

SECTION 1

GENERAL CONDITIONS

1.01 GENERAL

These specifications establish standards for work, materials, and construction procedures for improvements to the water and sewerage systems of FPUD. These specifications are intended to establish general requirements for all work performed within the District. These Standards are not intended to provide specific requirements for any particular project. Therefore, each project shall also be designed under the specific direction of a civil engineer licensed in California. The District Engineer shall use professional judgment in allowing any deviations from these requirements.

1.02 REFERENCE SPECIFICATIONS

Wherever reference is made within these documents to certain standard specifications, the reference shall be construed to mean the latest standards, with all subsequent amendments, changes, or additions as thereafter adopted and published that are in effect at the date of approval by the District of the plans and specifications prepared by a private engineer.

APWA	American Public Works Association
ASTM	American Society for Testing Materials
AWWA	American Water Works Association
ASME	American Society of Mechanical Engineers
ANSI	American National Standard Institute
ACI	American Concrete Institute
SSPWC or "Green Book"	Standard Specifications for Public Works Construction
SDRSD	San Diego Regional Standard Drawings

1.03 DEFINITION OF TERMS

- A. Whenever in these specifications or other contract documents where these specifications govern, the following terms are used, they shall be defined as follows:
1. Applicant: Shall mean any property owner who makes application for District service or enters into an agreement with the District.
 2. Appurtenances: Valves, stops, bends, elbows, reducers, services, backflow preventers, bushings, plugs, caps, blocks, jackets, wyes, cleanouts, manholes, frames and covers, lateral markers and all other fittings, nuts, bolts, washers, gaskets or other work required to make a complete installation.
 3. Board of Directors: The Board of Directors of FPUD.
 4. Contract: The Contract between the Applicant (property owner) and his Contractor.
 5. Contractor: The person or entities entering into a contract with the Applicant for performance of the work or improvements pursuant to these specifications. The contractor shall at all times be represented on-site in person or by a duly designated

agent or superintendent. Instructions or information given by the Engineer to the Contractor's superintendent or agent on the work shall be considered as having been given to the Contractor.

6. Days: Unless otherwise specified, days shall mean calendar days.
7. District: The FPUD.
8. Elevation: Elevations referred to herein are to be based upon the U.S.C. & G.S. datum.
9. Engineer: A registered civil engineer appointed by the District acting either directly or through his properly authorized agent, engineers, assistants, inspectors and superintendents, unless otherwise qualified.
10. FPUD: Fallbrook Public Utility District.
11. General Manager: General Manager of the FPUD.
12. District Engineer: District Engineer of FPUD or an authorized representative.
13. Inspector: A designated representative of the District acting through the District Engineer.
14. Owner (Developer): Any person or entity who agrees to construct and install facilities which after acceptance will become part of the District's system and who must select and employ a licensed Class A, or approved C-34 or C-42 contractor, to perform the work.
15. Plans: The official scale and full size approved detail drawings, or exact reproductions thereof, which show location, character, dimensions, elevations, and details of the work to be done.
16. Design Manual: The applicable design criteria published in the "Design and Construction Standards for Potable Water and Sanitary Sewer Facilities of the FPUD." This includes water system and sewer system requirements for subdivisions and other extensions within the boundaries of the FPUDs as adopted by the Board of Directors including all amendments thereto.
17. Specifications: The "Design and Construction Standards for Potable Water and Sanitary Sewer Facilities of the FPUD," unless otherwise modified..
18. Standard Drawings: The standard drawings, a part of the "Design and Construction Standards for Water and Sanitary Sewer Facilities of the FPUD," unless otherwise modified.
19. Subcontractor: Any person or entity who has a contract with the Contractor to perform any of the work at the site. Subcontractor also means any person who has a contract with a subcontractor to perform any of the work at the site. All subcontractors must be approved by the District.
20. Work: Labor, materials, equipment, transportation, or other facilities and safety measures necessary to complete the improvement proposed under the Contract or Permit.
21. Private Engineer: A California registered civil engineer employed by the Applicant.
22. Approved, directed, satisfactory, proper, acceptable, required, necessary, and/or equal: shall be defined as considered approved, directed, satisfactory, proper, acceptable, required, necessary, or equal in the opinion of the District.
23. Utility: Public or private facilities for the transportation of fluids, gases, power, signals, or communications.

24. Building Lateral: Shall refer to the extension from the building to the service lateral clean-out at the property line, or other place of disposal.
25. Service Lateral, Sewer: Shall mean the sewer pipeline from a the lateral clean-out at the property line to a collection line within public right-of-way or easement.
26. Collection Line: Shall mean the District's sewer pipeline to which the service laterals are connected.
27. Trunk Line: Shall mean a main line sewer pipeline to which collection lines are connected and that serves the primary purpose of transporting sewage from collection lines to the treatment plant.
28. Service Lateral, Water: Shall mean the water line from the water distribution main within the public right-of-way or easement to the water meter.
29. Distribution Main: Shall mean the District's water pipeline to which the water service laterals are connected.
30. Transmission Main: Shall mean a large diameter main water pipeline to which distribution mains are connected and that serves the primary purpose of transporting water from one area of the District to another.

