II. GENERAL REQUIREMENTS

A. GENERAL

The water, sewer and recycled water systems shall be designed in accordance with the Jurupa Community Services District's Master Plans, Rules and Regulations, Standards, Specifications, and Standard Drawings, under the direction of a civil engineer licensed in the State of California. All District fees and facilities charges associated with the proposed water, sewer and/or recycled water system shall be paid for by the Developer.

B. PLAN CHECK PROCEDURAL GUIDELINES

1. Processing Sequence. Refer to "General Procedure" in Section I.

2. Format of Plans. Water, sewer, and recycled water plans shall be formatted as follows (digital submittal of PDF formatted plans will be per District's direction):

   a. All sheets shall be 24" x 36" (see Appendix I of Section VIII for title block format), ink on reproducible mylar plans. Scale shall be 1" = 40' horizontal and 1" = 4' vertical.

   b. Index sheet shall include an overall layout of the water/sewer/recycled water system at a scale that clearly delineates the following: streets, lots, valves, fire hydrants, manholes and any existing facilities involved; water, sewer and recycled water certifications, general notes, legend, estimate of quantities and a location map.

   c. Plan and profile sheets shall include all proposed and existing utility lines, both plan view and elevation; existing ground surface and proposed street grade, existing and proposed water/sewer/recycled lines, with the flowline plotted in the profile, and the slope indicated between each vertical point of intersection. Water/Sewer/Recycled lines and appurtenances shall have stationing with respect to the center line street stationing.

   d. Self-adhesive or add on labels, certifications, details, etc. are not acceptable on final plans.

3. Requirements for First Plan Check.*

a. RESIDENTIAL DEVELOPMENTS

1. Executed Project Identification Form (see Attachment No. 1, Appendix L) signed and stamped by the Registered Engineer of Record

2. Water, Sewer and Recycled Water Plans
(to be approved by District)

3. Record Map

4. Street Plans

5. Storm Drain Plans

6. Grading Plans

7. Erosion Control Plans

8. Conditions of Approval of Tentative Map

9. Easement Documents and Plats

Title Report, Deeds, Etc.

Easement Boundary Closure
(to 3 decimal point (min.))

Coordinate List

Any Appropriate Survey Notes

Any Referenced PM/RS/Etc.

10. Fees Payable to Jurupa Community Services District in the Amount Established by the District

11. When a tract is to be phased, submit an overall conceptual water, sewer and recycled water layout on the tentative map. Indicate size and types of mainline pipes to be used.

12. Geotechnical Report

* Incomplete submittals will not be accepted. If any of the above items are not applicable to the project, please note the reason in the transmittal letter.

b. COMMERCIAL/INDUSTRIAL DEVELOPMENT

1. Items Listed in 3.a. Above

2. Site Plan/Plot Plan
(with water, sewer, recycled water, and fire systems shown; and provide private "on-site" certification)

3. Building Floor Plan/Plumbing Plan

4. Landscape Irrigation Plan (with backflow devices shown at all appropriate locations)

5. Completed Non-Residential Wastewater Questionnaire

6. Submittal of Data Indicating Typical Waste Discharge Constituents

7. Total Fixture Unit Calculations (water & sewer)

8. Grease Interceptor/Industrial Waste Clarifier Sizing Calculations

9. Fire Protection Plans and Fire Flow Calculations

10. Number of Employees

11. Water Usage of a Similar Type Installation

12. For Restaurants; Number of Seats, Daily Meals and/or Peak Hour Meals

4. Subsequent Plan Checks

When the initial check is complete, engineering firms will receive the plan check comments electronically. Whenever changes other than District corrections are made, these changes shall also be indicated on the check print in order to expedite the processing of the plans. Additionally, Developer shall resubmit all street plan, storm drain plan, etc., wherever revisions to these drawings occur.

5. Plan Approval

Upon approval, the original shall be submitted to the District for the signature of the General Manager or their agents.

a. When the original has been signed by all agencies involved, send complete sets in PDF format.

C. PLAN CERTIFICATIONS

The following certifications shall be placed on the first sheet of the plans as appropriate:

1. Water Certification

JURUPA COMMUNITY SERVICES DISTRICT

I certify that the design of the water system in Tract/Plot Plan/Parcel Map No. _____ is in accordance with the water system expansion plans of the Jurupa Community Services District, and that the water service, storage, and distribution system will be adequate to provide water service to such tract/plot plan/parcel map. This certification does not constitute a guarantee that it will supply water to such tract/plot plan/parcel map at any specific quantities, flows, or pressures for fire protection or any other purposes.

_____ _____

General Manager Date

CERTIFICATION VOID AFTER TWENTY-FOUR (24) MONTHS FROM ABOVE DATE.

JCSD P.N. _____

2. Sewer Certification

JURUPA COMMUNITY SERVICES DISTRICT

I certify that the design of the sewer system in Tract/Plot Plan/Parcel Map No. _____ is in accordance with the sewer system expansion plans of the Jurupa Community Services District, and that the waste disposal system is adequate at this time to treat the anticipated wastes from the proposed tract/plot plan/parcel map. This certification does not constitute a guarantee the waste disposal system can transport or treat flows that exceed the District estimated flows for the specific type of land use proposed for this development.

_____ _____

General Manager Date

CERTIFICATION VOID AFTER TWENTY-FOUR (24) MONTHS FROM ABOVE DATE.

