

DRAFT

SECTION II

**PLAN FORMAT AND REQUIREMENTS
WATER AND SEWER**

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The Developer's engineer shall prepare system improvement plans that are clear, concise, and meet District standards.

A. SHEET FORMAT – GENERAL

Drawings shall be drawn in ink on D size mylar (4 mil double matted) sheets (24" x 36") with the District's standard title blocks. Contact the District's Engineering Department for an electronic file of the standard title blocks.

The improvement plans shall be professional quality especially prepared as WATER DRAWINGS, RECYCLED WATER DRAWINGS, OR SEWER DRAWINGS. Work shall be of standard engineering practice and shall be well arranged, neat, legible, and present the proposed construction without confusion. Applicable blue prints submitted for checking shall also be clear, bright duplications. Water, recycled water, and sewer design shall be shown on separate drawings. Drawings shall show both plan and profile of the facilities. The profile shall be shown on gridline background and shown vertically above the plan. The gridline shall be screened and be on the layer behind the pipeline profile.

All drawings shall be drawn to scale using 1"=40' on the horizontal scale, and 1"=4' (preferred) or 1"=8' on the vertical scale. Scale bars shall be provided. Match lines and continuations from sheet to sheet shall be used and identified with applicable station points and cross-reference. True north shall be shown with a suitable north arrow. Tract number and sheet number shall be indicated on all drawings. Each sheet shall have a title block with tract number, street name, and stations appearing on that sheet. Stationing on all sheets shall be from left to right (even if this requires north to be "down").

For special assemblies and unusual and/or complex connections, a detail schematic shall be provided (preferably on the same sheet). The detail schematic shall be drawn to scale and shall fully identify all the items in the detail.

B. COVER SHEET

As a minimum, the cover sheet shall show the following:

1. General Notes (See notes at the back of this section for Water Drawings and Sewer Drawings).
2. Legend with Standard Symbols (YVWD Std Dwg. Nos. S-1 and W-1).
3. Numbered Construction Notes with Estimate of Quantities.
4. Index of Drawings.
5. Vicinity and Location Map.
 - a. North Arrow.
 - b. Street Names.
6. Index Map (See below).
7. Fire Marshal Signature Block (Water plans only).
8. YVWD Signature Block for Approval.

C. INDEX MAP

As a minimum, the index map shall show the following:

1. Scale (1"=100', 1"=200', or 1"=400').
2. North Arrow.
3. The entire land division showing the proposed tract layout with street names and lot numbers. The last lot number shall be circled.
4. For water pipeline construction drawings, the following shall be shown under label of Index Map:
Pressure Zone _____
Highest Pad Elevation _____
Lowest Pad Elevation _____
5. Proposed Water Pipelines Identified by Diameter and Materials (water plans only).
6. Proposed Sewers Identified by Diameter and Materials (sewer plans only).
7. Proposed Water Pipeline Appurtenances (water plans only).
 - a. Fire Hydrants.
 - b. Blowoffs.

- c. Valves.
- d. Water Services.
- 8. Proposed Sewer Appurtenances (sewer plans only).
 - a. Manholes.
 - b. Sewer Laterals.
 - c. Backwater Valves
- 9. Sheet Numbers Corresponding to Plan and Profile Sheets.

The use of a second sheet in order to include all required information in a clear and easy to read manner is permissible.

D. PLAN AND PROFILE FORMAT

The plan and profile sheets shall be drawn at a horizontal scale of 1"=40' and a vertical scale of 1"=4'. A vertical scale of 1"=8' is permissible if approved by the District prior to preparation of the construction drawings. As a minimum, the drawings shall show the following:

1. Plan Format Requirements

a. Title Block

The title block shall include tract number, street name, and stations.

b. North Arrow

The North Arrow shall point up or to the left if possible to conform with stationing (see Item k).

c. Street Names

All street names shall be shown.

d. Lot Lines

All lot lines and parcel lines shall be shown. All lots shall be numbered or labeled. All adjacent tracts shall be identified.

e. Right-of-Way

Existing and proposed right-of-way shall be identified with dimensions for same shown.

f. Curbs

Existing and/or proposed curbs shall be identified with dimensions from street centerline shown.

g. Easements

Existing or proposed easements shall be identified with dimensions for same shown.

h. Utilities

All existing and proposed utilities shall be shown including, but not limited to, water, sewer, gas, power, telephone, storm drain, irrigation, traffic, and cable television. Each utility shall be identified with a symbol, and the size of the utility shall be shown.

i. Existing and Proposed Improvements

All existing surface improvements shall be shown including, but not limited to, curb and gutter, edge of pavement, power poles, driveways, sidewalks, and fences.

j. Proposed Pipeline

Proposed pipeline shall be indicated with a heavy line. For water pipelines, dimensions from street centerline to centerline of water pipeline and from centerline of water pipeline to existing or proposed curb shall be shown. For sewers, dimensions from street centerline to centerline of sewer shall be shown.

k. Stationing

For water pipelines, stationing along the centerline of the improvement or the centerline of the street is acceptable. For sewers, stationing shall be along the centerline of the sewers. Unless otherwise specified, stationing shall increase from left to right. Stationing shall be identified with tick marks at 50 foot intervals and labeled at 100 foot intervals. For water pipelines and/or sewers with curves, stations for the beginning and end of each curve shall be shown. In addition, a curve data table shall be included showing the delta, curve radius, curve length, and tangent length for each curve.

l. Match Lines

Match lines for each end of the sheet shall be shown as follows:

STA 15+00.00 MATCH LINE
SEE SHEET 5

m. Water Pipelines

Water pipelines and appurtenances (valves, fittings, fire hydrants, air valves, water services, and blowoffs) shall be identified by numerical identification and construction notes with the following sample format:

- ① 8 Inch D.I.P. (Class 350) Water Pipeline per YVWD Std. Dwg. Nos. W-4 and W-30.
- ② 1 Inch Domestic Water Service per YVWD Std. Dwg. No. W-5.
- ③ 4 Inch Blowoff Assembly per YVWD Std. Dwg. No. W-12.

