contractors, subcontractors, and material suppliers for all water and sewer construction projects.
13. Applicant must provide sealed and certified as-built plans of facilities installed. As-built plans must include the locations of all vertical and horizontal pipe bends, valves, manholes, sewer taps, etc., by station/offset and northing and easting on State plane coordinates. Applicant shall provide one set in PDF format. The plans must be certified for correctness by a Professional Civil Engineer or Land Surveyor registered in the State of Arizona. Reference the As-Built section in Chapter Three - Construction Plan Requirements, for detailed as-built plan requirements.
14. The date of the Final Acceptance Letter from Utility to Applicant is the date of final acceptance, unless otherwise described in the MXA. Applicant will warrant the facilities for one year from the date of final acceptance.
15. No refunds for Advances in Aid of Construction (AIAC) will be made prior to final acceptance.

Utility will not provide water service until after the items above are received and it provides the Final Acceptance Letter.

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8. Certificate of Assured or Adequate Water Supply and Grandfathered Rights

Prior to the approval of a plat and the issuance of a public report for a new development located within an Arizona Active Management Area (AMA), Arizona law requires that developments secure a 100-year Assured Water Supply from the Arizona Department of Water Resources (ADWR). This can be done in one of two ways:

1. Applicant secures a Certificate of Assured Water Supply (CAWS) for the proposed development, or
2. The water provider that will serve the proposed development (in this case, Utility) has a Designation of Assured Water Supply (DAWS).

Utility currently maintains a DAWS or ADAWS in the West Valley Water System (Agua Fria, Northeast Agua Fria, Sun City and Sun City West) and in the San Tan Water System (Maricopa and Pinal Active Management Areas). If Applicant's proposed project is within the boundaries of the Phoenix or Pinal AMAs but outside the water systems mentioned above, it may be the obligation of Applicant to obtain a CAWS. This issue should be discussed in more detail during a pre-application meeting because the water regulatory environment is dynamic and may change from the date of this version of the Developer & Engineering Guide.

Accordingly, Utility requires that developers of subdivisions and commercial properties on lands having Irrigation Grandfathered Rights (groundwater pumping rights) file with the State to "extinguish" the rights and pledge the rights to Applicant's CAWS. This requirement is included in the MXA.

For new developments located outside of an AMA, Arizona law requires that the development apply for a 100-year Adequate Water Supply prior to the platting and the issuance of the public report. It is Utility's policy that all developments have sufficient supplies and obtain the 100-year Adequate Water Supply.

If Irrigation Grandfathered Rights or Type I Non-Irrigation Grandfathered Rights are associated with the land to be developed, Applicant shall, within 30 days of plat recordation or prior to execution of a Membership Agreement with the Central Arizona Groundwater Replenishment District (CAGRD), whichever occurs first, submit to the Director of the ADWR, a notarized Statement of the Intent to Extinguish the Grandfathered Rights, including the Certificate of Grandfathered Right to be Extinguished. If the Grandfathered Right is a Type I right, proof of ownership of the land shall be submitted with the Statement of Intent. Any forms required to be submitted by ADWR shall also be included with the Statement of Intent.

The Statement of the Intent to Extinguish the Grandfathered rights shall include the statement, "It is requested that the Director of the Arizona Department of Water Resources make the extinguishment credits available for use by pending CAWS application number [insert appropriate CAWS application number]." A statement pledging the credits to the appropriate application for a CAWS shall also be indicated as appropriate on the extinguishment forms submitted. A copy of the Statement of Intent to Extinguish Grandfathered Rights with all enclosures and a copy of the ADWR extinguishment forms shall be mailed to:

5656 W. Talavi Blvd.
Glendale, AZ 85306
(623) 445-2400
USAdeveloperservices@epcor.com

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Chapter 2

Engineering Master Plan and Design Criteria

9. Master Planning and Distribution Main Requirements

Distribution systems must be designed in accordance with Utility's design requirements, applicable state and county requirements, any authority having jurisdiction within Utility's service area, commonly accepted engineering practices, and other applicable codes or recognized standards.

Distribution systems must be designed with sufficient "looping" and other redundancies as may be necessary to minimize outages to customers in the event of main breaks, routine maintenance, and repairs. Avoiding dead-end segments by providing looped distribution circuits also enhances potable water circulation and reduced age therefore minimizing the formation of disinfection byproducts.

Distribution systems should be sized to accommodate sufficient fire flows as may be required. The design and sizing of the distribution systems should include a main break analysis to ensure the provision of adequate fire flows and service to our customers.

As a condition of service, and in addition to the distribution system design standards, Utility requires that distribution systems include a minimum 8" diameter pipe for any distribution main. This requirement is not to be construed as a request for over-sizing, rather as a sound engineering design condition.

Plan submittals will be reviewed for the inclusion and acceptability of the 8-inch secondary distribution main and its alignment. An approved water distribution analysis is required to accompany all waterline construction drawings. The analysis shall identify proper distribution system sizing based on the required flow parameters, as well as the criteria stated in this Developer & Engineering Guide.

Where a land developer has subdivided any piece of land for development by another party, Utility may require an individual water master plan in line with these guidance notes, unless the principal land developer's approved master plan has adequately covered distribution of all individual parcels. All developers should coordinate with Utility's Developer Services and Planning divisions to identify whether additional master plans are required for their area of development.

Where land is intended to be developed in phases, details and timing of the phases of the development must be included in the master plan. The phasing information should include details and timing of any landscaped areas requiring irrigation from the potable water system (where the system tariff structure allows), especially where this will be effective prior to construction and/or sales of dwelling units.

Master plans will be reviewed by Utility's engineers to ensure new developments are coordinated and consistent with the long-term master plans of the relevant service area. Applicants are required to submit electronic copies of the master plan and the appropriate electronic files of the hydraulic analysis. Initial master plan reviews may take up to 8 weeks for initial review depending on the complexity of the project. This does not include any time needed for revisions and subsequent reviews. Failure to provide electronic copies of the master plan as well as electronic files for the hydraulic model may result in a delay of Utility's review that may then take more than eight (8) weeks.

A hydraulic analysis using the current version of WaterCAD (or equivalent with prior approval of Utility), must be performed for the proposed water distribution system and submitted as part of the master plan. The master plan shall be prepared in accordance with Utility's master plan outline. A color exhibit showing water line locations, sizes, parcel boundaries, junctions, contour elevations, pressure zone boundaries, etc. shall be submitted as part of the master plan. In addition to the hard copy documents required here, the submittal must also include a copy of the full hydraulic model, and any tabular files used for the hydraulic analysis in electronic format on CD. The master plan shall be signed and sealed by a registered professional civil engineer in the State of Arizona and submitted to Utility for review and approval.

Any and all criteria not listed herein shall be in accordance with, but not limited to, the following governmental agency requirements and any such criteria presented in the master plan shall be referenced appropriately for Utility review: Environmental Protection Agency (EPA), Arizona Department of Environmental Quality (ADEQ), Arizona Department of Water Resources (ADWR), Maricopa Association of Governments, Maricopa County Health Code Chapter V (if applicable to development), local jurisdictional planning and zoning requirements, and appropriate municipality regulations, if development is in a municipality serviced by Utility. If a development is outside Maricopa County or

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outside Arizona, it must conform to regulations and requirements of state and local jurisdictions and governmental agencies. All developments shall be compliant with AWWA standards. Fire flow requirements shall be determined by the jurisdictional fire marshal and the requirements shall be stated in a letter from the fire marshal, which must be included as an appendix with the master plan.

The "Demands" table provided in the *Design Criteria* section of this chapter shows typical demand values used by Utility for internal planning purposes. It should be noted, however, that this table may not be applicable to certain developments. **In all instances, engineers should coordinate with Utility's Developer Services and Planning divisions prior to development of master plans, to ensure appropriate demand projections are made.**

10. Water Master Plan Outline

The following outline shall be used for the preparation of master plan reports:

1. Cover sheet:
    a. Title (development name), date, revision date(s).
    b. Applicant and engineer's contact information.
    c. Sealed by a professional engineer registered in the state of Arizona.
2. Table of contents:
    a. Sealed by a professional engineer registered in the state of Arizona.
3. Executive summary:
    a. One or two pages with emphasis on proposed facilities to serve the development.
4. Introduction:
    a. Plan objective – state purpose of the report.
    b. Site location w/ vicinity map.
    c. Proposed development.
5. Design Criteria:
    a. Demands, pressures, storage, booster pumps, wells, distribution system (pipe sizing).
        i. Utility Developer Guide criteria.
        ii. MAG, ADEQ, other governmental agency criteria as applicable.
        iii. Generally accepted engineering standards (requires Utility approval).
6. Demands:
    a. Single family, multifamily, commercial, school, open space, parks, landscaping, etc.
    b. Details of all zoning obtained within development, including any pending re-zoning applications.
    c. Quarterly projections of demands from start of construction (construction water) to buildout, to include a breakdown of any phasing that may be involved with construction. This should include an exhibit to show locations, and a schedule showing the expected timing of demand growth for any phases as applicable. The intention would be to show how demand is projected to increase at all locations over time through buildout of the development.
    d. Summary narrative of demands table. Discuss which demand scenario governs design (peak hour or maximum day plus fire flow).
    e. Tabular calculations (spreadsheet) of all demands.

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7. Existing facilities/conditions:
    a. Reference any previous master plans used and their dates as applicable.
8. Proposed facilities:
    a. Required storage, proposed location, or expansion of existing if applicable.
    b. Required booster pump capacity.
    c. Required well capacity, number of wells if applicable.
    d. Distribution system piping, onsite as well as any offsite infrastructure needed.
    e. PRVs if applicable.
    f. Phasing if applicable. Where facilities will be constructed in phases, the timing and responsible party for each facility must be defined. If the timing of more than one development in adjacent areas allows, developers are encouraged to meet and plan with Utility to maximize the possibility and benefit of regionalization of facilities.
9. Water model:
    a. Describe model used.
    b. Assumptions.
        i. A hydraulic grade will be provided by Utility or obtained by Developer through a hydrant flow test.
        ii. Criteria used in the model.
    c. Results/discussion – proposed facilities are adequate to serve development based on hydraulics.
10. Summary/conclusions:
    a. Discuss how the objective of report has been met, i.e. proposed facilities will serve the proposed development in accordance with established criteria.
    b. List major facilities required and phasing as applicable.
11. Appendices:
    a. Water modeling results organized by:
        i. Average day
        ii. Maximum day
        iii. Peak hour
        iv. Maximum day plus fire flow
    b. The following information is to be included for the above scenarios:
        i. Junction/node report showing node label, elevation, demand in gpm, hydraulic grade line in feet, pressure in psi, and assigned pressure zone for that node (zone assignment to node shall be in accordance with the existing operation of the service area and in accordance with Utility naming conventions). For phased developments, reports and exhibits should identify those nodes that are active and those that are inactive for various model runs.
        ii. Pipe report showing pipe label, start/stop node, length, diameter, Hazen-Williams “C” value, flow, velocity, headloss, headloss gradient, and intended year of installation.