JCSD P.N. _____

3. Recycled Water Certification

JURUPA COMMUNITY SERVICES DISTRICT

I certify that the design of the recycled water system in Tract/Plot Plan/Parcel Map No. _____ is in accordance with the recycled water system expansion plans of the Jurupa Community Services District, and that the recycled water system is adequate to provide recycled water service to such tract/plot plan/parcel map. This certification does not constitute a guarantee that it will supply recycled water to such tract/plot plan/parcel map at any specific quantities, flows, or pressures for the specific type of land use proposed for this development.

_____ _____
General Manager Date

CERTIFICATION VOID AFTER TWENTY-FOUR (24) MONTHS FROM ABOVE DATE.

JCSD P.N. _____

4. Jurupa Community Services District Development Engineering

_____ _____
Principal Engineer Date

5. Jurupa Community Services District Engineering Department
Recommended by:

_____ _____
Engineering Manager Date

6. Riverside County Fire Department
Reviewed by:

_____ _____
Date

7. City of Eastvale/Jurupa Valley (as applicable)
Reviewed by:

_____ _____
City Engineer Date

8. JCSD Department of Engineering & Water Resources
Approved by:

_____ _____
Director of Engineering & Water Resources Date

The following certification shall be placed on the first sheet of the plans for on-site water, sewer and/or recycled water plans:

1. Private Certification

The Jurupa Community Services District has reviewed the water, sewer and recycled water systems within the public right-of-way for this project, said systems are in conformance with District standards and are approved. Said approval does not include any on-site/private systems.

_____ _____
Jurupa Community Services District Date
General Manager

CERTIFICATION VOID AFTER TWENTY-FOUR (24) MONTHS FROM ABOVE DATE

JCSD P.N. _____

D. GENERAL NOTES AND REQUIREMENTS (WATER, SEWER, AND RECYCLED WATER)

1. The Contractor shall notify JCSD at least two working days prior to construction.

2. Separation requirements between water, sewer and/or recycled water lines shall conform to California State Water Resources Control Board's Division of Drinking Water requirements. The Agency's specifications that are more restrictive shall govern in all cases.

3. All construction and materials shall comply with JCSD standards and specifications. Any construction and/or materials not covered in JCSD standards shall be reviewed and considered for approval by the District prior to construction.

4. Prior to construction of the water, sewer and/or recycled water lines, the contractor shall expose the existing water, sewer and/or recycled water lines where connections will occur and verify their elevation and location.

Approval of JCSD of a proposed connection to a JCSD facility does not imply approval of the correctness of the elevation and/or location shown on the plans.

5. Contractor shall not backfill trench until the Inspector has obtained as-built stationing on all structures. It shall be the Contractor's responsibility to provide accurate “record drawings” to the District immediately after construction.

6. Approval by JCSD implies no permission other than that within the District's jurisdiction. All permits required by law shall be acquired by the applicant or their contractor. Requirements of JCSD shall take precedence over requirements of other agencies only where JCSD requirements are more stringent.

7. Contractor shall shore all trenches and conduct all construction and operations in accordance with CAL-OSHA requirements and have all encroachment and excavation permits prior to the start of work.

8. Pipe joints shall not be pulled at any angle greater than one-half the maximum angle recommended by the pipe manufacturer.

9. The proposed work shall be subordinated to any operations JCSD may conduct, and shall be coordinated with such operations as directed by JCSD.

10. A pre-job meeting shall occur prior to construction. Attendees shall include a District inspector, representative from the Operations Department, Tract Superintendent, City of Jurupa Valley / City of Eastvale representative (As Applicable), and the Contractor who will perform the work. "Cut-Sheets" shall be provided to the District prior to this meeting for its review.

11. The Contractor shall notify underground service alert (U.S.A.) and have all underground utilities marked two (2) working days prior to construction**,** per U.S.A. requirements.

12. Contractor shall furnish and install all systems in accordance with the District's Standard Specifications and Standard Drawings for water and sanitary sewer and/or recycled water facilities systems (latest revision). specifications and Standard Drawings are available from the District. Contractor shall be in possession of District's Specifications and Standard Drawings on the job site at all times.

13. All permits required by law shall be acquired by the applicant or their Contractor. Copies of the excavation and encroachment permits will be given to JCSD prior to the pre-job**.**

14. Contractor shall designate a qualified superintendent with full authority to act on behalf of the Contractor. Said superintendent shall be on the job site at all times during the construction activities and designated construction times.

15. The District's ability to provide water, sewer and/or recycled water services to this tract may depend on the developers of other tracts completing the construction of systems. The District assumes no responsibility for the construction of the systems, which are to be constructed by such developers.

16. If District systems are located on land which are private (i.e. outside public rights-of-way) legal descriptions and plats (easement documents) shall be prepared in accordance with District standards by the engineer or land surveyor of record. The easement documents shall be reviewed and approved by the District prior to final acceptance of the systems by the District.

17. Immediately upon completion of construction of the water, sewer and/or recycled water pipelines, the Developer shall hire a District approved video company to video the pipelines in the presence of a District representative. Developer shall provide the District a copy of the video via USB flash drive or digital transmittal. District or District representative shall review said video for potential construction defects prior to acceptance of the project. Payment for all such services shall be borne by the Developer. Final video submitted to the District shall be edited, if necessary, to include only accepted reaches of the pipeline.

18. Inscribe an “S”, “W” and “RW” on the face of the curb to indicate where sewer laterals, water services and recycled water services, respectively, cross the curb line.