All water pipeline appurtenances, including valves, tees, crosses, elbows, plugs, fire hydrants, air valves, water services, and blowoffs shall be identified by station and a numerical identification.

Only those construction notes that apply to each sheet shall be shown.

All connections to existing water system shall be identified by station and size. Details for connections shall be used where required. Each connection shall have the following note, "Connection by District. Contractor shall expose pipe and provide shoring and trench safety for District Crews."

n. Sewers

Sewers and appurtenances (sewer laterals, manholes, and backwater valves) shall be identified by numerical identification and construction notes with the following sample format:

- ① 8 Inch VCP Sewer per YVWD Std. Dwg. Nos. S-13.
- ② 48 Inch Dia. Sewer Manhole per YVWD Std. Dwg. No. S-3.
- ③ 4 Inch Sewer Lateral per YVWD Std. Dwg. Nos. S-14 and S-18.

All sewer appurtenances shall be identified by station and a numerical identification.

Only those construction notes that apply to each sheet shall be shown.

All connections to existing sewer system shall be identified by station and size. Details for connections shall be used where required. Each connection shall have the following note, "Connection by District. Contractor shall expose pipe and provide shoring and trench safety for District Crews."

o. Sewer Laterals

Sewer laterals shall be located under driveways whenever possible. If the lot and street elevations do not allow laterals to be constructed under driveways, cut-off-walls shall be constructed over sewer laterals in accordance with YVWD Std. Dwg. No. S-18.

2. Profile Format Requirements

Profiles for water and sewer shall be shown. Other utility profiles that could be in conflict with water appurtenances or sewer laterals shall be shown screened (e.g. storm drain).

a. Stationing

Stations shall be shown along bottom of profile at 100 foot intervals. Profile stationing shall line up with plan stationing as closely as possible. Stations shall increase from left to right across the sheet.

b. Elevations

Elevations shall be shown at even gridlines on both ends of the profile sheet and at vertical breaks along the pipeline.

c. Existing and Proposed Ground Surface

Existing ground surface or pavement over the proposed pipeline shall be identified as existing top of pavement (or ground surface) over centerline of water pipeline (or sewer).

Proposed ground surface or pavement over the proposed pipeline shall be identified as proposed top of pavement (or ground surface) over centerline of water pipeline (or sewer).

d. Match Lines

Match lines for each end of sheet shall be shown as follows:

STA 15+00.00 MATCH LINE
SEE SHEET 5

e. Water Pipelines

1) Water Pipeline Identification

Flow line of proposed water pipelines shall be identified as follows:

FL ___ INCH D.I.P. WATER PIPELINE.

Both the flow line and top of water pipelines shall be shown.

2) Water Pipeline Length

At bottom of profile, water pipeline length shall be identified as follows:

___ L.F. OF ___ INCH D.I.P. (CLASS 350) WATER.

3) Restrained Joints

Locations that require restrained joints shall be indicated on the profile with starting and ending stations identified.

4) Stationing and Flow Line Elevations

Pipeline stationing and flow line elevations shall be shown for each grade break as follows:

STA 14+00.00 GB
1192.35 FL

Pipeline stationing shall be shown for each fire hydrant, tee, cross, air valve, elbow, and blowoff as follows:



5) Pipeline Slopes

Minimum slopes shall be 0.0050. Pipe slopes shall be shown between all grade breaks to four decimal places (i.e. +0.0075) with + or - for direction of slope.

6) Pipe Cover

For water pipelines up to 12 inches in diameter, the pipe cover shall be minimum 3.0 feet; for water pipelines larger than 12 inches, the pipe cover shall be minimum 3 feet 6 inches.

7) Utility Crossings

Where water pipelines cross over utilities with a clearance of 2 feet or less, the drawings shall show the elevations for the bottom of the water pipeline and the top of the utility. Where water pipelines cross under utilities with a clearance of 2 feet or less, the drawings shall show the elevations for the top of the water pipeline and the bottom of the utility.

EXISTING UTILITY ELEVATIONS SHALL BE DETERMINED BY FIELD POTHOLING AND POTHOLE NOTES SHALL BE PROVIDED TO THE DISTRICT WITH DRAWING SUBMITTAL.

f. Sewers

1) Sewer Identification

Flow line of proposed sewers shall be identified as follows:

FL __ INCH VCP SEWER.

Both the flow line and top of sewers shall be shown.

2) Stationing and Flow Line Elevation

Sewer stationing and flow line elevations shall be shown at inlet and outlet of each sewer manhole as follows:

STA 12+25.00
1192.35 FL

A minimum drop of 0.1 foot shall be shown across manholes. Where pipeline slopes are greater than 2 percent, trough shall be straight graded across manholes.

3) Manholes

Each manhole shall be identified as follows:

STA 12+12.00
MANHOLE NO. ___  ← Numerical Identification

4) Sewer Lengths and Sewer Slopes

Sewer lengths and sewer slopes shall be shown between all manholes as follows:

S = 0.0050 135.00 LF ___ INCH VCP

Lengths of pipe are from outside of manhole to outside of manhole.

5) Minimum Cover

The minimum cover shall be 6.5 feet between the top of sewer and existing or proposed ground surface.

6) Utility Crossings

Where sewers cross over utilities with a clearance of 2 feet or less, the drawings shall show the elevations for the bottom of the sewer and the top of the utility. Where sewers cross under utilities, the drawings shall show the elevations for the top of the sewer and the bottom of the utility.

EXISTING UTILITY ELEVATIONS SHALL BE DETERMINED BY FIELD POTHOLING AND POTHOLE NOTES SHALL BE PROVIDED TO THE DISTRICT WITH DRAWING SUBMITTAL.