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iii. Pump report showing pump label, elevation, discharge, discharge pump grade, and pump head. An attachment to the pump reports should also be included to show assumed pump patterns and efficiency curves for any pumps modeled in the hydraulic analysis.

iv. Valve report showing valve label, elevation, diameter, valve status, and from/to hydraulic grade line.

v. Tank report showing tank label, base elevation, maximum elevation, volume, hydraulic grade line, and flow.

vi. A separate fire flow report for the maximum day plus fire flow scenario shall be submitted. The fire flow report is to show the following information for all nodes: node label, satisfies fire flow constraint, needed fire flow, available fire flow, total flow available, residual pressure, minimum system pressure, and minimum system pressure node.

vii. An Extended Period Simulation (EPS) model showing storage tank levels varying with time may be required for complex system designs, to verify adequate fire flow storage and to verify that wells have sufficient capacity for tank replenishment during maximum day demands. Where an EPS model is used, an explanation will be required for the basis of diurnal demand patterns, and the basis of demand allocation. A clear explanation will also be required for the naming convention used for the different model scenarios. Finally, detail will be required on how the source of water has been modeled. A summary of the techniques used to generate the hydraulic model and engineering analysis should clearly be described.

c. PDF color exhibit for peak hour average day and maximum day exhibits may be required. Exhibits to include:

i. Pipes and nodes labeled.

ii. Pressures at nodes.

iii. Major roadways labeled.

iv. Pipe size shown by color.

v. Major contour lines shown.

vi. Pressure zone boundaries.

d. Cost estimate

*Figures, exhibits, tables, spreadsheets, etc. to be placed in the body of the report where possible.

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11. Design Criteria for Water Systems

1. **Demands**[1]
   This table shall be used for the purposes of designing the necessary distribution infrastructure. For the purposes of calculating demands for Certificates of Assured Water Supply, Designations, and Large Water User requirements, engineer shall work with EPCOR staff to develop accurate actual demands.

Land Use	Unit	Average Day Demand (gal/day/unit)	Max Day Peaking Factor	Peak Hour Peaking Factor
Active Adult	Dwelling	304	1.8	3.0
Single Family	Dwelling	360	1.8	3.0
MultiFamily	Dwelling	240	1.8	3.0
Commercial[2]	Acre	1,700	1.8	3.0
Warehouse/Big Box Retail	1000 sq. ft.	30	1.8	3.0
Developed Open Space, including Parks[2, 3]	Acre	1,800	n/a	n/a
Schools[2]	Acre	1,700	n/a	n/a
Resort	Room	446	1.8	3.0
Hotel (no restaurant)	Room	140	1.8	3.0
Hotel (with restaurant)	Room	200	1.8	3.0

[1]Please contact Utility's Planning Division for resource data on other demand types.

[2]Acreage is based on gross number of acres.

[3]Developed Open Space includes general landscaped areas where irrigation will be required, such as road medians and areas to be maintained by HOAs.

2. **Specific Modeling Requirements:** Demands should be distributed among nodes to provide a reasonable reflection of the expected system demand distribution. Where demands are grouped and represented by only a few nodes those demands should be allocated to the nodes with the highest elevation as well as the furthest point from the development's point of supply.

3. **Pressures:**

   - Minimum Pressures: 55 psi static; 40 psi at peak hour; 20 psi at max day + fire flow
   - Maximum Pressures: In accordance with the Uniform Plumbing Code, any structure experiencing pressures greater than 80 psi shall have an individual pressure reducing valve on the customer side of the meter. Areas where many customers experience pressures higher than 80 psi may require a PRV station or modification to the distribution system, to be approved by Utility. Distribution systems shall not be designed to operate at pressures greater than 120 psi.

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4. **Velocity & Headloss:**
    - 10 fps maximum velocity for pipes less than 16 inches in diameter
    - 5 fps maximum velocity for pipes 16 inches in diameter or larger
    - 2 fps minimum and 6 fps maximum velocity for well transmission lines
    - 10 foot headloss maximum per 1,000 linear feet of pipe for pipes less than 16 inches in diameter
    - 8 foot headloss maximum per 1,000 linear feet of pipe for pipes 16 inches in diameter or larger

5. **Hazen-Williams Coefficient**: 130 (for new pipes). Where development models include existing pipes, appropriate coefficients will need to be selected. Where an existing calibrated model exists, the coefficients in the existing model must be used. If there is no existing calibrated model, the developer's engineer will need to consult with Utility's planners to identify suitable coefficients.
6. **Fire Flows**: Fire flows must be in accordance with jurisdictional fire marshal requirements. Provide a written statement from the jurisdictional fire marshal that states the minimum required flows and duration by class of customer. In the absence of a jurisdictional fire marshal, fire flow requirements must be in accordance with the latest version of the international fire code.
7. **Storage Requirements:**
    - Equalization: 30% of max day, plus
    - Emergency reserve: The greater of 10% of max day OR the storage volume required based on the fire flow requirements stated above.
8. **Booster Pump Station:** Firm Capacity shall meet or exceed the greater of peak hour flow or max day + fire flow with the largest pump out of service for the pressure zone(s) that the booster station serves. Shared redundancy between pressure zones may be acceptable via a PRV (with the prior approval of Utility) provided adequate redundancy exists in the higher zone.
9. **Water Valves:** Number of Valves = number of radiating mains at intersection minus one; the un-valved branch is the line that supplies flow to the intersection.
    - Valve spacing shall be in accordance with ADEQ Bulletin #10
    - Valves in well transmission mains shall be kept to a minimum.
10. **Wells:** Where developments are supplied solely by groundwater wells, the following criteria must be met:

    Firm Capacity: Any wellfield supplying a booster station must meet the maximum day demand for the entire station with the greatest producing well out of service. Single source wellfields are not allowed. Proposed wells supplying directly into the distribution system are discouraged and will be reviewed on a case-by-case basis.

    Permitted Capacity: The total permitted capacity of a wellfield shall be adequate to meet the anticipated total annual demand for the development.

    Well transmission lines shall have an 8" minimum diameter. Where a transmission line will have multiple wells connected to it, the pipe shall be sized such that all wells connected to that line can run simultaneously at their full capacity while meeting the velocity and headloss constraints defined in this guide. If this cannot be achieved, contact Utility's Developer Services Division for guidance.
11. **Fire Hydrants:** All hydrants will be Wet Barrel (unless Dry Barrel hydrants are required by local jurisdiction) and be manufactured by Clow or Jones. Fire hydrant spacing shall be in accordance with the requirements of the local jurisdictional agency.

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12. **Air/Vacuum Release Valves:** Air vacuum release valves are required at all high points and at vertical realignments of the water line. For areas with significant grade changes, profiles for 8" lines may be required to identify ARV locations.

13. **Pressure Reducing Valves:** PRV shall be located on transmission/distribution mains to maintain design pressure ranges in accordance with approved water master plans. These locations must be coordinated with, and approved by, Utility. PRV sizing shall be based on anticipated minimum/maximum flow ranges.

14. **Wash Crossings**

- MEGALUG restrained joint ductile iron pipe (Class 350) is required at all washes or channels. The depth requirement for placing waterlines under washes or channels shall be the deeper of the following two cases:

a. Per the ADEQ's Engineering Bulletin No. 10, the minimum cover over the pipe shall be greater than or equal to two (2) feet below the scour depth (based on Scour Analysis described below).

b. The minimum cover over the pipe may be based on the 100-year flow rate of the wash or channel as shown in the table below. Note that the "additional depth" in the table refers to the depth of pipe that must be added to the normal cover requirements that are provided in Detail No. 350-1.

100-Year Flow Rate	Additional Depth
1 to 49 cfs	1 foot
50 to 99 cfs	2 feet
100 to 499 cfs	3 feet
Greater than 499 cfs	Scour Depth (based on Scour Analysis); minimum of 3 feet

Details on the determination of the 100-year flow rate shall be submitted to Utility for review. The Scour Analysis shall be in accordance with the Arizona "State Standard for Watercourse System Sediment Balance" (SS5-96), Guideline 2, Level III, as published by the ADWR (http://www.azwater.gov/azdwr/SurfaceWater/FloodManagement/StateStandards.htm). The Scour Analysis shall be submitted to Utility for review for all wash crossings. Note: If a sediment transport analysis has been performed by the Flood Control District of Maricopa County for the subject wash crossing, this can be submitted to Utility for review, and this may eliminate the need for additional analysis.

15. **Minimum Residential Potable Water Meter Sizing:** Size all residential meters in compliance with

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the current Uniform Plumbing Code (UPC) and any applicable municipal or other governmental requirements. To justify the meter size for residential meters 2-inch or larger, applicant will provide architectural calculations to Utility upon request. For residences that include fire sprinklers or landscape irrigation, the meter size shall be the greater of the following:

- Meter size as determined by the current UPC, or
- From each fire sprinkler zone within the residence, the highest of these fire flows must be in accordance with the table below (i.e., if the calculated fire sprinkler flow is 31 gpm, then a 1-inch meter will be required), or
- The landscape irrigation flow must be in accordance with the table below:

Minimum Required Meter Size (inches)	Maximum Allowed Fire Flow or Irrigation Flow (gal/min)
5/8	20
3/4	30
1	50
1 ½	100
2	160
3 and larger	Determined on a case-by-case basis

The maximum flows provided in the table above should only be imposed on the meter for short, intermittent periods. Meters should not be operated on a continuous 24-hour service at flows greater than one-half of the maximum flows provided in the table above.

16. **Service Line Size:** The minimum service line size is 1-inch, installed in accordance with Utility's STD. DET. 342. The appropriate adapter shall be installed with the meter box as shown on STD. DET. 342. A new water main extension may be required where Utility determines that existing main capacity has been exceeded. Developer to obtain their own plumbing calculations to determine appropriate customer-owned on-site service line size.

17. **Meter Location:**

- Install meters side-by-side, straddling the property lines where possible, not at road

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intersection corners, and l not adjacent to fire hydrants.

- Each service line requires a separate tap to the main.
- Residential fire sprinkler and irrigation water service are permitted through the domestic service line and meter. Commercial developments require separate water meters for building and landscape.
- Each parcel of land must have its own separate service line and meter. A single service line and a master meter can be used for two or more buildings located on the same lot such as an office complex, trailer courts or similar low-density projects covering one lot. In high-density applications such as an apartment complex or hospital where an assured continuous water supply must be maintained, the development must have two master meters, each with its own service connection to Utility's main to create a secondary looped connection to the property.
- No service connections or fire protection systems will be made to transmission mains (typically 16 inches and larger). Utility will review requests for services on 16-inch distribution mains on a case-by-case basis.
- The meter box must be located on the frontage of the property being served by the meter.

Existing service lines that will not be used by a development shall be abandoned, service saddle removed from the water main and replaced with a wrap-around repair clamp on the water main. Larger services may require removing the tee and replacing the existing main with a new section of water main.