1.04 ABBREVIATIONS

The abbreviations used in the plans and specifications are abbreviations of the meanings of which are established by general usage throughout the industry and those defined below:

ABAN - Abandoned	MIN - Minimum
AC - Acre/Asphalt Concrete/Alternating Current	MIP - Male Iron Pipe Thread
ACP - Asbestos-Cement Pipe	MISC - Miscellaneous
AGG - Aggregate	MJ - Mechanical Joint
ANSI - American National Standards Institute	MOV - Motor Operated Valve
APWA - American Public Works Association	NA - Not Applicable
ASCE American Society of Civil Engineers	NACE - National Association of Corrosion Engineers
ASPH - Asphalt	NBS - National Bureau of Standards
ASSY - Assembly	NC - Normally Closed
ASTM - American Society for Testing & Materials	NE - Northeast
AWWA - American Water Works Association	NTS - Not to Scale
BC - Beginning of Curve	NW - Northwest
BVC - Begin Vertical Curve	NWL - Normal Water Level
CMLC - Cement Mortar Lined & Coated	OAE - Or Approved Equal
CONC - Concrete	OC - On Center
DIA - Diameter	OD - Outside Diameter
DIP - Ductile-Iron Pipe	OSHA - Occupational Safety and Health Administration, U.S. Department of Labor, as defined in the General Conditions
DIPRA - Ductile-Iron Pipe Research Association	PE - Plain End
EC - End of Curve	PI - Point of Intersection
EL - Elevation/Each Layer	PO - Push-On
ELEC - Electric	POB - Point of Beginning
EP - Edge of Pavement	PSI - Pounds Per Square Inch
EPA - Environmental Protection Agency (Federal)	PV - Plug Valve
ESMT - Easement	PVC - Polyvinyl Chloride
EST - Estimate or Estimated	
EVC - End Vertical Curve	
FG - Finished Grade	
FH - Fire Hydrant	

FIP - Female Iron Pipe Thread
FLG - Flange
FPS - Feet Per Second
FS - Finished Surface/Floor Sink/Federal Specifications
FT - Feet
G - Gas
GAL - Gallon
GALV - Galvanized
GB - Grade Break
RWGV - Resilient Wedge Gate Valve
HDPE - High-Density Polyethylene Pipe
HGL - Hydraulic Grade Line
HORIZ - Horizontal
HWL - High Water Level
HWY - Highway
ID - Inside Diameter
IE - Invert Elevation
IN - Inches
INV - Invert
I/O - Inlet/Outlet
IPT - Iron Pipe Thread
IRR - Irrigation
LF - Linear Foot
LP - Light Pole
LWL - Low Water Level
MATL - Material
MAX - Maximum
MECH - Mechanical
MGD - Million Gallons Per Day
MH - Manhole

PVI - Point of Vertical Intersect
PVMT - Pavement
QTY - Quantity
RJ - Restrained Joint
R/W - Right-Of-Way
RWGV - Resilient Wedge Gate Valve
S - South
SCADA - Supervisory Control and Data Acquisition
SCH - Schedule
SE - Southeast
SPEC - Specification
SSPWC - Standard Specifications for Public Works Construction
SS - Stainless Steel
ST - Street
STA - Station
STD - Standard
SW - Southwest
SYS - System
TC - Top of Curb
TEMP - Temporary
TYP - Typical
UTIL - Utilities
VC - Vertical Curve
VERT - Vertical
VPI - Vertical Point of Intersection
W - West
WM - Water Meter
WT - Weight
WTR - Water

1.05 INSPECTION

The District Engineer or representative will provide inspection for all work which is to be dedicated to the District upon completion. All materials and work shall be performed only in the presence of the District Engineer and any work done in the absence of said District Engineer shall be subject to rejection. The Contractor shall notify the District Engineer five (5) working days prior to starting and two (2) working days during construction, in order that inspection services may be provided. No inspection shall be available on weekends, District holidays or before 7:00 a.m. or after 3:30 p.m.

1.06 DEFECTIVE WORK

The inspection of the work shall not relieve the Applicant of any of his obligations to fulfill his agreement or permit with the District. Defective work shall be made good, and unsuitable materials may be rejected, notwithstanding that such work and materials may have been previously inspected by the District Engineer and accepted. If the work, or any part thereof, shall be found defective at any time before the final acceptance of the whole work, the Applicant or his Contractor shall correct such defect in a manner satisfactory to the District Engineer. All costs for retesting and re-inspection which are necessitated by defective materials and/or workmanship shall be at the sole expense of the Applicant.

1.07 TEMPORARY SUSPENSION OF WORK

The District Engineer shall have the authority to suspend the work wholly or in part for such time as he may deem necessary due to the failure on the part of the Contractor to carry out orders given, or to perform any provisions of the Contract. The Contractor shall immediately comply with the written order of the District Engineer to suspend the work wholly or in part. The work shall be resumed when methods or defective work has been corrected as ordered or approved in writing by the District Engineer.

In the event that a suspension of work is ordered as provided above, such suspension of work shall not relieve the Contractor of his responsibility to complete the work within the time limit set forth in the Agreement for Construction of Water and/or Sewer System, and shall not be considered cause for extension of the time for completion.

1.08 ERRORS OR DISCREPANCIES NOTED BY CONTRACTOR

If the Contractor, either before commencing work or in the course of the work, finds any discrepancy between these Specifications and Drawings, or between either of them and the physical conditions at the site of the work, or finds any error or omission in any of the drawings or in any survey, he shall promptly notify the District Engineer in writing of such discrepancy, error or omission.

1.09 REQUESTS FOR INFORMATION

Inquiries for existing FPUD facilities shall be made in writing or in person at the District offices.