E. PLAN CHECK CHECKLISTS

Standard plan check review checklists are included at the back of this section for reference only.

F. DIGITAL FILE FORMAT

The District requires the Developer's engineer preparing improvement plans to submit to the District, in addition to the material currently being submitted for plan checking, a digital graphics file containing water and/or sewer lines as appropriate, boundary, street centerline, right-of-way and lot/parcel line data necessary to facilitate transferring of the information into the District's mapping system. If the engineer does not have the capability to provide such files, the District will input the improvement information into its mapping system and recover the cost through the plan check process. After all plan check comments have been incorporated on the plans, and prior to signature, the digital data in addition to the mylar plans must be received by the District.

1. Format of Data for Conversion

The preferred format for digital submissions of the graphical data is AutoCAD Release 2004 or earlier. The District will also accept the generic DXF format. The DXF format will only be accepted if the engineer does not have the capability to generate AutoCAD formatted files.

2. CD Formats

All digital information shall be on a CD Rom. All files should require no more than one CD for transmission. Multi-phased projects may require multiple CDs; however, no individual phase of the development should extend over more than one CD. No other project file should exist on the CD and no additional information is to exist in the file aside from data being specifically transmitted to the District.

All CDs will be submitted with labels indicating the following information:

FILE NAME: *(filename.dwg or filename.dxf)*
DATE: *(date submitted)*
MAP NAME: *(TR, PM, PP, Etc.)*
YVWD NO.: *(leave blank)*
COMPANY: *(engineering firm)*
MEDIA CREATOR: *(person creating the CD)*

3. Requirements for Hardcopy Submission

In conjunction with the digital submission of the proposed improvements on CD, a printed overall layout of the information will be required to be submitted. The scale of this plan shall be either 1" = 100', 1"=200', or 1"=400' whichever best fits a D-size (24" x 36") drawing sheet.

4. Data Integrity

Common points must be coincident to within 0.001'. A tie to a known location point is required, such as: section corners, quarter corners, street intersections, etc. The tie coordinates will be based on the California State Plane Coordinate system (NAD 83) in at least two locations, preferably on opposite sides of the area being mapped.

5. Data Layering Requirements

The data will be layered into the following features:

- a. Boundary Data
- b. Road Centerline Data
- c. Lot/Parcel Data
- d. Rights-of-Way Data
- e. Easement Data
- f. Tie Data
- g. Waterline Data (if applicable)
- h. Sewer Data (if applicable)
- i. Miscellaneous

Essentially, data specific to the improvements being submitted which is directly applicable to the landbase maintenance is to be separated and split into corresponding layers. All other data is transmitted on a single layer.

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

a.	Boundary Data:	Boundary Line Map Name Bearings/Distances/Curve Data	Required Required Optional
b.	Road Centerline Data:	Centerline Street Name Bearings/Distances/Curve Data	Required Required Optional
c.	Lot/Parcel Data:	Assessor Parcel Numbers Lot Lines Lot Numbers Lot Bearings Lot Distances	Required Required Required Optional Optional
d.	Right-of-Way Data:	Right-of-way Lines Descriptive Data Bearings/Distances/Curve Data	Required Optional Optional
e.	Easement Data:	Easement Lines Descriptive Data Bearings/Distances/Curve Data	Required Optional Optional
f.	Tie Data:	Graphic Representation	Required

		CA State Plane Coord Values	Required
		Bearings/Distances/Curve Data	Optional
g.	Waterline Data:	Water Lines	Required
		Valves and other appurtenances	Required
		Descriptive Data	Required
h.	Sewer Data:	Sewer Lines	Required
		Manholes and other appurtenances	Required
		Descriptive Data	Required
i.	Miscellaneous:	All other Data	Optional

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**EXHIBIT II-1
GENERAL WATER NOTES**

1. MATERIALS AND INSTALLATION SHALL CONFORM TO THE YUCAIPA VALLEY WATER DISTRICT STANDARD (LATEST REVISION THEREOF), HEREIN KNOWN AS "DISTRICT" OR "Y.V.W.D."
2. WATERMANS SHALL BE 8 INCHES MINIMUM DUCTILE IRON PIPE (D.I.P.) CL-350, 0-RING BELL AND SPIGOT TYPE. SIZE OF MAINS SHALL BE DETERMINED BY Y.V.W.D., AS SHOWN ON THESE PLANS.
3. ALL SERVICE CONNECTIONS TO BE 3/4 INCH COPPER TUBE SIZE WITH 3/4 INCH CORP. STOP (MUELLER COMPRESSION TYPE). ANGLE STOP SHALL BE LOCKING TYPE, 3/4 INCH, PER DIST. STD. W-5. METERS TO BE SET BY Y.V.W.D.
4. STANDARD WATERMAIN LOCATION IS 7 FEET OFF CURB FACE (SOUTH AND WEST OF CENTERLINE) UNLESS OTHERWISE NOTED.
5. THE DISTRICT SHALL MAKE ALL WATERMAIN CONNECTIONS TO EXISTING WATERMANS, UNLESS OTHERWISE NOTED. WORK TO BE PERFORMED, TIME AND MATERIAL, ARE AT THE DEVELOPERS EXPENSE.
6. HYDRO-TEST TO 200 P.S.I. MIN. 2 HOURS DURATION AT LOWEST POINT IN THE WATERMAIN.
7. GATE VALVES TO BE MUELLER (BBM BODY, BRASS MOUNTED NON-RISING STEM, RESILIENT WEDGE) FLANGED ENDS, PER DIST. STD. W-10.
8. CONTRACTOR SHALL USE DOUBLE STRAP SERVICE CLAMPS WHEN CONNECTING SERVICE LATERALS.
9. CONTRACTOR SHALL NOTIFY DISTRICT 48 HOURS PRIOR TO SHUTDOWN OF WATERMANS AND/OR INSPECTIONS.
10. INSTALLATION SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS AND LATEST Y.V.W.D. SPECIFICATIONS AND/OR AS DIRECTED BY THE ENGINEER.
11. METER BOX ASSEMBLY SHALL BE JENSEN 37-S, EISEL 437, OR J&R 4-1/2 CONCRETE BOX.
12. PROVIDE A MINIMUM OF 10 FEET HORIZONTAL SEPARATION, OUTSIDE DIAMETER TO OUTSIDE DIAMETER BETWEEN SEWER AND WATER MAINS. PROVIDE A MINIMUM OF 5 FEET HORIZONTAL SEPARATION, OUTSIDE DIAMETER TO OUTSIDE DIAMETER BETWEEN SEWER LATERALS AND WATER SERVICES.