18. **Water System Layout:**
    - To provide appropriate (i) water pressure, (ii) water circulation, (iii) redundancy, and (iv) minimize taste and odor issues, all water mains must be designed with a minimum of two sources (looped configuration) – see "Dead-End Lines" below for exceptions.
    - Water and sewer mains must have a minimum distance of 12 feet from buildings, block fences, or retaining walls, as measured from the edge of the building foundation or wall to the outside of the main. In rare cases where a water or sewer main must encroach within 12 feet from a building or retaining wall, additional protection is required. Additional protection may include the use of a sleeve for the main, or modifications to the footing of the structure, to prevent damage in the event of a main break.
    - Ninety-degree (90°) fittings are not allowed in rights-of-way. Use two 45° fittings where applicable.
19. **Dead-End Lines:** All dead-end lines will be approved on a case-by-case basis. Where dead-end lines occur, cap dead-end lines with a curb stop (blow off) with flushing pipe per EPCOR Detail 390-1.
20. **Thrust Blocks:** Thrust blocks are not allowed in ROW except where required at vertical bends. Use restrained joints per MAG Standard Detail 303-1 and 303-2 in ROW in place of concrete thrust blocks.

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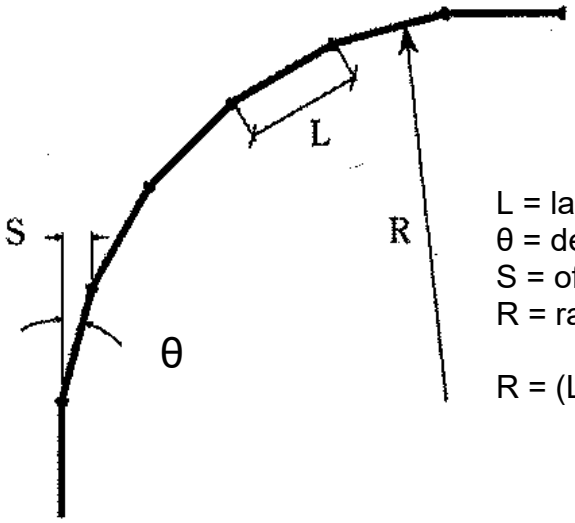
21. **Curvilinear Alignments:** Design constraints are provided below:



L = laying length
θ = deflection angle
S = offset per joint of pipe
R = radius of curve

$R = (L) / \{2 \times \tan (\theta / 2)\}$

C900, DR14, PVC Pipe

Pipe Diameter	Laying Length	Max Deflection Angle	Offset per Joint of Pipe	Min. Curve
6”-12	20’	2.0°	8.4”	573’

C905, DR14, PVC Pipe

In accordance with AWWA C605-94, section 5.6, the bending of the PVC pipe barrels larger than 12-inch (300-mm) nominal diameter is not allowed due to the forces required. The curved alignment of PVC pipelines larger than 12-inch (300-mm) in diameter shall be determined by one-half the pipe manufacturers published axial-joint-deflection limits. Manufacturer’s technical data sheets shall be submitted to Utility for review and approval.

Ductile Iron Pipe, AWWA C150/151/153

Pipe Diameter Curve	Laying Length	Max Deflection Angle	Offset per Joint of Pipe	Minimum Curve
8”-12”	18	2.5°	9.4”	413’
14”-16	18	2.0°	7.5	516’
18”-20	18	1.5°	5.7”	688’
24”	18	1.0°	3.8”	1032’
8”-12”	20	2.5°	10.4”	459’
14”-16”	20	2.0°	8.4”	573’
18”-20”	20	1.5°	6.2”	764’
24”	20	1.0°	4.1”	1146’

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12. Design Requirements for Fire Lines

1. Fire line connections to Utility's mains are for fire protection systems only. Metered services should connect directly to the water main. However, if an existing stub to the property is adequately sized to serve both fire and domestic service, the domestic service may connect on the upstream side of the fire line's backflow prevention device. In this case, the fire line must have an isolation valve between the domestic service saddle and the fire line's backflow prevention device.
2. Joint restraint ductile iron pipe is required. The minimum fire line size is 4 inches.
3. A Reduced Pressure Detector Assembly (RPDA) or Double Check Detector Assembly (DCDA) is required on the fire line, and each device will include a detector meter. The classification of fire protection will determine the use of an RPDA or DCDA.
4. Fire line backflow prevention devices are required within 75 feet of the main. If the building riser is within 75 feet from the main, then a vertically mounted backflow prevention device may be located on the building riser. If the building riser is further than 75 feet from the main, then a backflow prevention device shall be installed as close as practicable to the service connection (property line).
5. Backflow prevention devices are not required for private hydrant connections that are not looped and that do not have fire sprinkler connections. However, the private hydrant must be painted red. Utility will only own the tee and the valve at the water main.
6. Backflow prevention devices shall be approved by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
7. Do not install backflow prevention devices in ROW, sidewalks, driveways, visibility triangles, or other locations where accidental damage or visibility obstruction would likely occur.
8. Provide an accessible unobstructed radius of not less than four feet from the outer perimeter of each backflow prevention device for testing, repairs and replacement.
9. In the absence of specific pressure drop information, the diameter of the inlet or outlet of any backflow prevention device or its connecting piping shall not be less than the diameter of such water distribution piping to the fixtures served by the device. If available, pressure drop information shall be provided with the submitted plans.
10. Looped on-site fire line systems shall have backflow preventers at each point of connection to the public water system.
11. A control valve is required at ALL fire line connections to public water mains. The control valve shall not be located in sidewalks, driveways, curbs, or gutters.
12. Thrust blocks are not allowed in ROW.

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13. Design Criteria for Wastewater Systems

Perform and provide a hydraulic analysis for the proposed wastewater collection system as part of the master plan. Present and reference the design methodology. Provide the results of this analysis in tabular form with at least the following information presented:

- Pipe number
- To/from manhole number
- Pipe size
- Pipe slope (slopes that are less than minimum design shall be noted)
- Average daily flow
- Peak hour flow
- d/D ratio at peak hour
- Velocity at peak hour

Perform an analysis of sewer force mains, including impacts due to pump surge, and submitted as part of the master plan. Use the Darcy-Wiesbach equation for the force main hydraulic losses. A PDF, showing flow contributing area, sewer line number and manhole number locations, flow direction, property boundaries, contour elevations, etc. shall be submitted as part of the master plan. The master plan shall be signed and sealed by a registered professional engineer and submitted to Utility for review and approval.

1. **Average Daily Wastewater Design Flows**

This table shall be used for the purposes of designing the necessary wastewater collection infrastructure. For the purposes of calculating flows for Capacity Assurance, Treatment Plant Capacity, Large User requirements and demand-based Hook-Up-Fees engineer shall work with EPCOR staff to develop accurate actual demands.

Land Use	Unit	Average Daily Flow (gal/day/unit)	Peak Hour Peaking Factor
Active Adult	Dwelling	190	3.0
Single Family	Dwelling	240	3.0
Multi Family	Dwelling	180	3.0
Commercial[1]	Acre	1,500	3.0
Warehouse/Big Box Retail	1000 sq. ft.	25	3.0
Schools[1]	Acre	1,500	3.0
Resort	Room	380	3.0
Hotel (no restaurant)	Room	100	3.0
Hotel (with restaurant)	Room	150	3.0

[1]Acreage is based on gross number of acres.

For San Tan District projects, these flows may be modified due to ADEQ. Please reach out to EPCOR Developer personnel to confirm flow requirements.

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2. **Minimum / Maximum Slopes (Manning's Roughness Coefficient of 0.013)**

Pipe Diameter (inches)	Minimum Slope (%)	Minimum Velocity (ft./sec)	Maximum Slope (%)	Maximum Velocity (ft./sec)
8	0.368	2.1	6.760	9
10	0.300	2.2	5.020	9
12	0.257	2.3	3.937	9
15	0.208	2.4	2.924	9
18	0.163	2.4	2.293	9
21	0.144	2.5	1.867	9
24	0.130	2.6	1.562	9
27	0.111	2.6	1.335	9
30	0.104	2.7	1.160	9

3. **Sewer Capacity Ratio (d/D)**

   The ratio of flow depth in the pipe to the diameter of the pipe shall not exceed 0.75 in peak hour flow conditions.

4. **Minimum Pipe Diameter**

   The minimum sewer main diameter is 8 inches.

5. **Depth of Cover**

   a. Minimum of 7 feet 6 inches of cover is required for sewer mains greater than 12 inches in diameter.

   b. Minimum of 6 feet of cover is required for sewer mains 12 inches in diameter or less.

   c. Minimum of 5 feet of cover is required for sewer services at the property line.

6. **Wash Crossings**

   Concrete-encased PVC is required on all sewer lines that cross washes or channels. The depth requirement for placing sewer lines under washes or channels shall be based on the 100-year flow rate of the wash or channel as shown in the table below.

100-Year Flow Rate	Minimum Depth from Bottom of Wash to Top of Pipe
1 to 49 cfs	5 feet
50 to 99 cfs	6 feet
100 to 499 cfs	7 feet
Greater than 499 cfs	Scour Depth (based on Scour Analysis) plus 3 feet; minimum of 7 feet

Submit details on the determination of the 100-year flow rate to EPCOR for review. The Scour Analysis shall be in accordance with the Arizona "State Standard for Watercourse System Sediment Balance" (SS5-96), Guideline 2, Level III, as published by the Arizona Department of Water Resources (http://www.azwater.gov/azdwr/SurfaceWater/FloodManagement/StateStandards.htm). The Scour Analysis shall be submitted to Utility for review for all wash crossings.

Design and construct all sewer lines with an extension of at least 10 feet beyond the boundary of the 100-year storm scouring.

Current versions of controlled documents are posted on the EPCOR intranet.
Versions obtained from other locations are considered uncontrolled.
It is the user's responsibility to verify that this is the current version.

7. **Manhole Rim Elevations**

8. All manhole rim elevations must be above the 100-year floodplain elevation. Concealed pick-hole manhole covers are required where covers are located within 3 feet of the edge of a gutter, in areas that are unpaved, in areas that are prone to flooding or designed for drainage conveyance. Rim elevations should be set 0.2 feet above finish grade in all unpaved areas. Manholes are not permitted in washes without prior approval from Utility.

9. **Minimum Manhole Diameter**

   a. The minimum manhole diameter for sewer lines that are 15 inches in diameter or greater is 5 feet.

   b. The minimum manhole diameter for any sewer line that is 10 feet or deeper below finished ground surface (to bottom of pipe) is 5 feet.

   c. The minimum manhole diameter for all other conditions not met above is 4 feet.

   Note: All sewer manholes shall have a 30-inch frame and cover.

10. **Manhole Spacing**

    Manholes shall be installed at all grade changes, size changes, alignment changes, sewer intersections, and to comply with the following spacing requirements:

Sewer Pipe Diameter (inches)	Maximum Manhole Spacing (feet)
8 to less than 18	500
18 to less than 36	600
36 to less than 60	800

11. **Manhole Stub Outs and Knock Outs**

    Stubs from manholes are not allowed. Knock outs may be provided in manholes for future main extensions when required by EPCOR.

12. **Manhole Linings**

    All manholes shall be lined in accordance with EPCOR Detail No. 100-4.

13. **Manhole Invert Drops**

    a. If a manhole has a sewer direction change that is less than 45 degrees, then the manhole should be designed for a 0.1-foot drop across the manhole.

    b. If a manhole has a sewer direction change that is greater than or equal to 45 degrees, then the manhole should be designed for a 0.2-foot drop across the manhole.

    c. Drop manholes should be per MAG Standard Detail No. 426

14. **Cleanouts**

    Cleanouts, instead of manholes, may be installed at the end of sewer lines that are less than 200 feet in length. Service connections are not allowed at the ends of cleanouts or within 4 feet of a cleanout.