19. Compaction tests for water, sewer and recycled water facilities systems shall be performed by a geotechnical firm and paid for by the Developer. All compaction tests shall be made in accordance with District specifications. Soils testing results shall be given to the District inspector on a daily basis. At the conclusion of the project, a final compaction report shall be given to the District. The report shall be signed and stamped by a registered geotechnical engineer and shall certify all compaction results met the most stringent Agency’s requirements.

E. GENERAL NOTES AND REQUIREMENTS (WATER)

1. The water line shall be installed by a private contractor in accordance with JCSD Standard Plans and Specifications. The Contractor shall be approved by JCSD.

2. Minimum cover over the water main shall be 48-inches, unless otherwise approved in writing by the District.

3. Wherever a water line encounters storm drain pipe or other obstruction, the waterline shall cross with enough vertical clearances to satisfy the State Board's Division of Drinking Water requirements and Riverside County Environmental Health Department requirements.

4. Meter boxes shall be field located to clear driveways and by a minimum of 2' shall be located to avoid drainage swales. The Contractor shall adjust meter boxes to sidewalk grade when sidewalks are poured.

5. All steel pipe outlets shall be reinforced in accordance with JCSD Standard Drawing No. C-6 and/or D-6.

6. Where simulated weld bells are used for lap-welded fittings, the bell plate thickness shall be 1/4".

7. The Contractor shall install suitable thrust blocks at every vertical and/or horizontal change of direction in accordance with JCSD Standard No. C-1 or C-2, whether or not specifically called for or shown on the Plan. Upon approval by District, Contractor shall utilize fully welded joints (in lieu of thrust blocks) per JCSD Standard No. C-2A. Thrust restraint for PVC and DIP pipe shall be accomplished with the use of fully restrained joints per Standard No. C-2B, for the entire pipeline, fittings, tees, bend, etc. all joints shall be fully restrained. Suitable thrust blocks in accordance with JCSD Standard No. C-1 and C-2 shall only be used upon prior written approval by the District.

8. All materials, testing and inspection of pipe shall be in conformity with the requirements of Riverside County, and the American Water Works Association (AWWA) Standards.

9. Failure to meet any of the requirements of JCSD, Riverside County, City of Eastvale / Jurupa Valley (As Applicable) and the AWWA Specifications will be cause for rejection.

10. Pipe shall be handled so as to protect pipe joints, lining and coating, and carefully bedded to provide continuous bearing and prevent settlement. Pipe shall be protected against flotation at all times. Open ends shall be sealed at all times when construction is in progress.

11. All welded steel pipe used shall be cement mortar lined and coated, 10 gauge (minimum), unless noted otherwise.

12. All steel bends and fitting shall be cement mortar lined and coated and shall be shop fabricated per AWWA C208-(latest edition) (Modified per District specifications). Contractor shall submit fabrication drawings (from a District approved fabricator) for all AWWA shop fabricated fittings to the District for approval prior to construction. Service connections (2" and smaller) made to existing ACP, DIP, or PVC pipelines shall utilize bronze service saddles with double stainless steel straps.

13. Buildings located on pads with elevations of ____' and below will require pressure regulators per the UPC.

14. For hydrostatic testing purposes, all water pipes shall be considered Pressure Class _____.

15. All appurtenances (i.e. AV, BO, FH, services, etc.) that require relocation shall be reconstructed in accordance with current District standards. Each appurtenance to be relocated shall be evaluated in the field on a case by case basis and reconstructed as directed by the District. However, unless otherwise approved by the District, relocated appurtenances shall be reconstructed from the main to the proposed location.

16. All appurtenances (i.e. AV, BO, FH, services, etc.) That need to be abandoned shall be removed up to and including the valve and valve can at the mainline connection. The mainline outlet shall be blind flanged upon removal of the valve. In case of services, the corporation stop shall be removed, and the coupling plugged.

17. Locator wire shall be installed over all PVC waterlines, non-ferrous services and pipelines. Locator wire shall be 14-1 solid insulated copper wire (UF), in a continuous strand, placed on top of pipe and secured with tape. Locator wire shall be brought to the surface at all appurtenances (i.e. fire hydrants, water services, air valves, blowoffs, etc.), thus providing continuous "looping" between the appurtenances and the water main. All splices to locator wire shall be made with direct bury connectors.

F. SPECIAL NOTES (WATER)

The following notes are only to be used with commercial and/or industrial developments.

1. The following fire flow test information was obtained.

   A. A computer hydraulic analysis/field test dated _____ indicated the water system is capable of supplying _____ GPM at ____ PSI residual pressure *(insert location)*_____.

B. Minimum required fire flow @ 20 p.s.i. residual = ___ G.P.M. per Riverside County Fire Department.

2. The exact usage of the proposed buildings is not known at this time. Therefore, although not shown on the drawings, backflow devices will be required on all of the buildings on customer side of meter.

3. The blind services for future buildings are shown schematically and may vary during construction. Final location shall be approved by the District prior to construction. All blind services shall be locked off.

4. The water service lateral to each parcel as depicted by these plans may or may not be sufficient to meet fire flow requirements depending upon the type, size, or use of the improvement(s) constructed thereon. An additional or larger water service lateral may have to be installed at the time the actual fire flow requirements of the improvement(s) on a parcel are known.