13. BACKFILL COMPACTION AND RE-SURFACING IN EXISTING STREETS SHALL CONFORM TO STREET DIVISION SPECIFICATIONS (LATEST REVISION THEREOF).
14. ALL VALVES INSTALLED BY THE CONTRACTOR SHALL BE ACCESSIBLE FOR OPERATION WITH COMPLETE VALVE BOX TO GRADE DIRECTLY FOLLOWING CONNECTION TO EXISTING WATER SYSTEM AS APPROVED BY Y.V.W.D.
15. SAND SHALL BE USED FOR BEDDING AND BACKFILL TO A DEPTH OF 12 INCHES ABOVE PIPE, AS DIRECTED BY THE DISTRICT. INSTALL 2-INCH WIDE ALMA TAPE 1 FOOT ABOVE PIPE.
16. FIRE HYDRANTS SHALL CONFORM TO THE Y.V.W.D. STANDARD SPECIFICATIONS AND SHALL BE 6 INCH, 3-WAY WITH (2) 2-1/2 INCH AND (1) 4 INCH OUTLET, HYDRANT SHALL BE WET BARREL, CLOW MODEL 860, JONES J-4060, AVK MODEL 24/50 PER DISTRICT STD. NO. W-9.
17. COMBINATION AIR/VACUUM RELEASE VALVES SHALL BE AT LEAST 1 INCH IN SIZE, AND SHALL BE CRISPIN, STAINLESS STEEL TRIM PER DISTRICT STD. NO. W-14.
18. WATERMAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES FROM TOP OF PIPE.
19. RESTRAINED JOINTS SHALL BE USED AT ALL ANGLE FITTINGS, TEES, ELBOWS AND DEAD ENDS.
20. APPROVAL BY Y.V.W.D. OF ANY PROPOSED CONNECTIONS TO AN EXISTING Y.V.W.D. FACILITY DOES NOT IMPLY APPROVAL OF THE CORRECTNESS OF THE ELEVATIONS SHOWN ON THESE PLANS.
21. THE ESTIMATED QUANTITY FOR EACH SPECIFIC ITEM OF THE WORK DESIGNATED ON THE PLANS SHALL BE CONSIDERED AS APPROXIMATE ONLY AND NO GUARANTEE IS MADE THAT THE QUANTITIES WHICH CAN BE DETERMINED BY COMPUTATIONS, BASED ON THE DETAILS AND DIMENSIONS SHOWN ON THE PLANS, WILL EQUAL THE ESTIMATED QUANTITIES. THE ESTIMATE OF QUANTITIES IS PROVIDED BY THE ENGINEER ONLY FOR THE CONVENIENCE OF THE OWNER. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AND BE RESPONSIBLE FOR HIS OWN CONSTRUCTION QUANTITIES BEFORE SUBMITTING A BID. ANY ITEM OF WORK, OR PORTION THEREOF, REQUIRED BY THESE PLANS WHICH IS NOT SPECIFICALLY LISTED IN THE ESTIMATE OF QUANTITIES SHALL BE CONSIDERED AS INCLUDED IN THE OTHER ITEMS OF WORK.
22. ALL 3/4-INCH COPPER WATER SERVICE INSTALLATIONS SHALL BE EXTENDED BEHIND CURB AS SHOWN IN THE PLANS AND PER Y.V.W.D. STD. W-5.

23. THE CONTRACTOR IS ADVISED THAT THE WORK ON THIS PROJECT MAY INVOLVE WORKING IN A CONFINED SPACE. CONTRACTOR SHALL BE RESPONSIBLE FOR "CONFINED AIR SPACE" ARTICLE 108, TITLE 8 CALIFORNIA ADMINISTRATIVE CODE.
24. ALL PIPELINES OR SUBSTRUCTURES OF ANY KIND NOT SHOWN ON THESE PLANS LYING WITHIN THE AREA OF IMPROVEMENT SHALL BE REMOVED, RELOCATED, OR REINFORCED TO THE SATISFACTION OF THE COUNTY ENGINEER AND THE COMPANY OWNING THE FACILITY AT NO EXPENSE TO THE CITY OF YUCAIPA, THE Y.V.W.D., OR THE COUNTY OF SAN BERNARDINO.
25. ALL COMPACTION SHALL BE PERFORMED PER CITY STANDARDS.
26. EXCAVATION AND TRENCH WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE STATE CONSTRUCTION SAFETY ORDERS.
27. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS AS TO OFFER THE LEAST POSSIBLE OBSTRUCTION AND INCONVENIENCE TO THE PUBLIC, AND HE SHALL HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAN HE CAN PROSECUTE PROPERLY WITH DUE REGARD TO THE RIGHTS OF THE PUBLIC.
28. CONVENIENCE ACCESS TO DRIVEWAYS, HOUSES, AND BUILDINGS ALONG THE LINE OF WORK SHALL BE MAINTAINED, AND TEMPORARY CROSSING SHALL BE PROVIDED AND MAINTAINED IN GOOD CONDITION, NOT MORE THAN ONE CROSSING OR INTERSECTING STREET OR ROAD SHALL BE CLOSED AT ANY ONE TIME WITHOUT THE APPROVAL OF THE ENGINEER.
29. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUCH FENCES, BARRIERS, DIRECTIONAL SIGNS, LIGHTS, AND FLAGMEN AS ARE NECESSARY TO GIVE ADEQUATE WARNING TO THE PUBLIC AT ALL TIMES OF ANY DANGEROUS CONDITIONS TO BE ENCOUNTERED AS A RESULT OF THE CONSTRUCTION WORK AND TO GIVE DIRECTION TO THE PUBLIC.
30. THE CONTRACTOR SHALL EXERCISE DUE CARE TO AVOID INJURY TO EXTENDING IMPROVEMENTS OR FACILITIES, UTILITY FACILITIES, ADJACENT PROPERTY, AND TREES AND SHRUBBERY THAT ARE NOT TO BE REMOVED. CONTRACTOR SHALL NOTIFY OSHA PRIOR TO ENTERING PROJECT SITE.
31. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK, AND THE CONTRACTOR SHALL FULLY COMPLY WITH ALL STATE AND FEDERAL LAWS, RULES, REGULATIONS, AND ORDERS RELATING TO SAFETY TO THE PUBLIC AND WORKMEN.