1.10 PLAN AND PROFILE REQUIREMENTS

A. General.

1. All plans approved by FPUD shall have a two (2) year period in which to begin construction beginning from the date of the District Engineer's approval. At the end of the two year period the plans will be considered as expired. The plans must be resubmitted with the entire plan check fee and other submittal requirements before being considered for plan check. If FPUD standards are revised within the two year period, the project plans must be revised and conform to new standards.
2. All proposed work prepared by a Private Engineer shall be submitted to the District Engineer for approval on sheets which conform to the requirements of this section. All sheets shall be signed, sealed and dated by the Private Engineer responsible for the designs.
3. The overall size of each sheet shall be 24-inches high by 36-inches wide. Each sheet shall have a 2-inch wide margin on the left-hand border and ½-inch wide margins on the top, bottom, and right-hand borders.
4. Digital files with the District's standard title block, border, revision box and General Notes are available at the District Office. The District Engineer's approval is required for any deviation from this format.
5. Name and registration number of the Private Engineer responsible for the preparation of the project or the name of the firm and the name and registration number of the private engineer under whose direction the plans were prepared. Space shall also be provided

for the Private Engineer's signature, seal, date of expiration of said registration and seal.

6. The Revision box shall include the letter of the revision, date made, description of change and space for the initials of both the person making the change and for District approval. Revisions shall be marked with small triangles containing the letter of the revision and placed near the location of such change.
7. Each project shall contain a legend and list of abbreviations for use in defining the symbols and abbreviations used on the sheets. All symbols and abbreviations used must be defined on the Title sheet or Note sheet.
8. Waterline and Sewerline data table is required for each project. Include a column for Delta, bearing, radius, length, description and station.

A lateral table is required for each project. For water service include a column for lot number, design station, As-Built station, size of service, static pressure at service, and length of service. For sewer laterals provide lot number, design station, As-Built station, length of lateral, depth at property line and a column to indicate the use of a backflow preventer.

9. The following information shall be located on the Title Sheet:
 - a. The name, address and phone number of the Private Engineer responsible for the preparation of the project.
 - b. A location map at a scale of 1-inch = 2,000 feet showing and labeling the boundary of the project in relation to major streets or interstate, district boundaries, adjacent developments and other pertinent features. The location map shall have a north arrow oriented towards the top of the sheet.
 - c. A vicinity map at a scale of 1-inch = 200 feet (minimum) to show the entire project without match lines. The vicinity map shall contain lot boundaries, street right-of-way lines and names, a general layout of the sewer and/or water lines with size and material, location of manholes, main line valves, fire hydrants, blow-offs, air and vacuum valves and other major appurtenances, and other features, natural or artificial, necessary for a general understanding of the project. The vicinity map shall have a north arrow oriented towards the top of the sheet.
 - d. A written description of benchmarks, including locations and elevations.
 - e. An index to all drawings.
 - f. Applicable approval blocks for County Department of Public Works, North County Fire Protection District and Department of Health Services.
 - g. Plan Declaration: The following declaration shall be placed on the first sheet of the Plans and signed, sealed, and dated by the responsible registered civil engineer:

I hereby declare that the design of the improvements as shown on these plans complies with professional engineering standards and practices. As the engineer in responsible charge of the design of these improvements, I assume full responsible charge for such design. I understand and acknowledge that the plan check of these plans by the FPUd is a review for the limited purpose of ensuring the plans comply with District procedures and other applicable policies and ordinances. The plan check is not a determination of the technical adequacy of the design of the improvements. Such plan check does not, therefore, relieve me of my responsibility for the design of these improvements.

As Engineer of Work, I agree to indemnify and save the FPUD, its officers, agents, and employees harmless from any and all liability, claims, damages or injuries to any person or property which might arise from the negligent acts, errors or omissions of the Engineer of Work, my employees, my employees agents or consultants.

Engineer

License No.

Date

- h. Manholes shall be sequentially numbered on the plans with numbers beginning at the lowest invert.

B. Plan Drawings. The Plan view of all drawings shall include the following:

1. Scale shall be a minimum of 1-inch = 40 feet unless otherwise approved by the District Engineer.
2. All sewer and/or water facilities, street lines, lot lines, curb grades, storm drains, driveways and other utilities both existing and proposed and all other features necessary to give a complete understanding of the project.
3. Survey stationing of the centerline of all manholes, valves, or other structures relative to centerline stationing or right-of-way stationing and provide the pipe data for all bends, curves, or deflections.
4. Show the alignment with bearings and distances and width of all easements for facilities not within public rights-of-way.
5. The plan shall include a north arrow oriented generally upwards or to the left.
6. Match lines shall be used between the sheets separated portions of the plan. Each match line shall be cross-referenced to show the sheet location of the matching portion of plan whether it be on the same or different sheet.
7. Existing monumentation in existing streets shall be shown.

C. Profile Drawings. Profile drawings shall normally be shown on the same sheet and directly above the corresponding plan view so that manholes, valves, air and vacuum valves and other appurtenances in both the plan and profile view are vertically aligned as nearly as possible. Profile drawings shall be drawn at the same horizontal scale as the plan view. The normal vertical scale shall be 1-inch = 4-feet. The vertical elevations shall be written on both the left and right sides of the profile. Where water and sewer lines cross or where they cross other facilities such as drainage structures, the profile shall show elevations of top and bottom of the lines at the crossings.

Profile drawings shall show and label the following information, as applicable:

1. Profile (at centerline of street or easement) of existing and proposed ground surface.
2. Size, slope (to 4 significant figures), pressure rating, and material of pipeline.
3. All deflection angles shall be shown in profile and labeled as Grade Break (G.B.). The angle shall be shown in degrees, minutes, seconds. When high deflection couplings are used they must be called out in profile at the location of the grade break.
4. Survey stationing of street centerline between centerline of manholes or valves and actual distance between centerline of valves or outside of manhole to outside of manhole.

