

City of La Quinta Public Works Department – Public Water Review Checklist

WATER PIPE SIZING

- Main Line Sizes: 8-inch, 12-inch (minimum size for residential, industrial, and commercial areas), 16-inch, 18-inch, 24-inch, 30-inch, 36-inch or 42-inch. If piping will serve additional areas, then sizing of minimum 12-inch lines may be increased.
- Hard copy of Fire Department approval of water system provided and confirms pipe sizing from hydraulic analysis and modeling. Fire Flow/Hydraulic Analysis/Modeling dictate pipe size. Provide water line for maximum proposed building size if future building architecture is not fully defined.
- Hydraulic Analysis/Modeling utilizes C Value = 120 for CML/CMC or DI per Hazen-William formula and C Value = 150 for PVC Piping.
- Pipeline looped for dual direction and flexibility, as possible.
- Service Line Minimum Size = 1-inch. It shall be sized in accordance with Section 1009 of the Uniform Plumbing Code. Meter sizes as follows: ¾-inch meter with 1-inch service line and fitting, 1-inch meter with 1½ inch service line and fitting, 1½-inch meter with 2-inch service line and fitting or 2-inch meter with 2-inch service line and fitting.

WATER PIPELINE REQUIREMENTS PER CVWD

- 18-inch pipe minimum-all frontage.
- Minimum pressure (static) = 60 psi (max pressure per pipe & valve manufacturer, or <100 psi).
- Minimum pressure (fire) = 20 psi (at fire hydrant).
- Maximum Velocity:
 - o 12-inch and smaller = 5 ft/sec
 - o Cul-de-Sac/dead end pipelines = 10 ft/sec
- Maximum Head loss:
 - o 18-inch and greater = 2.31ft / 1000 LF
- Pipe shall have a minimum cover of 36 inches. If not possible, pipe strengthening is required
- Polyethylene Encasement is required south of Hwy 111 and east of Washington

WATER PIPING SCHEDULE PER GENERALIZED CVWD SPECIFICATIONS – SEE CVWD FOR MORE DETAILS

Diameter

Less than 8-inch	DIP PVC Copper (typ. 2-inch diameter or less)
8-inch & 12-inch	DIP CML/CMC
16-inch	DIP CML/CMC
18-inch to 42-inch	DIP CML/CMC

DIP - Ductile iron pipe (polyethylene wrapped in corrosive locations)
 CML/CMC – Cement mortar lined & coated steel pipe (non corrosive locations)
 PVC – Polyvinyl chloride pressure pipe

WATER PIPE LOCATIONS

- Waterline is 1 ft or more above sewer line when crossing or encase.
- Waterline is 11 ft per Coachella Valley Water District (CVWD) or more away from sewer line when running parallel.
- Waterline is a minimum of 5 ft or more away from storm drain or other wet utilities when running parallel.
- Other Separation Zones per State of California Department of Health Services (See CVWD Std W-1 and W-2)
- Provide elevations at all crossings; sewer, water and storm drains.

WATER VALVES

- Small Mains (12-inches or less)
 - Full Line Size Gate Valves
 - Resilient Seat
 - Ductile Iron
 - Epoxy Coated
 - Lined in accordance w/American Water Works Association (AWWA) C509
- Large Mains (16-inches and greater)
 - Full Line Size Butterfly Valves
 - Epoxy Lined and Coated
 - Ductile Iron Flanged Butterfly Valves
 - Class 150B in accordance with AWWA C504
- Maximum Spacing for main line valves does not exceed 1000 ft or as directed by the City.
- Valves Located on Discharge Side of Connections (idea is to isolate minimum effected area during repair)
 - Minimum 3 at Crossings
 - Minimum 2 at Tees
 - Always at beginning of Dead End Mains
 - City require additional valves at critical sections
 - Additional valves when more than 3 valves required for isolating a pipeline section.
- Isolation Valves flanged to Cross or Tee within Street Intersection
- Isolation Valves direct buried.