15. **Force Mains**

    a. Design force mains to maintain a minimum flow velocity of 3 feet per second and a maximum flow velocity of 7 feet per second.

    b. Appropriate valves and controls are required to prevent draining back to the lift station.

    c. Install air release valves at all high points along the force main to eliminate air accumulation.

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Versions obtained from other locations are considered uncontrolled.
It is the user's responsibility to verify that this is the current version.

16. **Curvilinear Alignments**

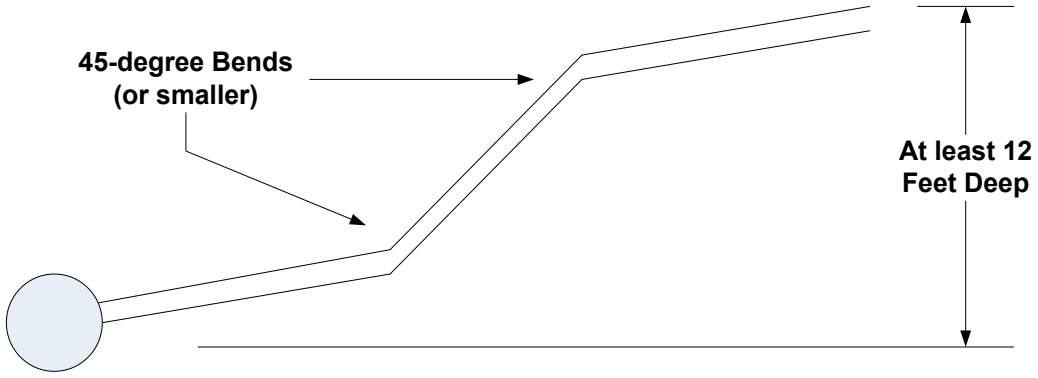
SDR 35 PVC Sewer Pipe

Pipe Diameter	Laying Length	Max Deflection Angle	Offset per Joint of Pipe	Minimum Curve
8”-15”	12.5’ *	2.5	6.5	287’
8”-15”	20’	2.5	10.5	458’

The use of reduced pipe lengths must be clearly noted on the construction plans for Contractor’s attention.

17. **Service Lines**

No bends in sanitary sewer service lines are allowed except for services that are 12 feet deep or deeper, which may use vertical bends. For services that are 12 feet deep or deeper, 45-degree bends (or smaller bends) may be used as illustrated below.



Existing sewer service lines that have been stubbed out to a property shall be used; however, where the use of stubbed out lines are not feasible, the existing lines shall be abandoned and capped at the sanitary sewer main.

18. **Utility Monitoring and Control Point**

a. Customers deemed to be significant industrial users as outlined in EPCOR’s tariff may be required to construct per Utility specification a utility monitoring and control point that will contain the appropriate metering facilities in which to monitor and control facility wastewater discharge. Reference the Design Standard for Utility Monitoring and Control Point for Users for additional details.

Current versions of controlled documents are posted on the EPCOR intranet.
Versions obtained from other locations are considered uncontrolled.
It is the user’s responsibility to verify that this is the current version.

Chapter 3

Construction Drawings

14. Construction Drawing Requirements

1. Label all construction drawings "Water" and/or "Sewer" as applicable.
2. Construction drawings shall be in PDF format, designed and scaled to fit on 24" x 36" sheets of paper.
3. A professional civil engineer registered in the State of Arizona must sign the construction drawings.
4. Construction drawings must meet the requirements of the ADEQ, Engineering Bulletin #10 and A.A.C. R18-5-502 for water, Engineering Bulletin #11 and A.A.C. R18-9-E301 for Sewer.
5. Submit all design calculations and other supporting data with the construction drawings in a design report.
6. The drawings shall include an overall master water and/or sewer plan sheet.
7. The cover sheet of the drawings shall contain an index map showing water and/or sewer facilities as well as the corresponding sheet number. Include a key map on each subsequent plan view sheet in the lower right-hand corner of each sheet.
8. Show Utility's "Material Specifications", "General Notes", and referenced standard details on the drawings.
9. Show all itemized quantities, separated for facilities that will be Utility-owned and those that will be privately-owned.
10. Show Utility's approval signature block and as-built block on the cover sheet of the drawings.
11. Sewer drawings shall include, but not limited to, sewer mains, manholes, and services to the building(s). No sewer service taps in manholes. Provide plan and profile of all sewer mains.
12. Water drawings shall include, but not limited to, water mains, services, fire hydrants, and valves. Show size and location of all water services and meters. Services stubs for future development are not permissible unless the size and location are definitive, in which case stubs may be approved by Utility on a case-by-case basis.
13. Provide plan and profile views for waterlines 12-inches or larger. Provide profiles of vertical deflections of waterlines and utility crossings. Dimension the vertical separations between other utilities. Station the start and stop of joint restraint. Use MAG 303-2 for restrained lengths of DIP with Polywrap and PVC.
14. Restrained joint ductile iron pipe is required at all vertical dip sections.
15. All hydrants must be wet-barrel hydrants unless otherwise required by the local fire jurisdiction.
16. Avoid long fire hydrants – install fire hydrants on the roadside with the water main where possible.
17. Avoid installing fire hydrants adjacent to water meters – install water meters and hydrants at opposite property corners where possible.
18. All valve box covers must be in accordance with MAG detail 391-1 Type C.
19. Restrained joint ductile iron pipe is required on all fire lines, hydrants, and 3-inch and larger water services, from the water main to the point of delivery.
20. All fire lines must have a double check detector assembly or a reduced pressure detector assembly within 75 feet of the water main. The engineer of record must determine the degree of contamination and use the backflow prevention device most appropriate to protect against the degree of contamination. The customer will install, own, and maintain the backflow preventers as a condition of water service.
21. Type K copper pipe is required for all 2-inch and smaller services from the water main to the point of delivery. The minimum service diameter is 1-inch.
22. Backflow preventers are required within 3 feet of the water meter.

23. All 3-inch and larger meters must be constructed above ground. No meters in vaults.
24. Show easements for EPCOR-owned facilities on private property.
25. Show stationing and roadway centerline offset of the water and sewer mains and related appurtenances.
26. Show station and offset, along with northing and easting coordinates for all waterlines, valves, fittings, vertical and horizontal offsets, hydrants, meters, services, sewer mains, manholes, cleanouts and service laterals.
27. Include the following information on the cover sheet of the drawings:
    - EPCOR Information

    WATER AND/OR SEWER OWNER/OPERATOR

5656 W. Talavi Blvd.
Glendale, AZ 85306
(623) 445-2400
USAdeveloperservices@epcor.com

THIS SET OF PLANS HAS BEEN REVIEWED FOR COMPLIANCE WITH EPCOR REQUIREMENTS. EPCOR NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. THIS APPROVAL SHALL NOT PREVENT EPCOR FROM REQUIRING CORRECTIONS OF ERRORS OR OMISSIONS IN PLANS FOUND AFTER THE DATE OF THIS APPROVAL. THIS APPROVAL DOES NOT APPLY TO PRIVATE WATER OR SEWER SYSTEMS BEYOND THE WATER METER OR SEWER SERVICE CONNECTION. THIS APPROVAL IS VALID FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN BELOW UNLESS CONSTRUCTION OF THE WATER OR SEWER FACILITIES HAS STARTED WITHIN 12 MONTHS OF THE APPROVAL DATE.

APPROVED BY: _____
SIGNATURE DATE PROJECT NO.

28. EPCOR owner information with logo, and Utility's General Notes, Material Specifications and Standard Details are available in digital format. Digital files are located on EPCOR's website. For assistance, please contact USAdeveloperservices@epcor.com.

15. Plat Dedication Verbiage

Use the following plat dedication verbiage on the final recorded plat for any of Utility owned facilities that cross private property, (outside of dedicated public ROW). Where a final plat is not available, separate Utility easements are required when crossing private property.

PERPETUAL WATER AND SEWER EASEMENT ('EASEMENTS") AS DESCRIBED IN THE PLAT ARE GRANTED TO EPCOR WATER ARIZONA INC, AND ITS SUCCESSORS AND ASSIGNS (COLLECTIVELY, "GRANTEE"), either using its own personnel or contractors, to (i) enter in and upon the Easement Area with personnel and machinery, vehicles and material at any and all times to install, operate, repair, replace, maintain, remove and add to Grantee's Facilities, (ii) remove trees, bushes, undergrowth and other obstructions interfering with Grantee's enjoyment of its rights granted herein, and (iii) do anything necessary, useful or convenient for the enjoyment of its rights granted herein. Grantee will have unrestricted access to the Easement Area for activities described above, and formal notification of or approval by any entity or association prior to accessing the easement will not be required. Grantor acknowledges that the installation, construction, maintenance, repair and replacement of, or addition to, Grantee's Facilities may require the use of heavy equipment by Grantee. Additionally, these facilities may require maintenance and/or repair anytime, day or night.

The right of Grantor to freely use and enjoy the Easement Area is reserved to Grantor, its successors and assigns insofar as the exercise thereof does not endanger or interfere with Grantee's exercise of its rights under this Easement or with Grantee's Facilities located within the Easement Area. Without limiting the generality of the foregoing, Grantor shall have the right to construct and erect fences at right angles to Grantee's Facilities (fence foundation structures shall be located outside of the easement), to install landscaping excluding trees and root invasive plants, parking facilities and driveways, and to grant additional non-exclusive easements to others in the Easement Area and permit additional utility lines and other installations, so long as: (i) Grantor shall not erect or construct or permit to be erected or constructed any building, retaining wall, concrete or CMU wall, concrete thicker than 5 inches or reinforced concrete parking facilities and driveways, fences longitudinally to Grantee's Facilities, structure or similar improvement within the limits of the Easement Area; (ii) Grantor shall not, nor permit, the grade over Grantee's Facilities to be substantially altered without, in each instance, the prior written consent of Grantee; (iii) any pipes or conduits within the Easement Area shall cross Grantee's Facilities at right angles, in which case, a minimum vertical distance of two (2) feet (as measured from the closest points on the outside edges) shall be maintained between Grantee's Facilities and such other pipes or conduits so as to prevent damage or conflicts in the event of repairs or maintenance; (iv) Grantor shall not permit the installation of any physical encroachments or obstacles that will materially impair Grantee's maintenance and operation of Grantee's Facilities; and (v) Grantor agrees that Grantee's Facilities will be separated by a reasonable distance from other utility lines and facilities so as to prevent damage or conflicts in the event of repairs or maintenance. Unless Grantee expressly consents in writing otherwise, any and all utility pipelines or lines crossing Grantee's Facilities shall be laid below Grantee's Facilities.

