

**DEVELOPMENT PLAN REVIEW  
BY THE MONTE VISTA WATER DISTRICT (MVWD)**

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**1.0 PRINCIPLES**

All developer-funded construction projects with the Monte Vista Water District (MVWD or District) shall comply with the following Eight Principles:

**Principle 1: Application Procedures**

- (a) Any person or entity who desires to provide a water system for or within a tract of land which is proposed to be subdivided or otherwise developed shall be required to make written application therefore with the District. The application shall contain the following information.
  - 1. The name and address of the subdivider or developer and of the project manager;
  - 2. The legal description of the property involved;
  - 3. The location of said property; and
  - 4. Three (3) copies of the parcel map or tract map and/or preliminary approved water map.

**Principle 2: Investigation**

- (a) Upon receipt by the District of the written application, the General Manager shall review the application and upon his approval thereof shall make an investigation and site check of the proposed subdivision or development and thereafter report his findings to the Board of Directors. Thereafter, the District shall advise the applicant in writing of the cost of improvements described in the application. The cost figure furnished by the District shall be effective and binding upon the District for a period of ninety (90) days only. Thereafter, the District may elect to extend such period for an additional ninety (90) days or may resubmit to the applicant, upon his request, a revised cost figure.
- (b) In any case wherein an applicant requires any storage, pumping, or related facilities for the subdivision or development, such application shall be submitted to the Board of Directors of the District for its consideration and approval.

### **Principle 3: Fees and Deposits**

- (a) Subdividers and developers shall be required to pay in advance the following fees and make deposits to the District for providing water service. The rates therefore will be in accordance with the applicable Rate Resolution then in effect, as it may be established from time to time.
  - 1. A connection fee for each required service for existing facilities and future facilities required to provide and maintain the District's water system.
  - 2. A fee for each required service, which shall include meter and installation thereof.
  - 3. A fee for each fire service which shall include a detector check and installation thereof.
  - 4. Prior to approval of the subdivision map, the applicant shall be charged a fee for design and/or review of the water system map in accordance with the applicable Rate Resolution then in effect, as it may be established from time to time.
  - 5. A cost for General Administration based on a percentage for said time as determined and established by the District from time to time.
  - 6. A deposit in the amount of the estimated construction cost, including General Administration costs, for providing water service to said development. Upon completion of construction, the subject work order shall, within ninety (90) calendar days, be audited and any difference between the estimated and actual cost shall be refunded to the developer, if in excess of actual cost, or if the cost of construction exceeds the estimate, developer shall be required to pay the difference.
- (b) The subdivider or developer shall, at his sole cost, provide all onsite piping and connections at the property line.

### **Principle 4: Construction and Specifications**

- (a) The size, type, and quality of materials and location of all water lines shall be as specified by the District. All construction shall be performed by the District or by a contractor selected through the formal bidding procedures set forth by the County Water District Law; Division 12, Section 30000 et. seq. of the State Water Code, or when the developer elects to furnish the contractor, the District shall, within its sole discretion and in the best interest of the District, inspect and supervise the work to guarantee that it conforms with AWWA standards.

### **Principle 5: Reimbursement Agreements**

- (a) The District may offer to enter into a reimbursement agreement with any and all developers. The term of the reimbursement agreement shall not exceed ten (10) years. Each reimbursement agreement will be created to best conform with that

certain development. The reimbursement agreement may be based on front footage, acreage, or any other conditions that will create equity to any pipeline extension or improvement associated with a development.

- (b) The Board of Directors shall retain the authority and determine when it is economical, practical, and feasible to create a reimbursement agreement with itself for underdeveloped properties when the District uses public funds for extensions and improvements in the best interest of the District.

#### **Principle 6: Property of the District**

- (a) All facilities and equipment as described in the application shall become the sole property of the District. Also, the subdivider or developer shall provide and grant easements and rights-of-way to the District as necessary to provide service to any development.

#### **Principle 7: Establishing Water Rates**

- (a) The Monte Vista Water District shall set water rates for municipal, agricultural, and industrial uses pursuant to the rules and regulations of the County Water District Law, Division 12, Section 30000 et. seq. of the State Water Code. The water rates and associated fees will be in accordance with the applicable Rate Resolution then in effect, as it may be established from time to time.