5. Water laterals crossing existing curb and gutter shall be back filled with a 1 sack cement, sand slurry backfill.

G. GENERAL NOTES AND REQUIREMENTS (SEWER)

1. The sewer line shall be installed by a private contractor in accordance with JCSD Standards, Plans and Specifications. The contractor shall be approved by JCSD.

2. Type of sewer pipe unless otherwise approved, shall be PVC plastic pipe, SDR 35 minimum wall thickness per Section 207-17 of Standard Specifications for Public Works Construction, latest edition.

3. All work and materials shall conform to requirements of the Riverside County Transportation Department Specifications for the Improvements of Subdivision Streets, County Ordinance No. 461, and subsequent amendments.

4. Grading over sewer mains shall be done in such a manner as to prevent the ponding of water.

5. The top of all manholes located in pavement shall be raised to pavement grade (within 5 working days) after streets are paved and/or capped.

6. House connections, wyes, and laterals shall be located in the field at the direction of the subdivider.

7. The minimum class bedding for PVC sewer shall be Class "I" in accordance with JCSD Std. Dwg. No. S-2.

8. Sewer Contractor shall successfully perform two air tests at no additional cost to the District. The first air test shall be completed immediately after installation, backfill and compaction of the sewage system. The second air test shall be conducted after installation of all the other utilities and prior to paving of the streets.

9. Sewer laterals crossing existing curb and gutter shall be backfilled with a 1 sack cement, sand slurry backfill.

10. Connections to existing pipelines shall only be made with District inspector present. Test plugs shall only be removed upon direction of the District or District's representative.

11. Should modification and/or reconstruction (including raising manholes to grade) of an existing manhole be required, prior to the removal of the frame of the sewer manhole, the channel of the manhole shall be completely covered with planking or other suitable material so as to prevent debris from entering the channel. After the manhole reconstruction has been completed, all debris shall be removed from within the manhole and the cover over the channel shall be removed.

12. Depth of grading rings after modification and/or reconstruction (including raising manholes to grade) of an existing manhole shall be per JCSD Std. Dwg. No. S-7.

13. All manholes that are installed or modified shall be vacuum tested per JCSD Std. Dwg. No. S-7.

14. Sewer plug(s) shall be installed prior to commencement of sewer construction and shall be inspected on a weekly basis to ensure that sewer plugs are in place. In addition, the location of the sewer plug(s) shall be identified on the plans.

15. All unused service laterals shall be cut 2-ft. from the sewer main and plugged with a bulkhead.

H. GENERAL NOTES AND REQUIREMENTS (RECYCLED WATER)

1. The recycled water line shall be installed by a private contractor in accordance with JCSD Standard Plans and Specifications. The Contractor shall be approved by JCSD

2. Minimum cover over the recycled water main shall be 60-inches, unless otherwise approved in writing by the District.

3. Meter boxes shall be field located to clear driveways and by a minimum of 2' shall be located to avoid drainage swales. The Contractor shall adjust meter boxes to sidewalk grade when sidewalks are poured.

4. All steel pipe outlets shall be reinforced in accordance with JCSD Standard Drawing No. C-6 and/or D-6.

5. Where simulated weld bells are used for lap-welded fittings, the bell plate thickness shall be 1/4".

6. The Contractor shall install suitable thrust blocks at every vertical and/or horizontal change of direction in accordance with JCSD Standard No. C-1 or C-2, whether or not specifically called for or shown on the Plan. Upon approval by District, Contractor shall utilize fully welded joints (in lieu of thrust blocks) per JCSD Standard No. C-2A. Thrust restraint for PVC and DIP pipe shall be accomplished with the use of fully restrained joints per Standard No. C-2B, for the entire pipeline, fittings, tees, bend, etc. all joints shall be fully restrained. Suitable thrust blocks in accordance with JCSD Standard No. C-1 and C-2 shall only be used upon prior written approval by the District.

7. Type of recycled water pipe unless otherwise approved, shall be PVC C-909 plastic pipe, Class 235 minimum wall thickness painted purple, marked as required by the District's standards. All recycled water above grade facilities shall be painted purple. All materials, testing and inspection of pipe shall be in conformity with the requirements of Riverside County, and the American Water Works Association (AWWA) Standards.

8. Failure to meet any of the requirements of JCSD, Riverside County, City of Eastvale / Jurupa Valley (As Applicable) and the AWWA Specifications will be cause for rejection.

9. Pipe shall be handled so as to protect pipe joints, lining and coating, and carefully bedded to provide continuous bearing and prevent settlement. Pipe shall be protected against flotation at all times. Open ends shall be sealed at all times when construction is in progress.

10. All welded steel pipe used shall be cement mortar lined and coated, 10 gauge (minimum), unless noted otherwise.

11. All steel bends and fitting shall be cement mortar lined and coated and shall be shop fabricated per AWWA C208-(latest edition) (Modified per District specifications). Contractor shall submit fabrication drawings (from a District approved fabricator) for all AWWA shop fabricated fittings to the District for approval prior to construction. Service connections (2" and smaller) made to existing ACP, DIP, or PVC pipelines shall utilize bronze service saddles with double stainless steel straps.

12. For hydrostatic testing purposes, all water pipes shall be considered Pressure Class 235.

13. All appurtenances (i.e., AV, BO services, etc.) that require relocation shall be reconstructed in accordance with current District standards. All above grade appurtenances shall be painted purple. Each appurtenance to be relocated shall be evaluated in the field on a case by case basis and reconstructed as directed by the District. However, unless otherwise approved by the District, relocated appurtenances shall be reconstructed from the main to the proposed location.