5. Pipeline elevations to the nearest 0.01-foot of invert for sewer and to the nearest 0.01-foot of centerline for water. The invert of the pipeline shall be shown in profile and labeled as "invert grade".
 6. Rim elevation of manholes or other structures.
 7. Any existing or proposed pipeline, utility, or similar structure that crosses the waterline or parallels the line with less than 5-feet between the existing and proposed utilities.
 8. The location and limits (include station) of other features such as a steel casing, concrete encasement, extra strength pipe, special pipe bedding, etc.
 9. Depth of manhole from rim to flow line of lowest pipe invert.
 10. Elevations at the inlet and outlet of the manholes.
 11. Private sewer laterals must be shown in profile where they cross other utilities where it appears a potential conflict exists.
 12. Match lines shall be used between the sheets separated portions of the profile. Each match line shall be cross-referenced to show the sheet location of the matching portion of profile whether it be on the same or different sheet.
 13. Profile drawings shall be discontinued at match lines with survey stationing and cross-referencing corresponding to the match lines shown on the plan drawing.
- D. Standard Details. Where the Private Engineer intends to use any of the Standard Details without modification, these details need not be reproduced on the Construction Plans provided that specific reference is made to each detail. For example, a manhole detail would not be required provided that the callout for the manhole refers to FPUD Standard Drawing S-4. Where the Private Engineer intends to modify any of the Standard Details, these revised details shall be included in the Construction Drawings in their entirety for District approval.
- E. Special Details. Special Details are required for any tie-in to an existing waterline or as required by the District Engineer. Connection details must include all pipe and fitting materials, couplings, fittings and adapters necessary to construct the tie-in.
- F. As-Builts Plans. On completion of the project the District Engineer shall be given a complete set of full-size photo reproducible mylar sheets (ammonia mylar sheets are not allowed) that shall show, in complete detail, all elements of the project, as constructed, text must be legible. The words "As-Builts" shall be boldly stamped on each sheet in 1/2-inch high bold block letters. The As-Built drawings will be reviewed and must be signed off by the District Engineer prior to issuing a Notice of Completion. An electronic copy of the mylar sheets shall also be provided on a computer disk or CD. Each sheet shall also be provided in an AutoCAD format. Each sheet of the drawing set shall be scanned and saved as a separate file as a TIF image.
- G. Advertising. Plans shall be free of advertising, insignia, labels, emblems, seals, or other markings not relevant to the work. When approved and accepted by the District Engineer, such plans shall become the property of the FPUD.
- H. Responsibility. Approval of plans by FPUD will not relieve the Applicant, Owner or Engineer of any responsibility because of errors in the plans either of commission or omission. Such errors, when brought to the attention of the private engineer by the District Engineer, shall be promptly remedied as herein provided.

- I. Revisions. After mylars have been approved and filed, or after inspection fees have been paid, changes may be made to the plans upon approval of the District Engineer. In order to obtain such approval, the Private Engineer shall first submit two (2) sets of duplicate blueprints of the original drawings upon one set of which the proposed change is shown. At the discretion of the District Engineer, construction of changes shall not be completed until revisions are approved.

1.11 SUBMITTALS

- A. One (1) sets of the water and sewer facilities design drawings shall be submitted to the District Engineer for plan check. The drawings shall be accompanied by a complete description of all materials, structures, and mechanical equipment to be used on the project.
- B. One (1) set of street improvement plans. Approved street plans are required prior to District approval of water and/or sewer improvement plans.
- C. One (1) set of storm drain or drainage improvement plans. Approved storm drain or drainage improvement plans are required prior to District approval of water and/or sewer improvement plans.
- D. One (1) copy of the soils report
- E. One (1) set of grading plans.
- F. One (1) set of irrigation plans.
- G. One (1) copy of the tentative tract or parcel map indicating phasing schedule, if applicable.
- H. One (1) copy of the final tract or parcel map.
- I. One (1) copy of Conditions of Approval.
- J. One (1) copy of the area study and design calculations for sizing of the water and sewer improvements.
- K. Letter of Fire Flow Requirements from the appropriate Fire Protection District. The requirements may be included in the Conditions of Approval.
- L. Wet stamped Private Engineers cost estimate for all public water and sewer facilities. This cost estimate shall be based on a copy of the San Diego County Subdivision Cost Guidelines.
- M. Calculations for length of restrained joint including all assumptions used.
- N. Legal description, and plat for all easements.
- O. Disclaimer. The District is not responsible for the accuracy of the location of underground lines and the following note is required on the Title page of each plan: "Approval of this plan by the FPUD does not constitute a representation as to the accuracy of the location of, or the existence of, any underground utility, pipe, or structure within the limits of this project." The District accepts no responsibility for any reimbursement due to additional facilities or time delays as a result of these additional facilities.

- P. Contractor submittals are required for all installations. Submit materials to the District Engineer for approval.