#### **Principle 8: Establishing Miscellaneous Fees**

- (a) The Monte Vista Water District shall set miscellaneous fees and charges from time to time in accordance with the applicable Rate Resolution then in effect.

### **2.0 PLAN REVIEW REQUIREMENTS**

#### **2.1 Fire Department Approval**

The developer's engineer shall obtain approval from the governing fire department for fire hydrant spacing. After the first utility improvement plan check by the District, the developer's engineer must have the governing fire department sign the plans before submitting them for a second plan check.

#### **2.2 Developer Improvement Plans**

##### **2.2.1 First plan checks submittal requirements**

The developer/engineer shall submit the following items for first review of any residential, commercial, or industrial development:

- A. Two (2) sets of utility improvement plans (bond paper); maximum size 24" x 36", without exception; plus one (1) set of the plans in PDF format.

- B. Two (2) copies of tract/parcel map (bond paper) showing gross acreage, street names, and MVWD easements with provision for MVWD execution; plus one (1) set of the tract/parcel map in PDF format.
- C. Two (2) sets of grading plans (bond paper); plus one (1) set of the plans in PDF format.
- D. Engineer's quantity and cost estimates for water facilities.
- E. Transmittal letter from the developer's engineer requesting the commencement of District plan check procedure.

After first plan check, the District will return one (1) red-lined set of the utility improvement plans and the red-lined tract/parcel map to the developer's engineer for corrections.

### **2.2.2 Second (& Subsequent) Plan Check Submittal(s)**

The developer/engineer shall submit the following items for second (and all subsequent plan-checks) of any residential, commercial, or industrial subdivision:

- A. Two (2) sets of the revised utility improvement plans (bond paper) and two (2) set tract/parcel map (bond paper) plus one (1) set of both plans in PDF format. The plans must be approved by the of the local fire authority having jurisdiction over the area of development prior to the second plan check.
- B. Check print from the previous check.
- C. For Final submittal for signature will be one (1) set of Mylar.

### **2.2.3 Required Easements**

If an easement to the District is required for construction and/or maintenance of water or recycled water facilities, the minimum easement width shall be ten (10) feet for domestic water. Deep water lines will require wider easements equal to twice the facility depth rounded upward to the nearest five (5) feet. Easements shall be contained in single lots and shall not straddle lot lines. In the case of parallel facilities the easement width shall not overlap. Additionally, the water or recycled water utility must be centered on the said ten-foot easement (i.e. 5-feet on both sides).

Written easements shall be provided to the District for review after final system installation is completed as field conditions may change proposed designs. Submitted easements must reflect "As-Built" conditions and written approval by the District must accompany Developer's recordation submittal to the San Bernardino County Recorder's office.

Two (2) copies of easement legal descriptions with accompanying sketch or plat

shall be prepared by the developer's engineer and submitted to the District for review. Easements for facilities which will be transferred to the District may be shown on the tract or parcel map with the correct certificates for District acceptance. The legal description for the easements shall be in a form acceptable to the District and must be accompanied by a current title report to be checked by the District Engineer for accuracy. Dedicated easements must also be shown on the construction plans and the index map, without exception. Improvement plans for the District facilities will not be approved until all required easements have been dedicated to the District along with any necessary reconveyances or subordination agreements. Easement exhibits shall be 8½" x 11", or 8½" x 14" without exception. Additionally, occupancy releases will not be provided until proof of recordation has been received by the District for all required easements.

Where facilities are to be located in private streets, the easement shall be a minimum of twenty (20) feet wide. In multi-family residential complexes or business parks, the developer may dedicate a "blanket easement" over all internal paved areas to MVWD as long as it covers the minimum area MVWD needs to access the facilities. The appropriate note shall be included on the tract map and the plans. Easements ten (10) feet wide and extending five (5) feet beyond all fire hydrants and water meter locations will also be required unless waived by the District.

Three (3) to five (5) foot wide utility easements parallel to public streets may be required depending on street right-of-way width and sidewalk locations, and shall be determined by the District Engineer.