14. All appurtenances (i.e., AV, BO services, etc.) That need to be abandoned shall be removed up to and including the valve and valve can at the mainline connection. The mainline outlet shall be blind flanged upon removal of the valve. In case of services, the corporation stop shall be removed, and the coupling plugged.

15. Locator wire shall be installed over all PVC recycled water lines, non-ferrous services and pipelines. Locator wire shall be 14-1 solid insulated copper wire (UF), in a continuous strand, placed on top of pipe and secured with tape. Locator wire shall be brought to the surface at all appurtenances (i.e., fire hydrants, water services, air valves, blowoffs, etc.), thus providing continuous “looping” between the appurtenances and the water main. All splices to locator wire shall be made with direct bury connectors.

I. IMPROVEMENT PLAN CHECK LIST

The following is a list of District requirements regarding water, sewer and recycled water improvement plan preparation. The Developer’s Engineer should review this list prior to each plan check submittal to ensure conformance with the District’s requirements.

The District's review of Plans and Engineering data will cover only general conformity of the design with the Standards and Specifications outlined herein. The District's approval of Plans and Engineering data will not constitute a blanket approval of all dimensions,

quantities, physical properties, materials, equipment, devices, or items shown, and does not relieve the Developer's Engineer from any responsibility for errors, deviations, or defects in design therefor.

General

1. Project identification form (Attachment No. 1, Appendix L) must be completed, signed and stamped by the California Registered Engineer of Record for every plan submittal.

2. All sheets must be 24" x 36" and have the District's standard title block. Scale is 1" = 40' horizontal and 1" = 4' vertical.

3. The first sheet of the improvement plan set is an index sheet that includes an overall layout of the water/sewer/recycled water system at a scale that clearly delineates the following: streets, lots, valves, fire hydrants, manholes and any existing facilities involved. Additionally, the first sheet must include water, sewer and recycled water certifications, general notes, legend, estimate of quantities and a location map.

4. Plan and profile sheets must show all proposed and existing utility lines, both plan view and elevation; existing ground surface (if facilities are to be constructed prior to mass grading) and proposed street grade, existing and proposed water/sewer/recycled water lines, with the flowline plotted in the profile, and the slope indicated between each vertical point of intersection. Water/Sewer/Recycled water lines and appurtenances shall have stationing with respect to the center line street stationing. Label all pipeline centerlines with bearings and distances.

5. Self-adhesive or add on labels, certifications, details, etc. are not acceptable on final plans (mylars).

6. Construction notes with reference to District standards shall be provided on each individual plan sheet

7. Plans must be in conformance with all District standards and specifications.

8. Proposed improvements must conform to State and County health separation requirements (horizontal and vertical). In case of conflict, the most stringent requirement shall prevail.

9. Show services and laterals to each lot.

10. Check that minimum cover is achieved for all pipelines (plot existing & proposed ground profiles where necessary).

11. Check to make sure quantity estimates are correct.

12. Each construction note should reference a JCSD Standard.

13. Prior to District approval, a California Registered Civil Engineer's signature and stamp is required.

14. Check master plans for proper pipeline sizing

15. Easements need to be shown on the Improvement Plans and on the Final Map. Additionally, submittal of a separate easement document (description and plat) conforming to District format is required.

16. North arrow orientation shall be to the upper half of the plan sheet; and stationing shall increase left to right across the plan street.

17. Topography with contours shall be provided by field survey or aerial photography in areas where pipelines are to be constructed in existing conditions (i.e., no proposed grading).

18. Provide USA notification note on each sheet.

19. Use private on-site certification wording for private water, sewer and recycled water systems.

20. Plot the locations (horizontal and vertical) of all existing utilities and agency facilities.

21. Check the effects of proposed cuts/fills over existing pipelines. Provide profile over existing pipeline where requested by District.

22. Make sure curve radii are acceptable (allowable joint pulls).

23. Check centerline lengths from record maps.

24. Vertical curves for the pipelines are not allowed.

25. Provide support for existing utilities where waterlines, sewerlines and/or recycled waterlines cross below.

26. Check grading, street, storm drain, and erosion control plans for possible affects to District facilities.

27. Check environmental clearances.

28. Review soils report.

29. Provide profiles of "stubbed" mainlines.

30. Provide definitive match lines between sheets.

31. Field check site

32. Identify “Master Planned” improvements on plans.

33. Fully-restrain PVC/Steel transition couplings

34. For proposed tract service laterals, show tables below if applicable:

Sewer Lateral Table

Lot/Building	Design Station	As-Built Station	Backwater Device Required?
1		Leave Blank	Yes or No
2			
3			
4			

Water Lateral Table

Lot/Building	Design Station	As-Built Station	Pressure Regulator Required?
1		Leave Blank	Yes or No
2			
3			
4			

Water Plan Review Checklist

1. The pressure class of pipe and appurtenances must be checked based upon the appropriate pressure zone including additional pumping head affects (if applicable).

   A. Steel Pipe $t = \frac{P(O.D.)}{2\,(16{,}500)}$ (Equation for steel pipe: refer to Section V.B.2 for minimums)

   B. PVC C909 Pipe

      Use CL 235 and CL 305 as required. In the Eastvale area, use CL 305 for all projects south of Cloverdale Road/Limonite Avenue.