16. As-Built Requirements

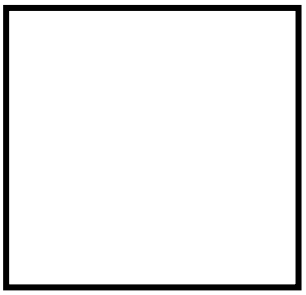
1. Plans must be in PDF format.
2. Plans must be approved and signed by the required agency or agencies having jurisdiction over the project.
3. Sealed and certified by a Professional Civil Engineer or Land Surveyor registered in the State of Arizona.
4. Station/offset and state plane northing/easting coordinates on all water fittings, including valves, tees, bends, all vertical and horizontal changes, and on all sewer manholes.
5. Swing ties to fixed points may be required for commercial projects that do not have a roadway centerline for stationing within a reasonable distance from the project.
6. Dimension distances from lot lines to sewer taps.
7. Dimension all water and sewer pipe lengths between fittings and branches.
8. Show elevation profiles for all vertical dip sections regardless of the pipe diameter.
9. Show elevation profiles for all sewer mains including manhole rim and invert elevations.
10. Show elevation profiles for all water mains 12” and larger.
11. Show all changes in pipe materials and sizes.
12. Show street names, assessor parcel numbers, and lot numbers.

17. Water/Sewer As-Built Certification

The following as-built certification is required on the cover sheet of the plans:

WATER/SEWER AS-BUILT CERTIFICATION

I hereby certify that the as-built measurements as shown herein were made under my supervision or as noted and are correct to the best of my knowledge after due review. Additionally, I hereby certify that all mains and services have been installed within the limits of easements dedicated to EPCOR Water Arizona, Inc., or inside dedicated street rights-of-way or public utility easements.



Chapter 4

Construction Inspection

18. Procedure for Scheduling Water Line Construction Inspections

To schedule appointments, contact Utility's Construction Inspection Division at (602) 309-1164, or see the *Contact List* section at the front of this guide for direct phone numbers.

NOTE: When appointments are arranged at least five (5) days in advance, the inspection/test will be conducted as scheduled.

When appointments are requested for the same day, Utility's Construction Inspector will conduct the inspection/test based upon his availability.

Utility's Construction Inspector and Applicant's contractor can schedule the following required items in the field:

- Open trench before pipe is installed in trench.
- After pipe, bends, fittings, joint restraints, etc. have been installed in trench, but before backfilling is started to verify position and type.
- All waterlines - inspection after backfill, installation of marking tape and prior to other backfilling of trench.
- After bedding (from bottom of trench to one [1] foot above pipe) has been placed into trench and properly compacted.
- After each lift of backfill material has been placed into the trench and properly compacted.
- Blocking and thrust blocks where required.
- Compaction sampling.
- Pressure test for tapping sleeve.
- Pressure test for waterline.
- Waterline chlorine injection.
- Bacteriological sampling.
- Operational Inspection, Final Inspection and re-inspection if required.

NOTE: If Applicant's Contractor proceeds with construction before having approval of Utility's construction inspector, Applicant's contractor will be required to expose the pipeline, valve, thrust blocks, etc., at no cost to Utility, to permit inspection by Utility's construction inspector. The required exposure of pipeline by Applicant's contractor shall not deem acceptance of facility by Utility. Utility reserves the right to reject any facility not properly scheduled for inspection by Utility for any reason. The rejection shall be final.

19. Procedure for Scheduling Sewer Line Construction Inspections

To schedule appointments, contact Utility's construction inspector at (623) 309-1164.

NOTE: When appointments are arranged at least five (5) days in advance, the inspection/test will be conducted as scheduled.

When appointments are scheduled for the same day, Utility's construction inspector will conduct the inspection/test based upon construction inspector's availability.

Utility's construction inspector and the developer's contractor can schedule the following required items in the field:

- Tying off sewer plugs.
- Open trench before pipe is laid into trench.
- After pipe has been installed in trench and before backfilling is started.
- After each lift of backfill material has been placed into the trench and properly compacted.
- Each new manhole, including manhole coatings.
- Connecting to an existing manhole.
- Installation of service tap before service line is connected to saddle.
- Low-pressure air test on sewer line.
- Post manhole ring adjustment hydrovac to ensure manhole and lines do not have debris.
- Operational inspection, final inspection and re-inspection if required.
- The contractor shall uniform slope test all sewer lines, including sewer service lines, by video recording and shall vacuum or water test all manholes in accordance with A.A.C. § R18-9-E301. These tests shall be conducted prior to operational inspection and coordinated with Utility's construction inspector. Documented results and video recordings shall be submitted to Utility for approval – via DVD or flash drive.

NOTE: If Applicant's contractor proceeds with construction before having approval of Utility's construction inspector, Applicant's contractor will be required to expose the pipeline, manhole, etc., at no cost to Utility, to permit inspection by Utility's construction inspector. The required exposure of pipeline by Applicant's contractor shall not deem acceptance of facility by Utility. Utility reserves the right to reject any facility not properly scheduled for inspection by Utility for any reason. The rejection shall be final.

Chapter 5

Backflow Prevention

20. Backflow Prevention Approval Process

Approval Process (see flowchart)

1. Applicant will submit Backflow Prevention Assembly (BPA) specifications with the design plans during the application process. Specifications shall include location of the proposed BPA, the manufacturer, model, and size of BPA, and the purpose of the waterline on which the BPA will be installed (fire line, irrigation, domestic/multipurpose). Applicant shall follow any additional requirements as outlined in the tariff. Applicant must provide the class of fire line. All BPAs must be lead free in accordance with the definition of lead free in section 1417 of the Safe Drinking Water Act. Refer to the Water and Wastewater Rates page for additional information.
2. After approval of the BPA specifications by Utility's Project Manager, Applicant will install and test the BPA in accordance with A.A.C. § R-18-4-215F, Utility standards, and approved design plans. Applicant will submit the post-installation test report to the project manager. The report must include meter serial numbers for metered connections and building specifications for fire line assemblies where multiple fire lines are present.
3. Applicant/contractor will schedule the operational inspection of the BPA with Utility's construction inspector.
4. The construction inspector will confirm the correct installation of the BPA.
5. Once the construction inspector confirms correct installation of BPA the new water service passes Utility final inspection (provided that all other operational inspection items have no deficiencies).
6. The backflow test report with all pertinent information shall be submitted to Environmental Compliance Program Coordinator.

21. Premises Requiring Backflow Prevention

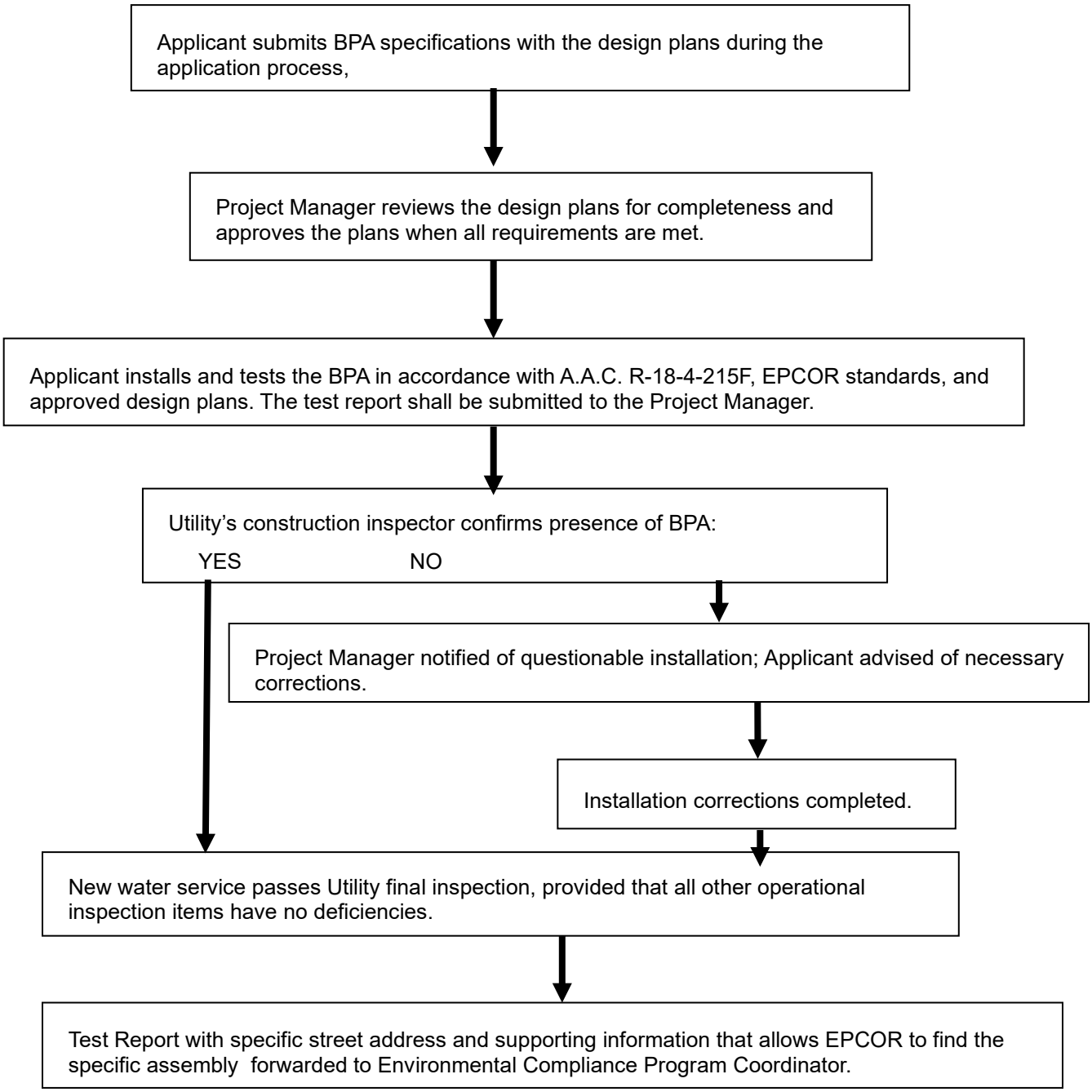
All water lines which do not serve a single-family residence require a backflow prevention assembly (BPA),. BPAs must be approved by University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USC-FCCCHR). The approval list may be found on the USC-FCCCHR website. BPAs increase in degree of protection from DCDAs to RPs. The highest degree of protection for a cross-connection is an air gap.

Fire Lines: A Double Check Detector Assembly (DCDA) is the minimum protection BPA that can be used for class 1 and 2 fire protection lines, reduced Pressure Detector Assemblies (RPDA) must be used for other classification of fire lines.

Domestic/Multipurpose Service/Irrigation: An RP is the only BPA allowed for a metered service line.

High Hazard Applications: Air Gaps will be required for water lines servicing areas with high hazard of contamination. High hazard applications will be determined on a case-by-case basis.

22. Backflow Prevention Operational Approval Flowchart



Chapter 6

Pre-Treatment Requirements

23. Pre-Treatment Approval Process

Approval Process

1. Applicant shall prepare and submit sewer plans in accordance with the requirements outlined in Chapter 3.
2. Utility's Pretreatment Program Coordinator (PPC) will be available to discuss pre-treatment requirements. Applicant is encouraged to contact Utility's PPC for special instructions that may apply to developments which will have an industrial or commercial discharge to the sewer.
3. If the business occupying the building is expected to generate an industrial or commercial wastewater discharge (such as car wash or food service), then Applicant or business owner must fill out an Industrial Discharge Sewer Agreement (IDSA) application and submit the application, with plans, to the PPC. Plumbing plans for the building must also be submitted.