#### **2.2.4 Improvement Plan Approval**

Utility improvement plans must be approved by the District Engineer before any construction can start. Approval by the District Engineer will be contingent upon satisfying the following requirements (but not limited to the following):

- A. All required corrections have been made on the utility improvement plans.
- B. The plans have been signed by the local fire authority having jurisdiction over the area of development.
- C. Tract/parcel maps must be signed by the District prior to plan approval.
- D. All required fees and charges have been paid by the developer.
- E. All digital submission requirements have been met.

### **2.3 Improvement Plan Requirements**

All plans submitted to the District for plan checking and approval of water facilities will be submitted on 24" x 36" sheets and shall conform to the standards of the jurisdictional agency in which the improvements are located. The plans shall also

contain the information detailed in the following subsections.

### **2.3.1 Title Sheet**

Title sheets for utility improvement plans shall contain the following information as a minimum:

- A. Project identification, tract/parcel map number, project name, etc.
- B. Location map showing general area with the project area clearly indicated and described in words.
- C. District's standard water notes.
- D. An index map is required and must contain all the following information:
  - (1) Scale 1" = 100'
  - (2) All existing and proposed water and sewer mains, fire hydrants, water valves, manholes, and clean-outs.
  - (3) The size and material of all mains.
  - (4) Lot lines for the proposed development, footprints of buildings, total square footage, and number of stories, as known and service stub locations for each lot.
  - (5) North arrow.
  - (6) Street names.
  - (7) Legend of symbols and lines.
  - (8) All proposed easements for District facilities.
- E. Signature block for MVWD approval of water facilities in the form to be provided by the District. Indicate which facilities are included on improvement plans.
- F. Signature block for the local fire authority having jurisdiction over the area of development.
- G. Benchmark description and latest elevation with datum information.
- H. Basis of bearings.
- I. Name, address, phone number, and contact person of the engineering firm preparing the plans.
- J. Name, address, phone number, and contact person of the property owner or developer.
- K. Index of sheets.

- L. Quantity estimates and construction notes may appear on the second page of the plans, immediately behind the title sheet. Construction notes for water shall not be mixed together and shall appear under separate headings. Different number series shall be used for each type of facility.
- M. Underground Service Alert notification block.

### **2.3.2 Second Sheet**

Typically the second sheet of the plan set will have the following information:

- A. Quantity estimates.
- B. Standard notes.
- C. Construction notes.
- D. May contain the index map, if it will fit conveniently.
- E. Street sections showing street widths to right-of-way and location of sidewalks, if they will fit conveniently.
- F. Detail drawings, if they will fit conveniently.

### **2.3.3 Plan and Profile Sheets**

All plan and profile sheets shall include the following information:

- A. Scale. Horizontal scale shall be 1" = 20' or 1" = 40' and be clearly indicated. The vertical scale shall be 1" = 2' or 1" = 4' and be clearly indicated.
- B. North arrow.
- C. At least two (2) separate points of the utility system must be tied into the NAD 83 datum record data.
- D. Existing water and recycled water facilities adjacent to the proposed development must be shown. Size and material of these facilities must be indicated.
- E. Proposed and existing easements to be dedicated to the District for water and recycled facilities must be shown on the plan.
- F. Proposed building or dwelling unit pad elevations must be shown.
- G. Storm drain alignment shall be indicated in the plan view and all crossings of water facilities and the storm drain shall be shown in the storm drain profile. Where water lines cross over the storm drains the top of the storm drain and the bottom of the water line must be shown, along with the

proposed depth of cover.

H. Pothole data showing cover at tie-in points to existing water facilities.

### 2.3.4 Digital Submission Requirements

All engineers preparing improvement plans to submit to the District for plan check purposes will be required to submit a digital graphics file containing the boundary information, street centerline, curb and gutter, right-of-way, lot/parcel line, easements, domestic water facilities included in the plan. The date is to be submitted along with the final plan check materials. The plan and profile drawings are to be submitted digitally.

#### Required Data

The following table indicates which features are required to be transmitted digitally and those which are desirable but not required:

#### A. Tract/Parcel Map Information

All Tract and Parcel Map information shall be submitted in digital format. Media requirements and digital formats shall be as described herein.