1.12 PROCESSING OF PRIVATE CONTRACTS

- A. Legal Description. A legal description and a plat of the property to be served by the proposed water main or sewer or the property through which the proposed water or sewer line will traverse must be filed with the District in the form of a Preliminary Title Report.
- B. Plan Check Application. The required plan checking fee shall be paid to the District and two (2) sets of blueline prints shall be submitted to the District Engineer for checking, signed and stamped by a registered civil engineer. Checking of the plans will commence by the District Engineer as soon as fees are paid and as soon as possible following receipt of the items to be submitted per Section 2 General Conditions.
- C. Items to be Submitted. Irrigation plans, street improvement plans, grading plans, and the latest tract maps shall be submitted along with the required prints. In addition, the Applicant shall submit a plan of the subdivision lots and streets prepared on mylar at a scale of 1-inch = 200-feet. Other items are listed under Section 1.11.
- D. Corrections. After the District has checked the proposed plans and if corrections are necessary, the plan will be directed back to the Private Engineer or Applicant. After the required changes and corrections are made, the plan shall be resubmitted to the District Engineer including two (2) sets of new blue line prints, the old check print and the original mylars. When all corrections or modifications to the plans are complete and all necessary supplemental data, including records, letters, maps, and payments, are on file in the District office, the plans will be approved. After mylars are signed, provide four (4) sets of approved drawings and the original mylars to the District Engineer.
- F. Other Permits. The Applicant, or his authorized representative, shall obtain the necessary permits or approvals relative to the construction work and, if required, a State Highways Utility Encroachment Permit and/or a City/County Encroachment/Excavation Permit. Any approvals or permits from utility companies, i.e. SDG&E, shall also be obtained by the Contractor.
- G. Notification for Inspection Services. The District Engineer shall be notified a minimum of five (5) working days prior to the commencement of construction and two (2) copies of water and sewer cut sheets are to be furnished to the District Engineer before work is started.
- H. Easements. The Applicant shall convey to the District Engineer easements and scaled plats covering property in which water and/or sewer facilities are constructed in all instances when the facilities are not located in dedicated streets. All easement boundaries shall be staked prior to waterline construction. All easements where District Facilities are installed shall be dedicated to FPUD. Access to and across the easement shall be kept clear and free of obstruction.
- I. Final Inspection. When all construction work has been completed and inspected per Article 1.05 of this section, the Applicant shall notify the District Engineer that the work is ready for final inspection. The District Engineer shall thereupon inspect the finished work and either approve it or reject it pending fulfillment of unsatisfied requirements. If the work is approved on final inspection, the Applicant shall record a Notice of Completion in a form

approved by the District. The notice of completion will only be issued after As-Builts and digital files are submitted and approved and all account balances are brought current.

- J. Quit Claim Deed of Facilities to the District. The Applicant shall sign and submit to the District Engineer three (3) copies of a Quit Claim Deed of facilities.
- K. Liens. The Applicant shall furnish to the District Engineer satisfactory proof (ordinarily in the form of a title company report) that no liens were filed against the project prior to the expiration of the lien report.
- L. Conclusion. Upon satisfaction of all the foregoing requirements, including performance of the terms and conditions of the agreement with the District, the District will accept and will thereafter own, operate, and maintain the facilities. The Contractor is responsible for faulty workmanship or materials for a period of one year after acceptance by the District (See Paragraph 1.06). A final letter will be sent to the Commissioner of Real Estate, upon the Applicant's request.

1.13 COMPLIANCE WITH LAWS AND REGULATIONS

- A. Compliance. The Applicant and the Contractor shall keep themselves informed of all laws, ordinances, and regulations in any manner affecting those employed on the work, or materials used in the work, or in any way affecting the conduct of the work, and of all orders and decrees of agencies having any jurisdiction or authority over the same. They shall at all times observe and comply with, and shall require all their agents, employees, contractors, and subcontractors to observe and comply with all such applicable laws, ordinances, regulations, orders, and decrees in effect or which may become effective before completion of the work.
- B. Taxes, Permits and Licenses. Unless otherwise explicitly provided in these specifications, all permits and licenses necessary from the City, County, State or Federal regulatory agencies for prosecution of the work shall be secured by the Applicant or his Contractor at no expense to the District, and he shall pay all taxes assessed against his equipment or property used in connection with the work. The Contractor shall be responsible for providing California Environmental Quality Act compliance and obtaining all permits necessary to complete the work. All work in existing streets will additionally require the contractor to obtain an encroachment permit from the jurisdictional agency.

1.14 CONTRACTOR'S RESPONSIBILITY

- A. Excavation Permit. Before any work is commenced, the Contractor shall secure and pay for the excavation permit required by the California Division of Occupational Health and Safety and shall furnish the District with a copy thereof prior to commencing any excavation.
- B. When working in a paved street the contractor shall perform all street work in accordance with San Diego County Standards.
- C. Insurance. The contractor will be required to furnish the District Engineer proof of full compliance with all insurance requirements.
- D. Protection of the Work. The Contractor shall take all necessary measures to protect the work and prevent accidents during the construction. He shall provide and maintain sufficient night lights, barricades, guards, temporary sidewalks, temporary bridges, danger

signals, watchmen, and necessary appliances and safeguards to properly safeguard life and property. He shall also protect all excavations, equipment, and materials with barricades and warning signs and signals so that the public will not be endangered. The construction price to be paid by the Applicant/Owner shall include all costs for safety and protection of the public and his employees.

- E. Traffic. The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to traffic and the Public, and he shall have under construction no greater amount of work than he can handle properly with due regard for the rights of the public. All traffic shall be permitted to pass through the work with as little delay and inconvenience as possible, unless otherwise authorized by the governing agency. All traffic control shall be as directed by the jurisdictional agency. No road or street closures shall be permitted without San Diego County approval.
- F. Convenience of Abutting Owners. Convenience of abutting owners shall be provided for as far as practicable. Convenient access to mailboxes, driveways, houses and buildings adjoining the work, as well as fire hydrants and valves, shall be maintained and temporary approaches to intersections shall be provided and kept in good condition. When a section of surfacing, pavement, or a structure has been completed, it shall be opened for use by traffic at the request of the District . In order that unnecessary delay to the traveling public may be avoided, the Contractor, when so ordered, shall provide competent flagmen whose sole duty shall consist of directing traffic either through or around the work. The Contractor shall notify all emergency and community services 48 hours in advance of construction or detours on public streets. These shall include but are not limited to: ambulance, fire, sheriff, mail, school districts, bus services, and the newspaper.
- G. Private Contract Surveying.
1. All surveying work shall be done under the direction and supervision of a Land Surveyor licensed by the State of California. Prior to beginning any phase of the survey work, the Contractor shall submit to the District Engineer, the Contractor's proposed plan for establishing lines and grades for control of the Project, including his plans and timetable for submitting data to the District Engineer during the course of the work.
 2. All survey data shall be recorded in accordance with standard methods approved by the District Engineer. All original filed notes, computations, and other records for the purposes of layout shall be recorded in field books, or other methods acceptable to the District Engineer. The Contractor, immediately upon completing and reducing notes for a portion of survey, shall furnish one (1) copies to the District Engineer for review purposes.
 3. With no exceptions and on all projects, "Cut Sheets" shall be forwarded to the District Engineer prior to staking and/or excavation. Any changes to the cut sheets shall be recorded as changes and a complete set of "Record Cut Sheets" shall be submitted to the District Engineer.
 4. The Contractor shall layout the project by establishing all lines and grades at the site and along the pipeline alignments necessary to control the project and shall be responsible for all measurements, that may be required for the execution of the project, to the location and limit marks and tolerances prescribed in these specifications or on the plans.