32. ALL REMOVALS IN PAVED AREAS SHALL BE SAW CUT ON A NEAT, STRAIGHT LINE PARALLEL TO THE PIPELINE. THE CUT EDGE SHALL BE PROTECTED FROM CRUSHING AND ALL BROKEN EDGES SHALL BE RE-CUT PRIOR TO PAVING OPERATIONS.
33. CONTRACTOR SHALL BE REQUIRED TO PRESSURE TEST AGAINST TEST PLATE WHERE CONNECTING TO EXISTING SYSTEM OR TRACT.
34. BEFORE MAKING ANY EXCAVATION OR TRENCH 5 FEET OR MORE IN DEPTH, CONTRACTOR SHALL SUBMIT TO DISTRICT A DETAILED DRAWING SHOWING THE DESIGN OF SHORING, BRACING, SLOPING, OR OTHER PROVISIONS TO BE MADE FOR WORKER PROTECTION. DRAWINGS SHALL BE SPECIFIC AS TO WHERE THE DESIGN APPLIES (WHICH STATIONS), AND SHALL REFERENCE THE PROJECT SOILS REPORT. IF SAID DRAWINGS DO NOT VARY FROM THE REQUIREMENTS OF THE OSHA CONSTRUCTION SAFETY ORDERS, A STATEMENT SIGNED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER, ENGAGED BY CONTRACTOR AT HIS EXPENSE, SHALL BE SUBMITTED CERTIFYING THAT THE CONTRACTOR'S EXCAVATION SAFETY DRAWINGS COMPLY WITH OSHA CONSTRUCTION SAFETY ORDERS. IF SAID DRAWINGS VARY FROM SAID OSHA CONSTRUCTION SAFETY ORDERS, THE DRAWINGS SHALL BE PREPARED AND CERTIFIED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER AND SAID ENGINEER SHALL AFFIX HIS SEAL AND SIGNATURE TO EACH SHEET OF SAID DRAWING.
35. WHEN PROPOSED RADIUS IS LESS THAN 344 FEET, CONTRACTOR SHALL USE FITTINGS OR SHORTER PIPE LENGTHS DUE TO 3° MAXIMUM PULL FOR 8-INCH DIP.

**EXHIBIT II-2
GENERAL SEWER NOTES**

1. ALL MATERIAL TESTING AND INSPECTION OF PIPE SHALL BE IN CONFORMITY WITH THE REQUIREMENTS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARD. FAILURE TO MEET ANY OF THE COUNTY AND AWWA REQUIREMENTS WILL BE CAUSE FOR REJECTION.
2. WATER AND SEWER SEPARATION Y.V.W.D. STD. DWG. NO. S-23 & S-24.
3. SLOPES IN SEWER PROFILE ARE CALCULATED FROM C.L. OF MANHOLE TO C.L. OF MANHOLE (UNLESS OTHERWISE NOTED).
4. ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) LATEST EDITION AND ALL SUPPLEMENTS.
5. APPROVAL OF THIS PLAN BY THE YUCAIPA VALLEY WATER DISTRICT DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OF THE LOCATION OR OF THE EXISTENCE OR NONEXISTENCE OF ANY UNDERGROUND UTILITY PIPE OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THE PROTECTION OF ALL UTILITIES WITHIN THE LIMITS OF THE PROJECT.
6. INSPECTION SHALL BE BY THE YUCAIPA VALLEY WATER DISTRICT. ALL REQUESTS FOR INSPECTION SHALL BE MADE AT LEAST 48 HOURS IN ADVANCE OF THE PROPOSED CONSTRUCTION.
7. DURING THE PERIOD OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN SUCH WARNING SIGNS, STOP SIGNS, BARRICADES AND OTHER SAFETY MEASURES AS DIRECTED BY THE CITY OF YUCAIPA WITH REFERENCE TO THE W.A.T.C.H. MANUAL.
8. SEWER PIPE SHALL COMPLY WITH SECTION 207-8, "VITRIFIED CLAY PIPE", OF THE STANDARD SPECIFICATIONS.
9. USE OF A PIPE DEFLECTOR OR REROUNDER SHALL NOT BE PERMITTED ON OVER-DEFLECTED PIPE.
10. CONTRACTOR SHALL NOT OPEN MORE TRENCH THAN CAN BE PROPERLY CONSTRUCTED AND FILLED IN A DAY'S OPERATION. ANY TRENCH UNAVOIDABLY LEFT OPEN DURING THE HOURS OF DARKNESS OR OVER A WEEKEND SHALL BE FENCED WITH 6-FOOT HIGH CHAIN LINK FENCING AND PROPERLY LIGHTED.
11. CONTRACTOR SHALL REINSTALL PAVEMENT MARKINGS AND STRIPING THAT HAS BEEN DISTURBED BY HIS OPERATIONS.