#### B. Improvement Plans

Street Centerline	Centerline	Required
	Street Name	Required
	Bearings/Distance/Curve Data	Optional
	Annotation	
Curb and Gutter	Curb and gutter line	Required
	Descriptive Data	Required
	Bearings/Distance/Curve Data	Optional
	Annotation	
Right-of-Way	Right of Way Lines	Required
	Descriptive Data	Required
	Bearings/Distance/Curve Data	Optional
	Annotation	
Lot/Parcel Data	Lot Lines	Required
	Lot Numbers	Required
	Lot Bearings/Distances	Optional
	Annotation	
Easement Data	Easement Lines	Required
	Descriptive Data	Required
	Bearings/Distances/Curve Data	Optional
	Annotation	



Building/Structure Data	Building and/or Structural Footprints	Required
	Descriptive Data	Required
	Bearings/Distances/Curve Data Annotation	Optional
Domestic Water Data	Domestic Water Mains	Required
	Domestic Water Laterals	Required
	All Associated Facilities (i.e. Valves, Fire Hydrants, Meters, etc.)	Required
	Descriptive Data	Required
	Bearings/Distance/Curve Data Annotation	Optional
Sewer Data	Sewer Mains	Required
	Associated Facilities (i.e. Manholes, Cleanouts, Lift Stations, etc.)	Required
	Sewer Laterals	Optional
	Descriptive Data	Optional
	Bearings/Distance/Curve Data Annotation	Optional

Data Layering Requirements

The data will be layered as a minimum into the following features:

- Boundary Data
- Street Centerline
- Curb and Gutter Lines
- Right-of-Way Lines
- Lot/Parcel Lines
- Easement Lines
- Building/Structure Footprints
- Domestic Water Mains
- Domestic Water Service laterals
- Domestic Water Appurtenances (i.e., Valves, Fire Hydrants, Meters)\*
- Sewer Mains
- Sewer Laterals
- Sewer Appurtenances (i.e., Manholes, Cleanouts, Lift Stations)\*
- Recycled Water Mains

### Data Accuracy and Coordinate System

- The coordinate system of data shall be the State Plane NAD 83 Coordinate System.

### File Formats and Media Requirements

- Digital files shall be submitted in both PDF format and AutoCAD 2010 drawing file (DWG) format. Digital files should be submitted on a Windows formatted CD.

### Checking of Digital Data

The digital data will be checked for the following:

1. Correct layering
2. Verification that annotated and calculated data are consistent
3. Verification that digital and hard copy plans are consistent
4. Verification of correct coordinate system
5. Verification that digital files do not contain unresolved line types, font files, and cross- references.

## **2.4 Non-Single Family Residential (SFR) Application Requirements**

### **2.4.1 Domestic Water Services**

All services for non-SFR developments must be equipped with approved backflow prevention devices; a double check detector assembly (DCDA) for fire lines and an RPPD backflow device for non-SFR domestic water service.

Items required to make application for non-SFR domestic water service are:

- A. One (1) set of improvement plans with service lateral location highlighted.
- B. One (1) set of plumbing plans showing the number of fixtures units.
- C. Completion of New Water Service Connection Request Form as provided by the District.

Domestic water service for irrigation requires a site plan and a letter as described above. A request for domestic water service for irrigation must be approved by the District Engineer. Where available, recycled water must be used for irrigation service.

### **2.4.2 Fire Service Requirements**

Submit to the District a new water service connection request form. All fire service connections will be made through a double detector check valve assembly

and/or the District's Standard Drawings and the plan check submittal package shall include a site utility plan showing:

- A. Property lines and required easements.
- B. Building footprint.
- C. All on-site private fire hydrants.
- D. Stamp or signature of the local fire authority having jurisdiction over the area being developed.
- E. Address of the building.

#### **2.4.3 Public Fire Hydrant Requirements**

Application for installation of public fire hydrants shall include a site utility plan showing:

- A. Property lines and required easements.
- B. Building footprint.
- C. Location of public fire hydrant approved by the local fire authority having jurisdiction over the area being developed.

#### **2.4.4 Recycled Water Service Requirements**

All requests for recycled water service must be accompanied by one set of landscape irrigation system plans which have been approved by the District. If recycled water is currently available, or will be available as determined by the District Engineer, it must be used for landscape irrigation as specified in the District Rules and Regulations. The District Engineer must approve any decision not to use available recycled water for landscape irrigation.