5. The Contractor shall place and establish such additional stakes and markers as may be necessary for control and guidance of his construction operations and as required by the District Engineer. Grade stakes shall include the following: sewer line designation; station; invert elevation; and cut distance. Contractor shall protect in place all grade stakes and hubs during construction. If the grade stakes are removed, damaged, or knocked down during construction the stakes shall be replaced by the Land Surveyor at the Contractor's expense.
6. Prior to establishing any base line and grade stakes, the Contractor shall have all utility lines located and marked in the field and shall have all rights-of-way cleared to grade, and ready for construction activities.
7. The Contractor shall provide surveyed elevations of all constructed manholes at the end of construction and prior to acceptance by the District Engineer. Such submittal shall be signed by a California licensed Land Surveyor. Variation from approved design elevations may be cause for rejection and rework.
8. The Contractor shall protect property and monumentation and if such monumentation is destroyed by his operations, the Contractor shall at no cost to the Owner, have the monumentation replaced in accordance with the laws of the State of California, and in particular in accordance with State Assembly Bill 1414 including recordation, as required by law.

1.15 MATERIALS AND WORKMANSHIP

- A. New Materials. Unless otherwise specified, all materials incorporated in the permanent work shall be new. Materials not otherwise designed by detailed specification shall be of the best commercial quality and suitable for the purpose intended.
- B. Workmanship. All workmanship shall be in conformance with the best trade practices. Particular attention shall be given to the appearance of exposed work. Any work or workmanship not conforming to the best practices shall be subject to rejection.

1.16 PROJECT CLEANUP

The Contractor shall at all times maintain an orderly job. Tools, rubbish, and materials shall be picked up and stored in a workmanship manner or disposed of at all times. The Contractor shall remove from the vicinity of the completed work all material, etc., belonging to him or used under his direction during construction. Surfaces shall be returned to a condition acceptable to the District. All excess material shall be disposed of as directed by the District or removed from the job site.

1.17 GUARANTEE

- A. Defective Materials or Workmanship. The Contractor and Applicant shall guarantee all parts of the work against defective materials or workmanship and against settlement of backfill and damage to resurfacing for a period of one (1) year from the date of its acceptance by the District, as indicated by the recording date of the Notice of Completion.
- B. Repair Work. When defective material or workmanship is discovered in the work, requiring repairs to be made under this guarantee, all such repair work shall commence by the Contractor or Applicant at his own expense within ten (10) days after written notice has been given to him by the District and be completed in as short a time as necessary. Should the Contractor or Applicant fail to begin repairs as directed within ten (10) days thereafter or

vigorously pursue the work, the District may make the necessary repairs and charge the Contractor or Applicant with the actual cost of all labor and materials required plus overhead. In emergencies demanding immediate attention, the District shall have the right to repair the defect or damage and charge the Contractor or Applicant with the actual cost of all labor and material required plus overhead. Emergencies shall be defined by the District Engineer, with no exceptions.

- C. Performance Bond. The Applicant shall furnish to the District, at no expense to the District, a bond for the performance of the foregoing guarantee in an amount of 100% of the construction cost of the total work which cannot be cancelled for a period of one (1) year.
- D. Labor and Materials Bond. The Applicant shall furnish to the District, at no expense to the District, a bond for the labor and materials of the foregoing guarantee in an amount of 100% of the construction cost of the total work which cannot be cancelled for a period of one year.
- E. Warranty Bond. Upon acceptance of the work, the Applicant shall furnish to the District, at no expense to the District, a bond for the warranty of the foregoing guarantee in an amount of 10% of the construction cost of the total work which cannot be cancelled for a period of one year.

1.18 REFERENCE TO PUBLICATIONS

Publications. Within these Standards reference is made to other publications. These other publications are made a part of the Standards whether in whole or in part as specified in each reference.

1.19 FEES

- A. Plan Checking Fees. Fees shall be paid as indicated in the FPUD Ordinances.
- B. Permits and Approvals.
 - 1. Prior to the construction of a water line and/or a sewer main and related appurtenances, the District shall collect from the Applicant the full cost of field inspection for the proposed construction. The fee shall be paid as indicated in the FPUD Administrative Code.
 - 2. The construction will not be allowed until the Applicant has obtained a County of San Diego Road Department Excavation Permit and/or State Highway Utility Encroachment Permit and the required set of prints have been submitted and approved by the District.
 - 3. Written permission from the property owner shall be obtained by the contractor to access or perform work on properties other than the proposed project. All property damage shall be the responsibility of the contractor. Contractor shall video or photograph the property prior to construction and submit this evidence to the District prior to commencement of work.