12. OSHA PERMIT REQUIRED FOR TRENCHES OVER 5 FEET IN DEPTH, PRIOR TO START OF TRENCH EXCAVATION.
13. CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT PRIOR TO BEGINNING WORK.
14. THE CONTRACTOR SHALL PROVIDE SAFE AND CONTINUOUS PASSAGE FOR LOCAL PEDESTRIAN AND VEHICULAR TRAFFIC AT ALL TIMES.
15. SHOULD ANY OF THE EXISTING UTILITIES OR ANY OTHER FACILITIES CONFLICT WITH THE PROPOSED SEWER LINE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND AWAIT THE RELOCATION AND/OR ALTERNATE DESIGN.
16. BEFORE MAKING ANY EXCAVATION OR TRENCH 5 FEET OR MORE IN DEPTH, CONTRACTOR SHALL SUBMIT TO DISTRICT A DETAILED DRAWING SHOWING THE DESIGN OF SHORING, BRACING, SLOPING, OR OTHER PROVISIONS TO BE MADE FOR WORKER PROTECTION. DRAWINGS SHALL BE SPECIFIC AS TO WHERE THE DESIGN APPLIES (WHICH STATIONS), AND SHALL REFERENCE THE PROJECT SOILS REPORT. IF SAID DRAWINGS DO NOT VARY FROM THE REQUIREMENTS OF THE OSHA CONSTRUCTION SAFETY ORDERS, A STATEMENT SIGNED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER, ENGAGED BY CONTRACTOR AT HIS EXPENSE, SHALL BE SUBMITTED CERTIFYING THAT THE CONTRACTOR'S EXCAVATION SAFETY DRAWINGS COMPLY WITH OSHA CONSTRUCTION SAFETY ORDERS. IF SAID DRAWING VARIES FROM SAID OSHA CONSTRUCTION SAFETY ORDERS, THE DRAWINGS SHALL BE PREPARED AND CERTIFIED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER AND SAID ENGINEER SHALL AFFIX HIS SEAL AND SIGNATURE TO EACH SHEET OF SAID DRAWING.
17. LOTS REQUIRING BACKWATER VALVES ARE CALCULATED FROM THE FINISHED FLOOR ELEVATION, WHICH IS DESIGNED TO BE 1.0 FOOT ABOVE THE PROPOSED PAD ELEVATION.

SPECIFIC NOTES

1. SEWER PROFILE ELEVATIONS ARE TO FLOW LINE.
2. SEWER PIPE ZONE AND TRENCH SHALL BE PLACED IN ACCORDANCE WITH STANDARD DRAWINGS.
3. SEWER PIPE SHALL BE V.C.P., PER Y.V.W.D. STANDARDS AND SPECIFICATIONS.
4. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH Y.V.W.D. STD. DWG. S-3.
5. ALL SEWER CONSTRUCTION AND MATERIALS TO BE PER Y.V.W.D. STANDARDS AND SPECIFICATIONS.

6. MINIMUM 10.0 FEET SEPARATION BETWEEN SEWER AND WATER LINES SHOWN ON THE PLANS IS OUTSIDE TO OUTSIDE.
7. THE CONTRACTOR IS ADVISED THAT THE WORK ON THIS PROJECT MAY INVOLVE WORKING IN A CONFINED AIR SPACE. CONTRACTOR SHALL BE RESPONSIBLE FOR "CONFINED AIR SPACE" ARTICLE 108, TITLE 8 CALIFORNIA ADMINISTRATIVE CODES.
8. PRIOR TO CONSTRUCTION OF SEWER, CONTRACTOR SHALL EXPOSE EXISTING SEWER AND VERIFY ITS EXISTING ELEVATION AND DIAMETER, NO ALTERATIONS SHALL BE MADE TO EXISTING MANHOLE BASE OR STUB EXCEPT AS SPECIFICALLY AUTHORIZED BY Y.V.W.D.
9. WHERE A NEW MANHOLE MUST BE CONSTRUCTED IN AN EXISTING SEWER MAIN, THE ELEVATION OF THE INLET SHALL BE SUCH THAT ITS CROWN SHALL BE LEVEL WITH THE CROWN OF THE OUTLET PIPE, AT THEIR PROJECTIONS TO THE MANHOLE CENTERLINE.
10. ALL PIPELINES OR SUBSTRUCTURES OF ANY KIND NOT SHOWN ON THESE PLANS, LYING WITHIN THE AREA OF IMPROVEMENT SHALL BE REMOVED, RELOCATED, OR REINFORCED TO THE SATISFACTION OF THE COUNTY ENGINEER AND THE COMPANY OWNING THE FACILITY AT NO EXPENSE TO THE CITY OF YUCAIPA, THE Y.V.W.D., OR THE COUNTY OF SAN BERNARDINO.
11. MANHOLE FRAMES AND COVERS IN THE STREET SHALL BE CONSTRUCTED BY THE SEWER CONTRACTOR TO 6 INCHES BELOW FINISH GRADE. THE PAVING CONTRACTOR SHALL ADJUST THE TOP OF MANHOLE TO FINISH GRADE UPON COMPLETION OF PAVING PER DISTRICT STD. NO. S-5.
12. ALL COMPACTION SHALL BE PERFORMED PER CITY STANDARDS.
13. EXCAVATION AND TRENCH WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE STATE CONSTRUCTION SAFETY ORDERS.
14. CONTRACTOR SHALL PLACE PASSIVE ELECTRONIC MARKERS AT THE END OF ALL LATERALS 15 INCHES ABOVE PIPE.
15. NO CONNECTION TO THE HOUSE LATERAL SHALL BE PERMITTED PRIOR TO DISTRICT FINAL APPROVAL.
16. ALL LATERALS SHALL INCLUDE CUT-OFF WALL PER DISTRICT STD. S-18.
17. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS AS TO OFFER THE LEAST POSSIBLE OBSTRUCTION AND INCONVENIENCE TO THE PUBLIC, AND HE SHALL HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAN HE CAN EXECUTE PROPERLY WITH DUE REGARD TO THE RIGHTS OF THE PUBLIC.