### **2.5 Inspection**

All work shall be subject to inspection by the District and shall be left uncovered until approved by the District Inspector. The contractor shall not proceed with any subsequent phase of work until the previous phase has been inspected and approved by the District.

#### **2.5.1 Notice to Start Construction**

Notice shall be given to the District Inspector at least 96 hours before starting construction. Signed utility plans must be delivered to the District Inspector at least four (4) working days before the contractor will be allowed to start construction.

### **2.5.2 Pre-Construction Conference**

A pre-construction conference must be held at least forty eight (48) hours before the start of construction. The contractor's job foreman and/or job superintendent, the developer's engineer and the District Inspector must be present. The purpose of this meeting will be to answer any questions on District specification requirements, to obtain the contractor's construction schedule and emergency phone numbers, and to discuss any circumstances which may affect job installation.

### **2.5.3 Water and/or Recycled Water System Inspections**

Inspection shall be made at the intervals listed below:

- A. Trench excavation and bedding.
- B. Placing pipe, fittings, and structures; including warning tape on recycled water main and service lines.
- C. Placing and compacting the pipe zone backfill.
- D. Backfilling balance of trench to grade. Compaction test to be performed by cognizant building authority in public right-of-way and by private soils consultant retained by the developer and acceptable to the District in private streets and easements. Copies of test results shall be given to the District by the developer for approval before final acceptance of the work.
- E. Pressure testing all mains and services.
- F. Disinfecting of domestic systems and flushing of all water systems.
- G. Re-paving trench cuts.
- H. Raising valve box covers to finish grade and painting to District standards.
- I. Fire hydrants painted and pads poured.
- J. Installation of service lines, meter boxes, and water meters.

### **2.5.4 District Authority**

The District shall have access to the work at all times during construction and shall be furnished with every reasonable facility for ascertaining full knowledge of the progress, workmanship, and character of materials used and employed in the work. No pipe, fittings, or other materials shall be installed or backfilled until inspected and approved by the District Inspector. The contractor shall give due notice in advance of backfilling to the District Inspector so that proper inspection may be provided.

Inspection of the work shall not relieve the contractor of any obligations to complete the work as prescribed by the standard specifications. Any known defective work shall be corrected before testing or final inspection will be permitted. Unsuitable materials may be rejected even if these materials have been previously overlooked by the District Inspector.

The District Inspector shall have the authority to suspend the work completely or in part for such time as it may deem necessary if the contractor fails to carry out instructions given by the District Inspector, or to perform any required provisions of the plans and specifications. The contractor shall immediately comply with a written order of the District Inspector to suspend the work completely or in part. The work shall be resumed when improper methods or defective work are corrected as ordered and approved in writing by the District Inspector.

### **2.5.5 Water, Recycled Water in Service Prior to Acceptance**

The District Inspector may approve putting newly installed water and recycled water into service after compaction has been approved by the cognizant building authority and the portions have been pressure tested, chlorinated, flushed, and potable water mains have passed the bacteriological test. This partial acceptance shall be granted only upon written request from the developer and subsequent approval by the District Inspector. Upon this written approval for partial acceptance of facilities, the developer shall be relieved of the duty to maintain the portions so used or placed into operation provided, however, that nothing in this section shall be construed as relieving the developer of full responsibility for completing the work in its entirety, for making good any defective work and materials up to one year following the completion of all phases of the work, for protecting the work from damage, and for being responsible for damage and for work as set forth in the agreement and other contractual documents; nor shall such action by the District be deemed completion and acceptance, and such action shall not relieve the developer of its obligations.

### **2.5.6 Final Water and Recycled Water Facilities Inspection**

Before final acceptance, the District Inspector will make a final inspection of all work, accompanied by the contractor's superintendent or foreman, to verify that:

- A. All phases of the job are complete in accordance with plans and specifications.
- B. Valve boxes are raised to finish grade and that all repairs are complete.
- C. Valves are referenced and the inspector has been given all reference measurements.
- D. Right-angle meter stops, meters, and customer service valves are properly positioned and all meter boxes are positioned and raised to proper grade and

meters installed.