2. High points must have air/vacuum release valves and low points must have blowoffs (blowoffs are also required for 8" diameter lines). These appurtenances should be located on branch runs perpendicular to the mainline. These appurtenances should be located on the “short side” of the street and located along lot line projections.

3. Lots should not have less than 50 psi pressure at high water level (HWL). Lots having more than 80 psi require pressure regulators.

4. Maximum fire hydrant spacing is 330'± unless otherwise approved by Fire Department. Fire hydrants should be constructed on the "short side" of street and located along lot line projections. Verify hydrants are located at each intersection and on both sides of the street for those classified as secondary highways or larger. Locate on BCR’s, ECR’s or lot lines.

5. Valving should be positioned so that when a mainline segment is isolated, no more than 1300′± of line is drained.

6. Make sure there is a way to drain the line once isolated.

7. For pipelines less than or equal to 12" Dia., use resilient seat gate valves.

8. For pipelines greater than 12" Dia., use butterfly valves.

9. Use fully welded steel (CML/CMC Std. Wt.) pipe in easements.

10. In general, waterlines should be located per County of Riverside Standards.

11. Stationing should be provided on all fire hydrants, air valves, and blow offs on both the plan and profile.

12. Provide profiles of pipelines 8" in diameter and larger branch lines where they must cross storm drains or other large facilities.

13. Check street improvement plans and existing water as-builts where existing waterlines occur for relocation and/or abandonment of mainline, FH, AV, BO, etc. and raising and/or lowering of valve cans. Make sure there is a construction note on the water plans to identify this work.

14. Check to make sure system is set-up for future extensions (i.e., proper locations, clear proposed pavement, clear existing utilities, etc.).

15. Check pipe for proper pipe bedding standards.

16. Unless otherwise approved by the District, connections to existing mains shall be accomplished by installations of tees with mainline and side outlet valves.

17. Locate vaults outside public R-O-W in an easement dedicated to the District in areas where conflict may occur with dry utility conduit, other vaults, etc. Further, location shall not occur in pedestrian walkways.

18. For commercial/industrial projects, use two (2) water meters per lot (1-domestic, 1-irrigation).

19. Check sizing of backflow facilities (maximum flow vs meter capacity).

20. Review potential for waterline looping. Large tracts require a minimum of two (2) "supply" pipelines.

21. Provide an air valve and blowoff on each side of mainline valves that are 16" in diameter and larger.

22. On short cul-de-sacs, run pipeline grade down to eliminate need for an air valve.

23. Review soils report to determine if corrosion protection provisions are required.

24. Use fully welded standard weight CML/CMC welded steel pipe for all siphons.

25. Make sure the fire flow requirements have been established, and the water system is capable of providing the required flow.

26. Make sure the water system is set up for future extensions.

27. Review the need for special construction and/or connection details.

28. Make sure no unnecessary siphons are being used.

29. Where siphons are used, the necessary appurtenances (i.e. B.O., A.V.) should be provided.

30. Proper separations must be maintained where service laterals, detector check lines, fire hydrant lines, etc. cross other utilities.

31. Make sure the grade breaks conform with standard fitting and joint pull parameters.

32. Make sure thrust blocks have been properly sized and they do not conflict with adjacent utilities.

33. Show fully-welded CML/CMC steel pipe and fully-restrained joints limits on PVC and ductile iron pipe by dimensions and stations in profile view and appropriate design locations.

34. Make sure pipeline cover meets minimum requirement and is not excessive (plot existing and proposed profiles where necessary).

35. Plot all existing facilities/appurtenances (i.e. valves, FH, BO, AV, serv., sewer laterals, etc.).

36. Verify the location of existing utilities.

37. Meter and service shown in std. dwg. D-1B shall be used for residential developments.

38. Verify Fire Flow Test Information, including static pressure shown on test.

Sewer Checking Criteria

1. Make sure each lot can be served by gravity flow.

2. Check cover (7.0' minimum to top of pipe) unless otherwise approved by the District.

3. In general, sewer lines should be located per County of Riverside Standards.

4. Stationing should be provided on all manholes.

5. Maximum manhole spacing is 350'; unless otherwise approved.

6. Manholes should be located near all BC's, EC's and PCC's. Manholes are mandatory at PRC's.

7. Make sure line is deep enough to serve adjacent properties by gravity flow (3' drop out of building + (length from building to main x 2%) + 1' drop for wye).

8. Verify proper lateral size (4" diameter for single family residential, 6" diameter minimum for all other uses).

9. Manhole Fall: 0.1' on all bends 45° or greater; run "in-line" grades through manholes for grades of at least 2.5% (provide 0.1' fall on grades less than 2.5%).

10. Provide crossing elevations on plans for service laterals where they must cross storm drain facilities.

11. Whenever possible, in commercial and industrial areas, sewer laterals shall connect directly into a manhole.

12. Plot parallel storm drain profiles (dash) and make sure sewer laterals do not conflict.

13. Check street improvement plans where existing sewer lines occur for sewer lateral additions, relocations, manhole adjustments to grade, etc.

14. Check effects of proposed cuts/fills over existing pipelines.

15. Check to make sure sewer system is set-up for future extensions and tributary drainage areas.

16. Check the effects of additional flow on downstream facilities.

17. Check manhole rim elevations from street plans.

18. For commercial and industrial developments, establish a flowline elevation of the lateral at property line.

19. Check for industrial waste provisions (i.e. at a minimum use a building sewer sampler) for all commercial and industrial projects.