18. CONVENIENT ACCESS TO DRIVEWAYS, HOUSES, AND BUILDINGS ALONG THE LINE OF WORK SHALL BE MAINTAINED, AND TEMPORARY CROSSING SHALL BE PROVIDED AND MAINTAINED IN GOOD CONDITION, NOT MORE THAN ONE CROSSING OR INTERSECTING STREET SHALL BE CLOSED AT ANY ONE TIME WITHOUT THE APPROVAL OF THE ENGINEER.
19. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SUCH FENCES, BARRIERS, DIRECTIONAL SIGNS, LIGHTS, AND FLAGMEN AS ARE NECESSARY TO GIVE ADEQUATE WARNING TO THE PUBLIC AT ALL TIMES OF DANGER CONDITIONS TO BE ENCOUNTERED AS A RESULT OF THE CONSTRUCTION WORK AND TO GIVE DIRECTIONS TO THE PUBLIC.
20. THE CONTRACTOR SHALL EXERCISE DUE CARE TO AVOID INJURY TO EXISTING IMPROVEMENTS OR FACILITIES, UTILITY FACILITIES, ADJACENT PROPERTY, AND TREES AND SHRUBBERY THAT ARE NOT TO BE REMOVED. CONTRACTOR SHALL NOTIFY OSHA PRIOR TO ENTERING PROJECT SITE.
21. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK, AND THE CONTRACTOR SHALL FULLY COMPLY WITH ALL STATE AND FEDERAL LAWS, RULES, REGULATIONS, AND ORDERS RELATING TO SAFETY TO THE PUBLIC AND WORKMEN.
22. ALL REMOVALS IN PAVED AREAS SHALL BE SAW CUT ON A NEAT, STRAIGHT LINE PARALLEL TO THE PIPELINE. THE CUT EDGE SHALL BE PROTECTED FROM CRUSHING AND ALL BROKEN EDGES SHALL BE RECUT PRIOR TO PAVING OPERATIONS.

EXHIBIT II-3

YUCAIPA VALLEY WATER DISTRICT
WATER PLANS CHECKLIST

PROJECT: _____

WORK ORDER: _____

BY: _____

DATE: _____

SHT: _____ OF: _____

TITLE SHEET

	WATER
PROJECT TITLE	
LEGEND	
NOTES	
Notifications	
Index of Drawings (1)	
General Water Notes	
VICINITY MAP	
North Arrow	
Street Names	
Location of Project	
INDEX MAP	
Scale	
North Arrow	
Proposed Water Lines	
Water Services	
Fire Hydrants, Blowoffs, Valves	
Lots, Streets	
Plan Layout/Sheet Reference	
BENCHMARK	
FIRE MARSHALL SIGNATURE BLOCK	
ESTIMATE OF QUANTITIES	

(1) Index shall match sheet title blocks

YUCAIPA VALLEY WATER DISTRICT
WATER PLANS CHECKLIST

PROJECT: _____

WORK ORDER: _____

BY: _____

DATE: _____

SHT: _____ OF: _____

PLAN SHEETS

ITEM	SHEET NUMBER									
TITLE BLOCK (1)										
YVWD APPROVAL BLOCK										
SCALE (1"=40', 1"=4' OR 1"=8')										
SCALE BAR										
USA NOTE										
NORTH ARROW										
STREET NAMES										
DISTANCE AND BEARINGS										
RIGHT-OF WAY LINE WITH DISTANCES										
CURB LOCATION WITH DISTANCE										
SIDEWALK LOCATIONS										
EXISTING/FUTURE UTILITIES										
LOT LINES AND NUMBERS										
TICK MARKS FOR STATIONS (LEFT TO RIGHT)										
PIPELINE LOCATION (2)										
MATCHLINES										
BC/EC/AP/STATIONING (3)										
CURVE DATA (4)										
JOINT DEFLECTIONS (5)										
SERVICES (6)										
STATIONS OF ALL FIRE HYDRANTS (7)										
STATIONS OF ALL VALVES (8)										
STATIONS OF ALL AIR VALVES (9)										
STATIONS OF ALL BLOWOFFS (10)										
STATIONS OF ALL FITTINGS										
PROTECTION OF EXISTING UTILITIES										
CONNECTION DETAILS										

- (1) Title block shall include tract number, and street names.
- (2) South or west side of street, 7' from curb. A distance from centerline should be shown. Be sure location does not interfere with other utilities. 10' separation (outside to outside) from sewers.
- (3) Lengths shall be consistent with curve data.
- (4) Deltas, radii, lengths, and tangents shall be consistent and non-conflicting with one another.
- (5) Not to exceed 60% of manufacturer's recommendation
- (6) Locate at property line; Install two per trench where possible; include stationing; one per lot

- (7) Locations shall be approved by Fire Dept. Typ. 300-400' apart, at property lines, and near cul-de-sac:
- (8) 3 Valves at tees, 4 valves at crosses. One valve at 90 degree bends and dead ends. In-line valves at 1000' max. spacing.
- (9) Required at all high points and cul-de-sacs or dead ends. Max. run = 2500'.
- (10) Blowoffs at all low points and cul-de-sacs or dead end. Size shall be 4" for < 16" pipe, 6" for ≥ 16" pipe.