- E. Fire hydrants are raised to proper grade, are in a vertical position, painted, and concrete pads are poured.
- F. Backfill has passed all compaction testing.
- G. System valves are turned and left open (except those specifically required to be normally closed), turns required for complete open/close cycle are recorded on the record drawings.
- H. Domestic water lines have been chlorinated.
- I. Line pressure testing and flushing have been completed.
- J. The job site is clean and cleared of all the contractor's equipment and materials.
- K. Service lateral locations have been marked on curbs.
- L. Submittal of As-Built to the District for approval. Upon approval, submit the As-Built in Mylar and digitally both in AutoCAD 2010 (or later version) and in PDF format.

## **2.6 District's Regulation Regarding Cross-Connections**

All potable water services shall be subject to the provisions of the MVWD. The following summarizes some of those provisions:

Cross connections of any type that permit a backflow condition from any source or system other than that of the District's potable water mains to the potable water system are prohibited. A connection constituting a potential or actual backflow hazard will not be permitted unless a backflow device or air gap, which is approved by the California State Department of Health and local health agency and complies with Title 17 of the California State Administrative Code, is installed. Such an installation shall at all times be subject to inspection and regulation by the District for the purpose of avoiding possibility of backflow. The District has a cross-connection control officer who is available for consultation on any question regarding cross-connections.

The District will not provide water service to any premises unless the public water supply is protected as required by State, County, and District regulations. Besides special situations, backflow devices are required for the following instances:

- a. All domestic water irrigation services.
- b. All commercial domestic water services.
- c. All industrial domestic water services.

- d. All fire lines.
- e. All private domestic systems or fire line systems having two or more points of connection to District mains.
- f. All domestic water services where there is recycled water service on the premises.
- g. All domestic water services where there is an auxiliary water source on the premises.

Backflow prevention devices shall be approved by the District and shall be installed by, and at the expense of, the customer. The customer shall have the device tested at least once a year by a tester certified by the San Bernardino County Health Department and service such devices to maintain them in satisfactory operating condition and shall overhaul or replace such devices if they are found defective. Records of such annual tests, repairs, and overhauling shall be kept by the customer and copies forwarded to the District cross-connection control officer and local health agency.

Water service to any premises may be discontinued by the District, after notice, if a backflow prevention device required by the District Rules and Regulations is not installed, tested, and maintained; if any defect is found in an installed backflow prevention device; if it is found that the backflow prevention device has been removed or bypassed; or if unprotected cross-connections exist on the premises. Service will be restored only when such conditions or defects are corrected to the satisfaction of the District.

MVWD Rules and Regulations further define how water lines must be marked where multiple water systems are in use, and outline the duties and responsibilities of a property's water supervisor. Additional references for guidelines as to when, why, and what types of backflow and cross-connection control devices are approved may be found in:

- A. Regulations Relating to Cross-Connections, California Administrative Code - Title 17 - Public Health.
- B. Manual of Cross-Connection Control, published by Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, University Park, Los Angeles, California 90007.

## **2.7 Backflow Device Locations**

Any commercial or industrial domestic water service will require that a Reduced Pressure Principle backflow device (RPPD) be installed immediately downstream of the water meter. The device must be installed in accordance with District Construction Manual. The assembly must be above ground and cannot be installed in an underground vault.

A fire service must have a Double Check Detector Assembly (DCDA) backflow assembly with bypass meter as required in the District Construction Manual. These assemblies can be installed in such a manner as to be screened from view, but must be accessible to District personnel at all times. There must be 5 feet of clearance on all sides of the DCDA assembly installed above ground. In addition a 10 foot wide easement must be dedicated to the District from the public right-of way to the DCDA assembly. DCDA are not to be installed in vaults.

### **3.0 DESIGN CRITERIA, DOMESTIC WATER FACILITIES**

The following sections are design criteria to be used in the design of domestic water systems. The developer and his engineer shall be responsible to ensure that designs submitted are consistent with the MVWD standards drawings and specifications, and generally accepted standards of good engineering practice.

#### **3.1 Main Line Sizes**

The typical minimum size distribution main pipes shall be 6-inch, Class 350 ductile iron pipe, unless otherwise noted and approved. On short cul-de-sac dead-end mains 4-inch (with a maximum of ten (10) each, 1-inch services) may be allowed, however, 6-inch size main must be used to the last fire hydrant tee.