Plan Review

The plan review shall confirm the need, size, location, and other requirements of the pretreatment necessary to control discharges. Written approval from Utility must be obtained prior to installation of the pretreatment equipment. The review of such plans and operating procedures shall in no way relieve the user from the responsibility of modifying such facilities as necessary to produce discharge acceptable to Utility in accordance with the Tariffs approved by the Arizona Corporation Commission (ACC).

Industrial Discharge Criteria

If the discharges expected from this facility are subject to the requirements of *40 CFR 405 – 471* Applicant must contact the Pretreatment Coordinator to obtain an IDSA application and a Baseline Monitoring Report as required by *40 CFR 403.12*.

Dental Facilities

Dental facilities are required to fill out a One-time Dental Compliance Report as required in *40 CFR 441.10*. Contact Utility's PPC for the compliance report.

Food Services Facilities Criteria

Any drains that are used to convey wastewater that has the potential to contain grease from food preparation and cleaning operations must discharge to a properly sized Gravity Grease Interceptor (GGI), Hydro-mechanical Grease Interceptor (HGI) when appropriate, or an alternative grease intercepting device (note, the use or placement of industrial food grinders and/or garbage disposals in food establishments will not be allowed). This includes but is not limited to: drains from pre-rinse and or pre-wash sinks; one, two, three or four compartment sinks; meat prep sinks; wok stoves; kitchen floor drains; floor sinks; soup kettles; rotisseries with drains; steam ovens with drains; food prep sinks; hand wash sinks; dishwashers; self-cleaning ventilation/exhaust hood; food waste disposal units; and mop sinks. No waste from water closets, urinals, and other fixtures conveying human waste shall drain into or through the GGI.

Any business requiring a GGI shall have that GGI serving that business only. Shared GGIs are only allowed under limited circumstances and must be approved by Utility. Any approval for a shared GGI will require the owner or property manager to be responsible for the maintenance of the GGI. This agreement must be in writing and be provided to Utility prior to any approval of shared GGIs.

All GGIs and associated plumbing shall be designed and installed by a licensed plumber or contractor. GGIs shall be installed for easy access, inspection and cleaning. Each compartment shall be accessible by a traffic rated manhole. The inlet and outlet manholes shall be located directly above the inlet and outlet piping "Ts", per EPCOR Detail 450-1. The "T" on the inlet piping must be provide with a removable cap. Sweeping cleanouts must be installed before and after the GGI.

The sizing of the interceptor shall be determined using the following Tables 1-3 (Sizing based on UPC 2012). If the GGI is being sized for a vacant shell building, Table 3 shall be used to determine the GGI volume. Alterative grease interceptor-type devices may be used with prior approval.

Table 1

Drainage Fixture Units for Food Service Facilities			
Fixture Type	**Drainage Fixture Unit (DFU) Value**	**Quantity**	**Total**
*2-Compartment Sink	2		
*3-Compartment Sink	3		
*Automatic Dishwasher less than 2-inch Drain	3		
*Automatic Dishwasher greater than 2-inch Drain	6		
*Food Prep Sink	2		
*Hand Sink	2		
*Mop Sink/Mop Basin	3		
*Pre-Rinse Sink	3		
*Sink w/Food Waste	3		
*Rotisserie w/Drain	3		
*Tilt Soup Kettle	3		
*Wok Stove	4		
Floor Drain 2” & 3”	2		
Floor Sink 2”	4		
Floor Sink 3”	6		
Floor Sink 4”	8		
		TOTAL DFUs	

*Fixture type not specifically identified in the 2012 UPC. DFU value assigned for calculation convenience.

Table 2: Minimum GGI Size based on Total DFUs

Total DFUs (from Table 1)	GGI Volume (gallons)
Up to 21 DFUs	750 gallons
22-35 DFUs	1000 gallons
36-90 DFUs	1250 gallons
91-172 DFUs	1500 gallons
173-216 DFUs	2000 gallons
217-307 DFUs	2500 gallons
308-342 DFUs	3000 gallons
For total DFU counts greater than 342, please contact EPCORs Pretreatment Coordinator.	

Table 3: GGI sizing for Unfinished Building Shells

GGI Inlet Pipe Size (inches)	GGI Size (gallons)
2”	750 gallons
3”	1000 Gallons
4”	2000 Gallons

Chapter 7

Application for Final Acceptance

24. Application for Final Acceptance

To obtain Approval of Final Acceptance from Utility, Applicant must satisfy the following requirements:

1. Utility will issue a letter in advance of Final Acceptance reminding Applicant of the terms and conditions set forth in the Main Extension Agreement ("MXA") and the necessary documents required to obtain Approval of Final Acceptance.
2. Applicant should reference the Final Acceptance Package Checklist to ensure all required documents (examples provided in Appendix) have been completed and submitted:

Preconditions

- ☐ The Developer has obtained an approved Final Inspection Report from EPCOR's Construction Inspector by completing all punch list items identified by the inspector.
- ☐ The Developer has paid all fees required by this Main Extension Agreement and by the terms of the Utility's then-current and applicable tariffs for the Development.

Documentation

The Developer must ensure that all following documentation has been completed and submitted using the PLL Public Access Portal. Please ensure each document is uploaded as a separate attachment but submitted as a single submission. Once documents have been uploaded to the portal, they must be labelled. Please click on "label" beside the document and label your document as per the appropriate document type (refer to the bolded descriptions below). You may reference the Developer Engineering Guide for additional details on required documents:

- ☐ **Cover Letter** (PDF): complete and sign the attached cover letter and checklist therein.
- ☐ **Water or Sewer Cost Breakdown Worksheet** (Excel spreadsheet): complete the attached Cost Breakdown Worksheet with relevant costs of the project (i.e., all water and/or wastewater infrastructure and related construction costs).
- ☐ **Application and Certification for Payment** (PDF of original): a copy of contractor's final itemized Pay-App or invoices, showing the Utility's facilities are 100% complete. Do not send receipts for costs unrelated to this project, unless other labor or materials are already included in that documentation. Receipts must clearly support the value in the spreadsheet.
- ☐ **Unconditional Lien Waiver** (PDF of original): a copy of the contractor's Unconditional Waiver and Release on Final Payment.
- ☐ **As-Built Drawings** (PDF): ***one*** PDF copy of all as-built drawings.
- ☐ **Final Inspection Report** (PDF): a copy of the completed Final Inspection report.
- ☐ **Approval of Construction** (AOC) or **Discharge Authorization** (DA) (PDF of Original): PDF copy of AOC/DA from the relevant jurisdiction.
- ☐ **W9** Original Request for Taxpayer ID Number and Certification (PDF copy): Note that the name listed in sections 1 and 2 of the W9 must match the Main Extension Agreement (MXA). The refund will be sent to the address listed in Sections 5 and 6 of the W9 unless otherwise noted.
- ☐ **Address List Spreadsheet** (Excel spreadsheet): complete attached address list spreadsheet; the format must not be changed from the template provided.
- ☐ **Easements**: include easements as required.

3. Applicant must use the Public Access Portal for submission of all Final Acceptance documents as separate attachments but a single submission. *Do not* submit Final Acceptance Documents as a single PDF file. All preconditions must be satisfied, and all required documentation must be submitted together. Incomplete packages will delay Final Acceptance.
4. Upon satisfaction of all MXA terms and conditions, as well as review and approval of all Final Acceptance documents by Utility, Final Acceptance will be issued to Applicant. Once Final Acceptance has been issued, no further or late invoices will be accepted.

Revision History

Reviewed By	Approved By	Date Approved	Changes Made
Becky Cardiff, Senior Technician, Engineering Gary Miller, Manager, Engineering Developer Services Alessandro Lovisetto, Manager, Engineering Developer Services; Joe Whelan, Senior Technician, Engineering Katherine Nierva, Manager, Project Engineering Paul Taylor, Manager, Engineering Developer Services Eric Coppinger, Senior Inspector, Construction Johsua Newby, Specialist, Environment Douglas Kirkland, Specialist, Industrial Pretreatment John Calkins Naveen Savarirayan, Manager, Environmental Compliance Frank Metzler, Senior manager, Developer Services Caroline Selin, Senior Manager, Operational Excellence Molly Christensen, Specialist, Project Support	Frank Metzler, Senior manager, Developer Services	Month, Day, Year	Review and update of entire document. Update to new template.

Appendix

Appendix 1: Engineering Details

Engineering Details

Appendix 2: Final Acceptance Checklist

Preconditions

- ☐ The Developer has obtained an approved Final Inspection Report from EPCOR's Construction Inspector by completing all punch list items identified by the inspector.
- ☐ The Developer has paid all fees required by this Main Extension Agreement and by the terms of the Utility's then-current and applicable tariffs for the Development.

Documentation

The Developer must ensure that all following documentation has been completed and submitted using the PLL Public Access Portal. Please ensure each document is uploaded as a separate attachment but submitted as a single submission. Once documents have been uploaded to the portal, they must be labelled. Please click on "label" beside the document and label your document as per the appropriate document type (refer to the bolded descriptions below). You may reference the Developer Engineering Guide for additional details on required documents:

- ☐ **Cover Letter** (PDF): complete and sign the attached cover letter and checklist therein.
- ☐ **Water or Sewer Cost Breakdown Worksheet** (Excel spreadsheet): complete the attached Cost Breakdown Worksheet with relevant costs of the project (i.e., all water and/or wastewater infrastructure and related construction costs).
- ☐ **Application and Certification for Payment** (PDF of original): a copy of contractor's final itemized Pay-App or invoices, showing the Utility's facilities are 100% complete. Do not send receipts for costs unrelated to this project, unless other labor or materials are already included in that documentation. Receipts must clearly support the value in the spreadsheet.
- ☐ **Unconditional Lien Waiver** (PDF of original): a copy of the contractor's Unconditional Waiver and Release on Final Payment.
- ☐ **As-Built Drawings** (PDF): ***one*** PDF copy of all as-built drawings.
- ☐ **Final Inspection Report** (PDF): a copy of the completed Final Inspection report.
- ☐ **Approval of Construction** (AOC) or **Discharge Authorization** (DA) (PDF of Original): PDF copy of AOC/DA from the relevant jurisdiction.
- ☐ **W9** Original Request for Taxpayer ID Number and Certification (PDF copy): Note that the name listed in sections 1 and 2 of the W9 must match the Main Extension Agreement (MXA). The refund will be sent to the address listed in Sections 5 and 6 of the W9 unless otherwise noted.
- ☐ **Address List Spreadsheet** (Excel spreadsheet): complete attached address list spreadsheet; the format must not be changed from the template provided.
- ☐ **Easements**: include easements as required.

Appendix 3: Final Inspection Report

	EPCOR WATER ENGINEERING 5656 Talavi Blvd. Glendale, AZ 85306 USA Epcor.com	**FINAL INSPECTION REPORT**

JOB: _____

INSPECTOR: _____ **CONTRACTOR:** _____

PROJECT # (a): _____

CONTRACTOR/DEVELOPER REPRESENTATIVE: _____

(circle one)

DATE: _____ **INSP TYPE:** WATER/SEWER/RECLAIMED WATER

(circle one)

Final Inspection is being conducted to determine if the facilities have been constructed in accordance with the approved plans and to determine if the facilities are 100% complete and operational. Final Approval of the facilities Is not equivalent to Final Acceptance of the facilities. Final Acceptance will be granted to Developer/Contractor only after Final Approval has been obtained and any and all required submittals have been approved.