YUCAIPA VALLEY WATER DISTRICT
WATER PLANS CHECKLIST

PROJECT: _____

WORK ORDER: _____
 BY: _____
 DATE: _____
 SHT: _____ OF: _____

PROFILE SHEETS

ITEM	SHEET NUMBER									
STATION AT BOTTOM										
ELEVATIONS										
MATCHLINES										
EXISTING/PROPOSED GROUND SURFACE										
UTILITIES (1)										
PROPOSED FLOW LINE ____" PIPELINE										
PIPE COVER (2)										
STATIONS AT ALL FITTINGS AND APPURTENANCES										
PIPE SLOPE (3)										
VERTICAL FITTINGS										
RESTRAINED JOINTS (4)										

- (1) Minimum of 6" clearance except for sewers where water lines shall cross 1' above sewers.
- (2) Minimum 30" for pipes 6" and less, 36" for pipes 8" and 12", 42" for pipes 14" or larger.
- (3) Show between all grade breaks, calculated based on actual lengths (not just station to station).
- (4) Show lengths of restrained joints in profile.

EXHIBIT II-4

YUCAIPA VALLEY WATER DISTRICT
SEWER PLANS CHECKLIST

PROJECT: _____

WORK ORDER: _____

BY: _____

DATE: _____

SHT: _____ OF: _____

TITLE SHEET

	SEWER
PROJECT TITLE	
LEGEND	
NOTES	
Notifications	
Index of Drawings (1)	
General Sewer Notes	
VICINITY MAP	
North Arrow	
Street Names	
Location of Project	
INDEX MAP	
Scale	
North Arrow	
Proposed Sewer Lines	
Sewer Laterals	
Lots, Streets	
Manholes/Cleanouts	
Plan Layout/Sheet Reference	
BENCHMARK	
ESTIMATE OF QUANTITIES	

(1) Index shall match sheet title blocks

YUCAIPA VALLEY WATER DISTRICT
SEWER PLANS CHECKLIST

PROJECT: _____

WORK ORDER: _____
BY: _____
DATE: _____
SHT: _____ OF: _____

PLAN SHEETS

ITEM	SHEET NUMBER									
TITLE BLOCK (1)										
YVWD APPROVAL BLOCK										
SCALE (1"=40', 1"=4')										
SCALE BAR										
USA NOTE										
NORTH ARROW										
STREET NAMES										
DISTANCE AND BEARINGS										
RIGHT-OF WAY LINE WITH DISTANCES										
CURB LOCATION WITH DISTANCE										
SIDEWALK LOCATIONS										
EXISTING/FUTURE UTILITIES										
LOT LINES AND NUMBERS										
TICK MARKS FOR STATIONS (LEFT TO RIGHT)										
SEWER LOCATION (2)										
MATCHLINES										
BC/EC/AP/STATIONING (3)										
CURVE DATA (4)										
LATERALS (5)										
STATIONS OF ALL MANHOLES (6)										
STATIONS OF ALL LATERALS (7)										
BACKWATER VALVES (8)										
PROTECTION OF EXISTING UTILITIES										
CONNECTION DETAILS										

- (1) Title block shall include tract number, and street names.
- (2) North or east side of street, 6' from centerline. A distance from centerline should be shown. Be sure location does not interfere with other utilities. 10' separation (outside to outside) from waterlines.
Sewers shall be specified to be extra strength vitrified clay pipe (VCP). Sewer pipelines shall be sized no smaller than 8 inches in diameter except for laterals.
- (3) Lengths shall be consistent with curve data
- (4) Deltas, radii, lengths, and tangents shall be consistent and non-conflicting with one another
Refer to YVWD design criteria. Curves are to be avoided except where necessary to maintain clearance from waterlines or match street alignment to maintain 6' off centerline.
- (5) One sewer lateral per lot, preferably under driveways.
- (6) Manholes
Manholes must be numbered from downstream up.
Minimum manhole diameters are 48 inches. 60 inch manholes required for terminus manholes with 3 or 4 laterals feeding it.
Special manholes required if greater than or equal to 20'.
Spacing: a. 350 ft for 8 inch pipe and smaller, b. 500 feet for 10 inch pipe and larger
- (7) Plan only. Laterals must have 5' minimum horizontal separation from water services.
- (8) Required if pad elevation is less than 1' above the rim elevation of the upstream manhole.

YUCAIPA VALLEY WATER DISTRICT
SEWER PLANS CHECKLIST

PROJECT: _____

WORK ORDER: _____
BY: _____
DATE: _____
SHT: _____ OF: _____

PROFILE SHEETS

ITEM	SHEET NUMBER									
STATION AT BOTTOM										
ELEVATIONS										
MATCHLINES										
EXISTING/PROPOSED GROUND SURFACE										
UTILITIES (1)										
PROPOSED FLOW LINE ___" SEWER										
STATIONS, DISTANCE, AND SLOPES (2)										
PIPE COVER (3)										
STATIONS AT ALL APPURTENANCES										

(1) Minimum of 6" clearance except sewers shall be located at least 1 foot below waterlines.

(2) Minimum slope:

- a. Laterals shall be typically 4 inch pipe graded at a minimum 2% slope and attain a minimum velocity of 2 fps.
- b. Mains (pipe slope in ft/ft)

<u>Pipe Diameter</u>	<u>Min Slope</u>
8	0.0040
10	0.0029
12	0.0022
15	0.0016
18	0.0012
21	0.0010
24	0.0008

On mainlines with less than 10 laterals, min slope is 2% (0.020)

Lengths of pipe are from outside of MH to outside of MH.

Slope calculation methodology shall be consistent throughout.

- c. 0.1' drop across manholes
- d. 0.2' drop across manholes for side inlets.
- e. At junctions, the tops of sewers shall match.
- f. Vertical curves are not allowed.

(3) Minimum 6.5' cover over top of pipe. Depth to flowline is typically 7.5'.