20. Use as steep a slope as possible where the number of tributary dwelling units may not achieve 2 fps velocity in the pipe.

21. Check for potential lateral conflicts with other facilities. Plot unusual or critical crossings in profile.

22. Check bedding for sewer pipe depth per district standards. Prepare pipe loading calculations where required.

23. Encase the sewer for load carrying capability when top of sewer is within 3 feet of surface of street. (Ductile iron pipe as alternative).

24. Check pipeline alignment for future extensions, both vertically and horizontally.

25. Where pipe slope is at minimum, conduct a field survey to verify the location and elevation of point of connection.

26. Check the on-site sewer system for the need of any required industrial waste clarifier, grease interceptor, or oil/sand separator.

27. Check to make sure the proposed and/or existing sewer has proper cover.

28. Curved sewers must meet the District's/manufacturer's requirements (minimum radius or maximum joint pull).

29. Backwater valves should be provided where required per Section 409 of the Uniform Plumbing Code.

30. Check that the design pipe slope (i.e. along pipe centerline) is based upon actual sewer main length and is greater than minimum.

31. When sewer is located in an easement, the manholes must be readily accessible by maintenance trucks. Bolt-down manhole covers are required when manholes occur on private property.

32. A detail or construction note should be provided for manholes the bottom of which need to be re-contoured for flow when sewer line joins existing manhole.

33. Sewer lines should be stubbed for future extension where required.

34. Manholes must be provided on the mainline where sewer laterals are 8" in diameter and larger.

35. Soffits must be matched where sewer mains of different diameters connect.

36. Rim elevations should be shown to the nearest 0.1' at all structures.

37. Make sure the street profile agrees with street plans and any revisions thereto.

38. Where possible, a minimum slope of 1% should be used on cul-de-sacs.

39. On proposed and existing sewer lines, show arrows delineating sewer flow direction.

40. For deep sewer laterals, JCSD standard drawings S-6A shall be called out on plans.

41. In areas where a proposed sewer will run parallel to a storm drain facility, show table that shows vertical separation between storm drain and sewer laterals.

42. Ensure that proposed monitoring manholes at placed at the R/W line. Monitoring manholes are required if development will be tributary to Inland Empire Brine Line.

43. Sewer laterals shall be proposed using PVC pipe.

Recycled Water Plan Review Checklist

1. The pressure class of pipe and appurtenances must be checked based upon the appropriate pressure zone including additional pumping head affects (if applicable).

   A. Steel Pipe $t = \frac{P(O.D.)}{2\,(16{,}500)}$ (Equation for steel pipe: refer to Section V.B.2 for minimums)

   B. PVC C909 Pipe

      Use CL 235 and CL 305 as required. In the Eastvale area, use CL 305 for all projects south of Cloverdale Road/Limonite Avenue.

2. High points must have air/vacuum release valves and low points must have blowoffs (blowoffs are also required for 8" diameter lines). These appurtenances should be located on branch runs perpendicular to the mainline. These appurtenances should be located on the "short side" of the street and located along lot line projections.

3. Service areas having more than 80 psi require pressure regulators.

4. Valving should be positioned so that when a mainline segment is isolated, no more than 1300′± of line is drained.

5. Make sure there is a way to drain the line once isolated.

6. For pipelines less than or equal to 12" Dia., use resilient seat gate valves.

7. For pipelines greater than 12" Dia., use butterfly valves.

8. Use fully welded steel (CML/CMC Std. Wt.) pipe in easements.

9. In general, waterlines should be located per County of Riverside Standards.

10. Stationing should be provided on all fire hydrants, air valves, and blow offs on both the plan and profile.

11. Provide profiles of pipelines 8" in diameter and larger branch lines where they must cross storm drains or other large facilities.

12. Check street improvement plans and existing recycled water as-builts where existing recycled waterlines occur for relocation and/or abandonment of mainline, FH, AV, BO, etc. and raising and/or lowering of valve cans. Make sure there is a construction note on the recycled water plans to identify this work.

13. Check to make sure system is set-up for future extensions (i.e., proper locations, clear proposed pavement, clear existing utilities, etc.).

14. Check pipe for proper pipe bedding standards.

15. Unless otherwise approved by the District, connections to existing mains shall be accomplished by installations of tees with mainline and side outlet valves.

16. Locate vaults outside public R-O-W in an easement dedicated to the District in areas where conflict may occur with dry utility conduit, other vaults, etc. Further, location shall not occur in pedestrian walkways.

17. For commercial/industrial projects, use two (2) water meters per lot (1-domestic, 1-irrigation).

18. Check sizing of backflow facilities (maximum flow vs meter capacity).

19. Provide an air valve and blowoff on each side of mainline valves that are 16" in diameter and larger.

20. On short cul-de-sacs, run pipeline grade down to eliminate need for an air valve.

21. Review soils report to determine if corrosion protection provisions are required.

22. Use fully welded standard weight CML/CMC welded steel pipe for all siphons.

23. Make sure the recycled water system is set up for future extensions.

24. Review the need for special construction and/or connection details.

25. Make sure no unnecessary siphons are being used.

26. Where siphons are used, the necessary appurtenances (i.e., B.O., A.V.) should be provided.

27. Proper separations must be maintained where service laterals, etc. cross other utilities.

28. Make sure the grade breaks conform with standard fitting and joint pull parameters.

29. Make sure thrust blocks have been properly sized and they do not conflict with adjacent utilities.

30. Show fully-welded CML/CMC steel pipe and fully-restrained joints limits on PVC and ductile iron pipe by dimensions and stations in profile view and appropriate design locations.