1.20 EASEMENTS

The District requires easement documents be submitted and recorded for each easement within a project. Easements indicated only on Tract or Parcel maps are not acceptable. The following procedure shall be followed in order to process private easements:

- A. Meet with the District to determine an acceptable location and width for the proposed easement. Minimum easement width is 30-feet. Easements are to be dedicated to FPUD. Utility easements are not allowed.
- B. Prepare and submit the originals of the following documents prior to District approval of the easement:
 - 2. Original Plat of the easement with a wet stamp and original signature from a California licensed Land Surveyor or licensed Civil who obtained a California license prior to January 1982.
 - 3. Original legal description of the easement with a wet stamp and original signature from a California licensed Land Surveyor or licensed Civil who obtained a California license prior to January 1982.

The District will prepare the easement document for signature by the legal owners. The owner's signature must be notarized by a California licensed notary. The District will not approve plans until the above items are submitted, reviewed and found to be recordable.

1.21 GENERAL NOTES AND REQUIREMENTS

- A. The Contractor shall notify the San Diego Gas and Electric Company; and Pacific Bell prior to starting work near company facilities and shall coordinate work with company representatives. For location of electric cable, gas piping and telephone cables and appurtenances, contact Underground Service Alert: 1 800-422-4133, 48 hours prior to start of construction.
- B. The Contractor shall notify the District Engineer at least five (5) days prior to starting work, so that inspection may be provided. Telephone No. (760) 728-1125.
- C. Separation requirements between water and sewer lines shall conform to California Department of Public Health (CDPH) "Water Works Standards".
- D. All work shall be in accordance with the most recent editions of the California Occupational and Health Administration (Cal-OSHA) - California Code of Regulations (CCR) Title 8, Standard Specifications for Public Works Construction, with supplements (APWA specifications), the San Diego Regional Standard Drawings and FPUD Standards Manual.
- E. Prior to construction of the water and/or sewer lines, the contractor shall expose the existing water and/or sewer lines where connections will occur and verify their elevation and location. No connection shall be done without District staff present. Approval by the District Engineer a proposed connection to a FPUD facility does not imply approval of the correctness of the elevation and/or location shown on the plans.
- F. Contractor shall not backfill trench until the District has inspected the pipe or structure and authorizes the trench to be backfilled. It shall be the Contractor's responsibility to provide accurate "record" drawings to the District immediately after construction.
- G. Approval by the District implies no permission other than that within the District's jurisdiction. All permits required by law shall be acquired by the applicant or his contractor.

Requirements of FPUD shall take precedence over requirements of other agencies only where FPUD requirements are more stringent.

- H. The Contractor shall obtain an excavation permit from the Division of Industrial Safety.
- I. Water pipe joints shall not be pulled at any angle greater than the maximum angle recommended by the pipe manufacturer.
- J. The proposed work shall be subordinated to any operations FPUD may conduct, and shall be coordinated with such operations as directed by the District Engineer.
- K. A preconstruction meeting shall occur prior to construction. Attendees shall include the District Engineer or his designate and the Contractor who will perform the work, and other governmental agencies and/or utility companies as necessary. "Cut-Sheets" shall be provided to the District prior to this meeting for review.
- L. Traffic Control shall be in accordance with the current State of California Manual of Traffic Controls. The contractor is responsible for all traffic control on the jobsite.
- M. The Contractor shall be responsible for implementing, administering and maintaining a confined space entry program.
- N. Pipe shall be handled (with straps, no chains) 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 process.
- O. Upon completion of construction, the Contractor shall hire a video company approved by the District to videotape the CML&C water mains. The District Engineer shall review said videotape for potential construction defects prior to acceptance of the project. Payment for all such services shall be borne by the Contractor.
- P. All District facilities shall have a minimum 5-foot clearance from other utilities. This pertains to all sections on all sheets herein.
- Q. All rough road grading shall be completed prior to construction of water and sewer facilities.
- R. The Design Engineer shall provide the District Engineer with As-Built photo mylars and electronic file in AutoCAD and TIF format.

1.22 WATER NOTES AND REQUIREMENTS

- A. Contractor shall furnish and install all facilities in accordance with FPUD Standard Specifications and Standard Drawings for water and sanitary sewer facilities (latest revision). The Specifications and Standard Drawings are available from the District. Contractor shall be in possession of FPUD Standards Manual on the job site at all times. Any construction or material not covered in FPUD Standards shall be approved by the District .

- B. All permits required by law shall be acquired by the applicant or their Contractor.
- C. Contractor shall conform to all Cal-OSHA, CCR, Title 8 safety requirements.
- D. Contractor shall provide written notification requesting a system shutdown for connections to existing system. Said notification shall be made to the District a minimum of two (2) weeks prior to said shutdown.
- E. 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.
- F. Contractor shall perform all encroachment permit work under San Diego County Department of Public Works , in accordance with all requirements of said removal, temporary pavement placement, permanent pavement placement (including base material) and temporary and permanent traffic striping.
- G. The water line shall be installed by a private contractor in accordance with FPU D Standards Manual. The Contractor shall be approved by the District Engineer.
- H. Minimum cover over the water main shall be 30-inches and the maximum cover of 36-inches- unless prior approval is obtained from the District Engineer.
- I. Wherever a water line encounters a storm drain pipe or other obstruction, and crossing over the obstruction will result in less than 30-inches of cover over the water line, it shall cross under the obstruction with 6-inches minimum clearance.
- J. Meter boxes shall be field located to clear driveways and located accurately on the As-Built drawings. The Contractor shall adjust meter boxes to sidewalk grade when sidewalks are poured.
- K. All water mains are District owned and maintained. The District maintains water service lines up to and including meter and back-flow if required. The fire hydrants are owned by the North County Fire Protection District.
- L. Contractor to adjust all valve covers, fire hydrants, meter boxes, etc., to grade as directed by the District.
- M. All new fire hydrants to be approved by the North County Fire Protection District .
- N. Laying direction of water main shall be in a general uphill direction.
- O. The location of air valves and blow-offs to be verified by the District Engineer in the field.
- P. All valves shall have access piping that consists of SDR35 or C900 and the 1208N lid covers. (FPU D Standard Drawings W-19 and W-20).
- Q. Water meter service laterals shall be 24 inches below finish ground level. Angle stop shall terminate 9-inches below finish ground level with location stamped with a "W" in curb. All others to terminate above ground.