INSPECTION RESULTS

FINAL APPROVAL	FAIL – REINSPECTION REQUIRED
FULL INSPECTION	PARTIAL INSPECTION
	SEE ATTACHED MAP

INSPECTION RESULTS

_____

_____

_____

Appendix 4: Water or Sewer Cost Breakdown Worksheet Example

Please note this is only an example, you will be provided with the most recent version of this spreadsheet prior to final acceptance.

EPCOR FINAL BREAKDOWN

Verrado Victory Phase 6 Unit B									
summary									
From Final Payment #									
1018890 - Water	**6B Quantity**	**Total Price**	**Unit Price**		**1018891 - Sewer**	**6B Quantity**	**Total Price**	**Unit Price**	
Curb stop	2				mobilization	1	$ 15,000.00		
remove tapped cap	2				8" sewer (LF)	1988	$ 121,658.40	$ 61.20	
8" waterline (LF)	2,611	$ 192,719.28	$ 73.81		8" Connec to Existing	1	$ 1,965.00	$ 1,965.00	
8" gate valve	7	$ 43,960.00	$ 6,280.00		5' manhole	3	$ 37,350.00	$ 12,450.00	
6" fire hydrant	9	$ 74,115.00	$ 8,235.00		4' manhole	7	$ 36,505.00	$ 5,215.00	
8"x8" Tee	6		$ -		4" sewer service	75	$ 128,625.00	$ 1,715.00	
8"x6" Tee	9		$ -		4" sewer	0	$ -	$ -	
Bend	11		$ -		sewer plug	1	$ -	$ -	
Water CO	1	$ 642.07	$ 642.07		remove plug	1	$ -	$ -	
connec to line			$ -		Drop sewer	1	$ 2,500.00	$ 2,500.00	
3/4" service	75	$ 126,000.00	$ 1,680.00		Cleanout	3	$ 22,442.40	$ 7,480.80	
1" l/s service	1	$ 4,100.00	$ 4,100.00		Sewer CO	1	$ 42,717.25	$ 42,717.25	
Meter boxes	0	$ -	$ -		jumper assembly	0			
6" gate valve	9	$ -	$ -						
6" C900 PVC	214	$ -	$ -						
jumber assembly									
sub-total			**$ 441,536.35**				**408,763.05**		

Water:	**6B Quantity**	**6B Quantities**	**Sewer:**	**6B Quantity**	**6B Quantities**
8-inch pipe	$ 237,321.35	2611 Lf	8-inch sewer	$ 280,138.05	1988 LF
Fire Hydrants	$ 74,115.00	9 Each	4-inch laterals	$ 128,625.00	75 Each
Services	$ 130,100.00	76 Each			
Sub-total W/S	**441,536.35**			**$ 408,763.05**	

Total Worksheet	**$ 850,299.40**								

For As-Built Worksheet	

Appendix 5: AOC Examples

AOC Example – Pinal County

ADEQ Arizona Department of Environmental Quality

DISCHARGE AUTHORIZATION
FOR A SEWAGE COLLECTION SYSTEM
TYPE 4.01 GENERAL PERMIT

Permittee Information			
Name:	[redacted]	County:	Pinal
		Project Name:	[redacted]
Address:	[redacted]	ADEQ File No.:	[redacted]
		LTF #:	103393

Project Type(s)	**Project Location:** The site, San Tan Gateway Phase 1, Parcel 19 is bounded to the north by San Tan Gateway Phase 2, to the west by Quail Run Lane, to the east by San Tan Gateway Phase 1, Parcels 19 & 20 and to the south by Bella Vista Road.
☒ Gravity	**Project Description:** Construction of approximately 5,050 LF of 8-inch PVC SDR-35 gravity sewer line, 27 manholes and related appurtenances.
☐ Lift Station	
☐ Force Main	
☐ Other:	

Record Documents Approved for Discharge Authorization		**WWTP Name:**	Copper Basin WRF		
Document	**Date**	**Treatment Facility Permitted Design Flow:**	3.6 MGD	**APP Number:**	[redacted]
Request Discharge Authorization	6/7/2024	**System Capacity Affirmation Date:**	4/3/2024	**Sewage Collection System Capacity Affirmation Date:**	4/3/2024
Leakage Tests	12/23/2023	**Location of Downstream End of System Proposed Herein:**			
Deflection Tests	12/23/2023	Township:	3S	Range: 8E	Section: 13
Uniform Slope Tests	12/23/2023	Latitude:	[redacted]	Longitude:	[redacted]
MH Tests	12/23/2023	Project Details:	**Description of area Served by Project:** The sewage collection system serves San Tan Gateway Unit 1A Parcel 19 with a design of 28,320 gpd. It connects to the sewage collection system DA permit under ADEQ File # [redacted]		
As-built Plans	4/5/2024				
Other Document(s):					

Discharge Authorization: This Discharge Authorization is issued in accordance with Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Article 3, Part A, Section A301. The permittee is authorized to discharge from the facility at the location specified herein under terms and conditions of the general permit and applicable requirements of Arizona Revised Statutes Title 49, Chapter 2, and A.A.C. Title 18, Chapter 9.

DocuSigned by: [redacted] — [redacted] — Title — 7/3/2024 — Date

Reviewer: ASB

CC: [redacted] | Engineer | [redacted] | [redacted]

Phoenix Office
1110 W. Washington St. | Phoenix, AZ 85007
602-771-2300

Southern Regional Office
400 W. Congress St. | Suite 433 | Tucson, AZ 85701
520-628-6733

azdeq.gov

Revised June 2024

AOC Example – Arizona Department of Environmental Quality

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Katie Hobbs
Governor

Karen Peters
Cabinet Executive Officer
Executive Deputy Director

APPROVAL OF CONSTRUCTION

Project Description: SAN TAN GATEWAY UNIT 1A - PARCEL 19. AOC PERMIT FOR THE INSTALLATION OF 4,667 LF OF 8-INCH AND 2,244 LF OF 12-INCH C-900 PVC WATERLINE AND RELATED APPURTENANCES TO SERVE A [redacted]

Location: San Tan Valley, AZ

Project Owner: [redacted]
Address:

The Arizona Department of Environmental Quality (ADEQ) hereby issues an Approval of Construction for the above-described facility based on the following provisions of Arizona Administrative Code (A.A.C.) R18-5-507 et seq.

On 4/4/2022, ADEQ issued a Certificate of Approval to Construct for the referenced project.

On 6/17/2024, [redacted] P.E. certified that the project was built according to the as-built plans and specifications and ADEQ's Certificate of Approval to Construct.

This Approval of Construction authorizes the owner to begin operating the above-described facilities as represented in the approved plan on file with the ADEQ. Be advised that A.A.C. R18-4-203 requires the owner of a public water system to maintain and operate all water production, treatment and distribution facilities in accordance with ADEQ Safe Drinking Water Rules.

JM23

DocuSigned by:
[redacted]
8ECD4C06B9174E9...

PWS No.: 11-128
LTF No.: 104232

7/22/2024
Date Approved

[redacted]

C: ADEQ File No.: [redacted]
Pinal County Health Department

Main Office
1110 West Washington Street • Phoenix, AZ 85007
(602) 771-2300

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

www.azdeq.gov
printed on recycled paper

RIGHT TO APPEAL INFORMATION

The Arizona Department of Environmental Quality's review of this application was subject to the requirements of the licensing time frames ("LTF") statute under Arizona Revised Statutes ("A.R.S.") § 41-1072 through § 41-1079 and the LTF rules under Arizona Administrative Code ("A.A.C.") R18-1-501 through R18-1-525. This Notice is being issued within the overall time frame for your application.

ADEQ hereby approves your application for Approval of Construction Drinking Water Facilities under A.R.S. § 49-351. Your copy of the Approval of Construction Permit is on the reverse side of this Right to Appeal Information sheet.

This decision is an appealable agency action under A.R.S. § 41-1092. You have a right to request a hearing and file an appeal under A.R.S. § 41-1092.03(B). You must file a written Request for Hearing or Notice of Appeal within **30 days** of your receipt of this Notice. A Request for Hearing or Notice of Appeal is filed when it is received by ADEQ's Hearing Administrator as follows:

Office of Administrative Counsel
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, AZ 85007

The Request for Hearing or Notice of Appeal shall identify the party, the party's address, the agency and the action being appealed and shall contain a concise statement of the reasons for the appeal. Upon proper filing of a Request for Hearing or Notice of Appeal, ADEQ will serve a Notice of Hearing on all parties to the appeal. If you file a timely Request for Hearing or Notice of Appeal you have a right to request an informal settlement conference with ADEQ under A.R.S. § 41-1092.06. This request must be made in writing no later than **20 days** before a scheduled hearing and must be filed with the Hearing Administrator at the above address.

Please contact [redacted] if you have questions regarding this Notice or the Certificate of Approved of Construction.

Appendix 6: Application and Certification for Payment Example

APPLICATION AND CERTIFICATION FOR PAYMENT

PAGE ONE OF 1 PAGES

[redacted]

PROJECT: [redacted]

APPLICATION NO: [redacted]

INVOICE NO: 2411p-06 (skipped 03)

PERIOD TO: December 31, 2024

PROJECT NO: [redacted]

CONTRACT DATE: 4/26/24

Distribution to:
- ☐ ACCOUNTING
- ☐ PROJ. MGR.
- ☐ PROJECT FILES
- ☐
- ☐

FROM SUBCONTRACTOR:

[redacted]

CONTRACT FOR:

SUBCONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM			$ 968,420.64
2. Net change by Change Orders			$ 43,359.32
3. CONTRACT SUM TO DATE (Line 1 ± 2)			$ 1,011,779.96
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)			$ 1,013,555.53
5. RETAINAGE:			
a. 10% of Completed Work (Column D + E on G703)	$ 101,355.55		
b. 10% of Stored Material (Column F on G703)	$ -		
Total Retainage (Lines 5a + 5b or Total in Column I of G703)			101,355.55
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)			$ 912,199.97
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)	$ 855,930.52		
8. CURRENT PAYMENT DUE			$ 56,269.45
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)			$ 99,579.99

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		
Total approved this Month		
TOTALS	$0.00	$0.00
NET CHANGES by Change Order	$0.00	

The undersigned Subcontractor certifies that to the best of the Subcontractor's knowledge, information, and belief the Work covered by this Application of Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Subcontractor for Work for which previous Certificates for Payment were issued and payments received from the owner and that current payment shown herein is now due.

SUBCONTRACTOR

[redacted]

State of: Arizona County of: Maricopa

Subscribed and sworn to before me this _____ day of _____

Notary Public:

My Commission expires:

By: _____ Date: _____

Notary

BY: _____ DATE: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Subcontractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of Owner or Contractor under this Contract.