WATER BACKFLOW PREVENTION

- Backflow prevention found on all Domestic Water Service & Irrigation Connections for all Commercial and Industrial Buildings.
- Backflow prevention found on domestic water service connections where recycle water is used on the property.
- Backflow prevention found on domestic services where water from other sources may become cross-connected. Also see Title 17, Drinking Water Supplies, of the California Administration Code.

CORROSIVE SOIL DESIGN

- Cathodic test stations provided when corrosive soils are encountered, City requires cathodic protection for transmission mains and major pipelines regardless of soil conditions.
- Testing shall evaluate PH, Redox, Sulfide, Resistivity and Sulfate per Field and Laboratory testing.
- Special protective coatings for pipe and fittings provided, as applicable
- Test stations installed behind existing or proposed curbs to allow safe access to personnel.
- Test stations installed at 1000 ft intervals or as per City Engineer.

SERVICE INSTALLATIONS

- Services shall not be connected to 18 inch or larger mains without City Approval.
- Arterial Roadway Medians and Private Projects Landscape Easements shall utilize separate meters.

FIRE HYDRANTS

- Set fire hydrants behind curb 7 ft 6 inches behind FL, per City Std 636 and per CVWD Standard.
- Installed at 300 ft increments except on Arterial Roads
- 500 ft Separations on Arterials. Alternate sides of Roadway.
- 5 ft Minimum Separation from Driveways, Street Light, Power Pole, Sign, Fence, Walls, Etc.
- 12 inches behind sidewalk when sidewalk is adjacent to curb
- 20 inches behind curb face when sidewalk is not adjacent to curb (must have break-off check valve).
- Piping shall be the same as the mains and include break-off check valve.

BLOW-OFFS

- | Main Size | Blow-Off Size |
|---|---------------|
| <input type="checkbox"/> 12-inch to 16-inch | 4-inch |
| <input type="checkbox"/> 18-inch to 24-inch | 6-inch |
| <input type="checkbox"/> > 24-inch | 8-inch |
- Located at all low points and all dead ends.
 - Located at all upstream sides of mainline pipelines 16-inches in diameter or greater.
 - Located as near to storm drain catch basins as possible.
 - On Arterial streets, located prior to curb radius with service line perpendicular with mainline.

COMBINATION AIR/VACUUM RELEASE VALVES

- Located at all high points.
- Located at all dead ends.
- Located at all downstream sides of mainline pipelines 16-inches in diameter or greater.
- On Arterial streets, located prior to curb radius with service line perpendicular with main line.
- Air Vac sizing shall be based on APCO APSLIDE Model or Engineering Calculations.

TEMPORARY END OF LINE APPURTENANCES

- 4-inch blow off installed at each end of line segment for future use.
- Install an air vacuum if the end of line creates a high point.

TRACER WIRE

- Install tracer wire on all PVC waterlines.
- Locator wire shall be brought to the surface of all appurtenances (i.e. fire hydrants, water services...etc).

DUCTILE IRON FITTINGS FOR PVC C900

- Fittings shall be Cast Iron push on or mechanical joint with exceptions.
- Exceptions: with Valves shall be push-on or mechanical joint by flange.
- Ductile Iron shall be "Compact Ductile Iron Fittings" per ANSI/AWWA A21.53/C153.
- Unless specified, line w/cement mortar (double thickness) & seal w/bituminous coating per ANSI A21.6 or ANSI 21.51.
- Shall be encased by polyethylene per AWWA C105 at time of installation.

RESTRAINED SYSTEM – USE ON SLOPES, ETC.

- PVC – Use Uni-flange or Mega-Lug
- DIP – Field lock gaskets or TR-Flex Joints
- CML & CMC Steel Pipe – Welded joints
- Water working pressure equal to full rating with a minimum 2:1 safety factor.
- All devices shall provide 360 degree of support around the circumference of the pipe.
- Restrained on each side of bends, tees, reducers & other fittings to be determined by EOR or manufacturer.