31. Make sure pipeline cover meets minimum requirement and is not excessive (plot existing and proposed profiles where necessary).

32. Plot all existing facilities/appurtenances (i.e., valves, FH, BO, AV, serv., sewer laterals, etc.).

33. Verify the location of existing utilities.

34. Provide recycled water warning signs posted in areas that the public has access to that are no less than 8.5 inches high and 11 inches wide per District Standard Drawing No. R/NP-17.

J. ABBREVIATIONS

Aband	Abandon
Ah.	Ahead Station
ANSI	American National Standards Institute
ASTM	American Society for Testing Materials
A.V.	Air Valve
AWWA	American Water Works Association
B.C.	Begin Curve
BFV	Butterfly Valve
Bk.	Back Station
Bld Flg	Blind Flange
B.O.	Blow Off
Bot	Bottom
CAL-OSHA	California Occupational Safety and Health Administration
CTS	Cathodic Test Station

C.O.	Clean Out
CML/CMC	Cement Mortar Lined/Cement Mortar Coated
CPLG	Coupling
DIP	Ductile Iron Pipe
DOSH	Division of Occupational Safety and Health
E.C.	End Curve
Elec.	Electrical
Esmt.	Easement
Ex.	Exist
FH	Fire Hydrant
Flg.	Flange or Flanged
FL	Flowline
G	Gas line or service
gpm	Gallons per minute
GV	Gate Valve
HPI	Horizontal Point of Intersection
IPS	Iron Pipe Size
JCSD	Jurupa Community Services District
MH	Manhole
P.C.C.	Point of Compound Curve
P.R.C.	Point of Reverse Curve
P.E.	Polyethylene
PVC	Polyvinyl Chloride
RED	Reducer
RJ	Restrained Joint
RW	Recycled Waterline
R/NP	Recycled/Non-Potable
S	Sewer main or house lateral
SD	Storm Drain
St. Lt.	Street Light
T	Telephone cable or conduit
U.G.	Underground
VCP	Vitrified Clay Pipe

VPI	Vertical Point of Intersection
W	Water main or service
WSP	Welded Steel Pipe

K. SYMBOLS

Refer to District Standard Drawing No. AA-1.

L. GUIDE FOR EASEMENT DRAWINGS

Maps for easements over private lands should contain sufficient information to reflect every call-out as it is recited in the description.

1. Required Information

   a. North Arrow (orientation to upper half of plat)
   b. Scale
   c. Tract Numbers
   d. Lot Numbers
   e. Lot lines
   f. Ownership Lines
   g. Section Corner or Rancho Corner Data
   h. Street R/W and Street Names
   i. Section, Township & Range and Base & Meridian Data or Rancho Data
   j. Call out of Easement
   k. Parcel Numbers
   l. Dimensions
   m. Title Block
   n. Drawing Number
   o. Signature of General Manager

2. Additional Information When Bearings are Used

   a. Basis of Bearings
   b. T.P.O.B. (True Point of Beginning)
   c. Bearing and Distances

d. Curve Data

e. Designated Point

f. Existing Easement Data

3. Right-of-Way Width Requirements for Easements are as follows: The minimum required width for all easements shall be 20 feet. Wherever sewer and water pipelines are to be installed in the same easement, the minimum required width shall be 30 feet. Generally, all pipelines shall be installed at the centerline of the easement. When approved by the District, pipeline may be installed no less than 5 feet from either easement boundary.

4. Tract Maps

a. Construction prior to Tract Map recordation will require acquisition of rights-of-way description. The description shall be originated by the tract engineer.

b. Public Utility easements are not acceptable.

5. Areas Not Included in Tracts

Rights-of-way acquisition shall be completed prior to construction, and prior to Tract recordation where associated with Tract development.

6. Easements Within Subdivisions

a. Public Streets - no separate easements are required.

b. Private Streets or Easements across Private Lands - Easements shall be acquired by separate instrument.

7. District Acceptance of Easements

All easements offered to the District for acceptance shall be formally acknowledged by a "Certificate of Acceptance" as shown in Appendix C.

M. ESTABLISHMENT OF LINE AND GRADE

The line and grade of the improvements shall be per the District approved drawings. Survey control ("staking") shall be necessary for all sewerline improvements and "cut sheets" shall be submitted to the District prior to preconstruction conference.

Survey control ("staking") shall be necessary for all waterline improvements: (1) where curb and gutter does not exist prior to construction of the waterline; (2) where the proposed

waterline does not follow curb grade; (3) where the District requires additional control to occur.

N. CONTRACTOR'S DATA SHEET

Owners, Developers and Developers' Engineers are advised that any contractors who intend to construct facilities for the District submit to the District a Contractor's data sheet before they may engage in construction. The data sheet must be submitted at least 10 working days prior to bidding on a project. A Contractor's data sheet is included for reference in Appendix E of Section VIII.

O. CONSTRUCTION AGREEMENT

A Water/Sewer/Recycled Water Construction Agreement must also be signed by Developer, Contractor, and District representative prior to the pre-construction meeting. A blank agreement form is included for reference in Appendix D of Section VIII.

P. APPROVED MANUFACTURED MATERIALS

A list of District approved manufactured materials is provided in Appendix J of Section VIII.