[redacted]

APPLICATION NO:
APPLICATION DATE: [redacted]
PERIOD TO:
INVOICE NO:

A	B	C	D	E	F	G	H	I		J	K	
ITEM	DESCRIPTION OF WORK	SCHEDULED VALUE	CHANGE ORDERS	TOTAL REVISED CONTRACT	WORK COMPLETED FROM PREVIOUS APPLICATION	WORK COMPLETED THIS PERIOD	STORED MATERIAL	TOTAL COMPLETED AND STORED TO DATE	%	BALANCE TO FINISH	RET. (IF VARIABLE RATE)	
1	***Sewer***											
2	Mobilization in and out for job	$15,000.00		$15,000.00	$15,000.00			$15,000.00	100.00%	$0.00	$1,500.00	
3	8" Sewer	$121,658.40		$121,658.40	$121,658.40			$121,658.40	100.00%	$0.00	$12,165.84	
4	8" Connect to Existing Line	$1,965.00		$1,965.00	$1,965.00			$1,965.00	100.00%	$0.00	$196.50	
5	Hydrovac	$4,831.20		$4,831.20	$4,831.20			$4,831.20	100.00%	$0.00	$483.12	
6	TV Camera	$4,831.20		$4,831.20	$4,831.20			$4,831.20	100.00%	$0.00	$483.12	
7	TV Camera Sewer Service	$9,375.00		$9,375.00	$9,375.00			$9,375.00	100.00%	$0.00	$937.50	
8	8" Cleanout	$3,405.00		$3,405.00	$3,405.00			$3,405.00	100.00%	$0.00	$340.50	
9	4" Sewer Service	$128,625.00		$128,625.00	$128,625.00			$128,625.00	100.00%	$0.00	$12,862.50	$46,410.00 plus tax
10	4' Dia. Manholes	$36,505.00		$36,505.00	$34,679.75	$1,825.25		$36,505.00	100.00%	$0.00	$3,650.50	48310.49
11	5' Dia. Manholes	$37,350.00		$37,350.00	$35,482.50	$1,867.50		$37,350.00	100.00%	$0.00	$3,735.00	
12	Manhole Drop Connection	$2,500.00		$2,500.00	$2,500			$2,500.00	100.00%	$0.00	$250.00	
13												
14	CO #1 Hard dig		$42,717.25	$42,717.25		$42,717.25		$42,717.25	100.00%	$0.00	$4,271.73	
15												
16	***Water***											
17	8" Waterline	$184,879.28		$184,879.28	$184,879.28			$184,879.28	100.00%	$0.00	$18,487.93	
18	8" Connect to Existing Line	$4,260.00		$4,260.00	$4,260.00			$4,260.00	100.00%	$0.00	$426.00	
19	Fire Hydrants	$74,115.00		$74,115.00	$74,115.00			$74,115.00	100.00%	$0.00	$7,411.50	
20	8" Valves	$23,940.00		$23,940.00	$23,940.00			$23,940.00	100.00%	$0.00	$2,394.00	
21	8" Vertical Realignment	$20,020.00		$20,020.00	$20,020.00			$20,020.00	100.00%	$0.00	$2,002.00	$13,652.07 plus tax
22	1" Water Services	$126,000.00		$126,000.00	$113,400.00	$12,600.00		$126,000.00	100.00%	$0.00	$12,600.00	14211.12
23	1.5" Water Services	$4,100.00		$4,100.00	$3,690.00	$410.00		$4,100.00	100.00%	$0.00	$410.00	
24	8x2" Blow Offs	$3,580.00		$3,580.00	$3,580.00			$3,580.00	100.00%	$0.00	$358.00	
25												
26	CO #2 Valve repairs		$642.07	$642.07		$642.07		$642.07	100.00%	$0.00	$64.21	
28												
29	***Storm***											
30	18" Storm	$9,297.60		$9,297.60	$9,297.60			$9,297.60	100.00%	$0.00	$929.76	
31	24" Storm	$68,411.20		$68,411.20	$68,411.20			$68,411.20	100.00%	$0.00	$6,841.12	
32	4' Dia. Manholes	$9,990.00		$9,990.00	$9,990.00			$9,990.00	100.00%	$0.00	$999.00	
33	End Sections	$35,685.00		$35,685.00	$35,685.00			$35,685.00	100.00%	$0.00	$3,568.50	
36												
37	Subtotal	$930,323.88	$43,359.32	$973,683.20	$913,621.13	$60,062.07	$0.00	$973,683.20		$0.00	$97,368.32	
38												
39	Tax: 4.095	$38,096.76	$1,775.56	$39,872.33	$37,412.79	$2,459.54	$0.00	$39,872.33	$0.00	$0.00	$3,987.23	
40												
41	**Total Amount**	**$968,420.64**	**$45,134.88**	**$1,013,555.53**	**$951,033.92**	**$62,521.61**	**$0.00**	**$1,013,555.53**		**$0.00**	**$101,355.55**	

Appendix 7: Unconditional Waiver and Release on Final Payment Example

UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT
(Pursuant to A.R.S. § 33-1008)

JOB: [redacted]

The undersigned has been paid been paid in full for all labor, services, equipment or material furnished to the jobsite or to [redacted] on the job of [redacted] and does hereby waive and release any right to mechanics' lien, any state or federal statutory bond right, any private bond right, any claim for payment and any rights under any similar ordinance, rule or statute related to claim or payment rights for persons in the undersigned's position, except for disputed claims for extra work in the amount of [redacted].

The undersigned warrants that he either has already paid or will use the monies he receives from this final payment to promptly pay in full all of his laborers, subcontractors, materialmen and suppliers for all work, materials, equipment or services provided for or to the above referenced project.

Date: February 6, 2025 [redacted]

npany)

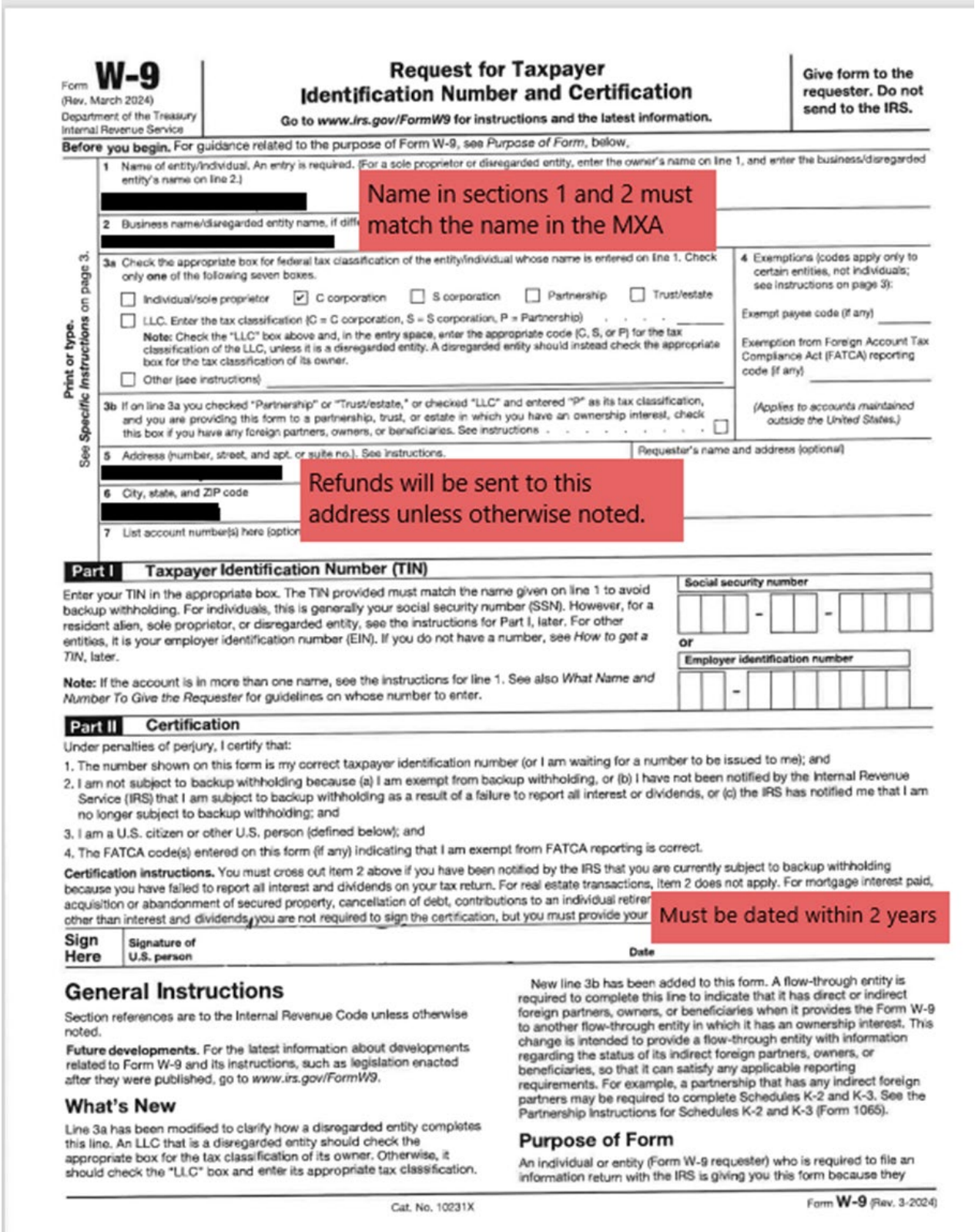
(Signature)

(title)

NOTICE THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL RELEASE FORM.

II-175

Appendix 8: W9- Request for Taxpayer ID Number and Certification Example



Form **W-9**
(Rev. March 2024)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give form to the requester. Do not send to the IRS.

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See *Specific Instructions* on page 3.

1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)

[redacted]

Name in sections 1 and 2 must match the name in the MXA

2 Business name/disregarded entity name, if diff

[redacted]

3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor ☑ C corporation ☐ S corporation ☐ Partnership ☐ Trust/estate

☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) . . . . .

Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner.

☐ Other (see instructions)

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any)

Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any)

(Applies to accounts maintained outside the United States.)

3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions . . . . . ☐

5 Address (number, street, and apt. or suite no.). See instructions.

[redacted]

Requester's name and address (optional)

Refunds will be sent to this address unless otherwise noted.

6 City, state, and ZIP code

[redacted]

7 List account number(s) here (optio

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

[ ][ ][ ] – [ ][ ] – [ ][ ][ ][ ]

or

Employer identification number

[ ][ ] – [ ][ ][ ][ ][ ][ ][ ]

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirer other than interest and dividends, you are not required to sign the certification, but you must provide your

Must be dated within 2 years

Sign Here **Signature of U.S. person** **Date**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

Cat. No. 10231X

Form **W-9** (Rev. 3-2024)

Appendix 9: Format for Address List

	A	B	C	D	E	F	G	H	I	J	L
1	**Builder Name**	**Subdivision Name**	**Lot Number**	**House Number**	**Pre-Direction**	**Street Name**	**Suffix**	**City**	**Zip Code**	**APN (Assessor's Parcel Number) nnn-nn-nnn-a**	**(CAGRD) Ground Water Replenishment District Number**
2	Example	Match plat name	1	1234	N	Example	St	Example	85300	123-45-678	Please provide if applicable.
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											