#### **3.2 Depth of Cover**

Distribution mains, 10-inch and smaller, shall have a minimum of 42 inches of cover between the top of the pipe and the finished street grade unless shown differently on the improvement plans or otherwise directed by the District Inspector due to unusual field conditions.

Water mains, 12-inch and larger, shall have a minimum of 48 inches of cover between the top of the pipe and the finished street surface unless shown differently on the improvement plans or otherwise directed by the District representative due to unusual field conditions. **Storm drain systems and sewer systems must be designed with sufficient cover so that the water mains and service laterals can be built over the top of the storm drain mainline and laterals.**

#### **3.3 Standard Location**

Domestic waterline centerlines shall be located six (6) feet from the face of the curb for all pipelines 12-inches in diameter and smaller. **Water lines will not be allowed within easements in residential lots. There must be a separate lettered lot, minimum width 15 feet, if a water line needs to go outside the public street right-of-way from cul-de-sac to cul-de-sac or from cul-de-sac to open space of tract common area.**

Where water pipelines are designed to cross perpendicular beneath retaining walls or other structures (specific written permission required for each instance), the pipeline shall be constructed in a steel pipe casing of sufficient size and thickness (per



MVWD's approval) and with a minimum vertical clearance of at least one (1) foot from the footing or structure itself.

### **3.4 Valve Arrangements**

There shall be three (3) control valves at each tee intersection of two distribution mains. If the two distribution mains cross there shall be four (4) valves.

On long blocks, intermediate valves shall be installed so that no more than twenty-eight (28) dwelling units, six hundred (600) feet of main, or two (2) fire hydrants will be out of service at any time. Additional looping of main lines may be necessary to satisfy this condition and the arrangement of valves within the distribution system will be reviewed to identify the optimum network layout.

A valve must be placed at each end of an easement where a water line passes through easements outside the traveled streets.

### **3.5 Separation Criteria for Water, Sewer, and Recycled Water**

#### **3.5.1 Horizontal Separation**

The State's Division of Drinking Water regulations require a 10-foot minimum horizontal separation between domestic water and recycled water or sewer lines.

#### **3.5.2 Vertical Separation**

Water, sewer, and recycled water lines are typically located vertically from the street surface down in order of decreasing quality. Water will be the shallowest and sewer mains will be the deepest.

### **3.6 Fire Flow Requirements**

The design requirements for fire flow will be determined by the local fire jurisdiction for the specific area under development. Any plan submitted for second plan check must have been reviewed and approved by the local fire jurisdiction. The signature of the local fire department representative on the plans shall constitute the only form of accepted approval of the fire protection system provided.

### **3.7 Water Service Materials and Sizes**

Approved materials and manufacturers for various service materials and connections are listed in the Standard Drawings or the Technical Specifications provided by MVWD which are to become part of the project. The minimum domestic service size shall be 1-inch and made of copper tubing. Service sizes will be shown on the plan.

### **3.8 Water Meters**

All water meters will be furnished by the developer and approved by the District.

Construction water meters shall be applied for through the MVWD Customer Services Department.

### **3.9 MVWD Standard Domestic Water Notes**

These will be provided by MVWD in AutoCad or Word format.

### **3.10 Miscellaneous Standard Guidelines**

- A. Separate quantity estimates are to be included on the plans to indicate quantity of pipe, number of hydrants, valves, fittings, services, meter boxes, etc.
- B. The plans shall show, in plan and profile views, the position of all other known existing underground utilities as well as proposed underground utilities. Vertical clearance at crossings shall be indicated by showing top of pipe and bottom of pipe elevations at the point of intersection.
- C. Temporary flush-out assemblies shall be installed at the end of all mains and large service stub-outs for testing and flushing purposes and be removed before performing final paving.
- D. Air and vacuum relief valves shall be installed at all high points of water.
- E. Blow-offs or fire hydrants shall be installed at all low points of the water system.
- F. Water sample stations shall be provided for each contiguous water service area. Where there are separate pressure zones, a separate water sample station shall be provided for each zone in a location approved by the District.