- R. The Contractor shall install suitable thrust blocks at selected vertical and/or horizontal change of direction in accordance with FPUD Standards, whether or not specifically called for or shown on the Plan.
- S. Contractor to make connections to existing mains only after successful pressure testing and disinfection of new facilities as authorized by the District Engineer.
- T. All materials, testing and inspection of pipe shall be in conformity with the requirements of FPUD, and the American Water Works Association (AWWA) Standards. County, and/or the AWWA Specifications will be cause for rejection.
- U. All welded steel pipe used shall be cement mortar lined and coated, with a minimum thickness of 3/16" and fully welded joints and hand holes, unless noted otherwise.
- V. All steel bends and fittings shall be cement mortal lined and coated and shall be shop fabricated per AWWA C-208-(latest). 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 made to existing ACP, DIP, or PVC pipelines shall utilize a brass double service strap connection.
- W. For hydro-static testing purposes, all water pipes shall be 50 psi above the class rating of the pipe at the lowest point in the section being tested; and shall be at least equal to the design class of the pipe at the highest point in the line.
- X. The minimum requirements of the pipeline trench shall be per FPUD Standard Drawing W-3.
- Y. Pipelines and appurtenances shall be tested, disinfected, and dechlorinated per FPUD Standards Section 15041, Department of Public Health, and/or any other agency having jurisdiction over the work.
- Z. Contractor shall uncover locations of connections prior to starting installations to ensure conformance with lines and grades shown on these plans. Any deviation from the plans must be approved by the District prior to construction.
- AA. The existence and location of water facilities as shown on the plans were obtained from available records. To the best of our knowledge, the existing water facilities are as shown on the plans. The District shall not be held responsible for any error in the location and elevation of the existing water facilities. The Contractor is required to take precautionary measures to protect any existing facility shown hereon and any other which is not of record or not shown on these plans.
- BB. Location and elevations of improvements to be done shall be confirmed by field measurements prior to construction of new work. The Contractor will make exploratory excavations and locate existing underground facilities sufficiently ahead of construction to permit revisions to plans if revisions are necessary because of actual location of existing facilities.

- CC. Call the District five (5) working days prior to starting construction, and two (2) weeks if shutdown is required. The District shall be notified at least two (2) working days prior to any inspection. To arrange for inspection, call (760) 728-1125
- DD. Pipe deflections for short radius curves and angle points shall normally be accomplished by means of standard fittings, the locations of which shall be detailed on the plans.
- EE. All water used on a construction project must be paid for and will be metered. This includes water for loading of new waterlines, flushing of lines, pressure testing, etc. Citations will be issued to parties taking water from unmetered facilities. A construction water meter may be obtained from the District.
- FF. Proposed water system improvements are located within the _____ pressure zone (HWL = _____ FT. / FL = _____ FT.).
- GG. The Contractor shall install an isolation kit at points of connection of dissimilar material.
- HH. Water meter abandonment/removal the service lateral at the mainline must be cut and a cap or plug must be installed into the corporation valve, encase abandoned corporation valve in concrete and remove the lateral from the corporation to the angle stop. Current inspection fees will be required. Shutdown fees may be required.

1.23 SEWER NOTES AND REQUIREMENTS

- A. The sewer line shall be installed by a private contractor in accordance with FPUD Standards, Plans and Specifications. The contractor shall be approved by the District Engineer.
- B. Sewer mains deeper than fifteen feet deep shall be DIP.
- C.No vertical or horizontal bends are allowed between manholes.
- D.Type of sewer pipe and appurtenances used shall be in accordance with the Approved Materials List.
- E. Grading over sewer mains shall be done in such a manner as to prevent the ponds of water.
- F. The top of all manholes located in pavement shall be raised to pavement grade after streets are paved. All manholes in unimproved areas shall be 6-inches above the ground surface. Manholes located within DG roads shall have an 8-inch PCC collar and rest 3-inches above the ground surface.
- G. House connections, wyes and laterals shall be installed per FPUD Standard Drawings. Wyes and laterals shall be maintained by the property owner. The property owner is responsible for the lateral up to connection to the main per FPUD Standard Drawings S-8 and S-9.

- H. The minimum class bedding for PVC and DIP sewer shall be in accordance with FPUD Standard Drawings for Type "C" rock envelope.
- I. The Contractor shall successfully perform one (1) air test on all sewer lines, in accordance with the test procedures outlined in Green Book Section 306-1.4.4, Amendment 306-1.4.4.1, and the Low Pressure Air Test for Sanitary Sewers as published by the National Clay Pipe Institute. All necessary test equipment shall be furnished by the Contractor and the test shall be made only after the line has been properly installed including any necessary test fittings, and backfilled. The Contractor shall conduct the air test at no cost to the District.
- J. Sewer laterals crossing existing curb and gutter shall be backfilled with 1-sack cement, sand slurry backfill. The location shall be stamped with a "S" in curb. No laterals are allowed in driveways unless approved.
- K. Connections to existing pipelines shall only be made with the District Engineer present. Test plugs shall only be removed upon direction of the District .
- L. Should modification and/or reconstruction (including raising manholes to grade) of an existing manhole be required, prior to the removal of the frame of 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.
- M. Upon completion of construction, the District, as part of the inspection, will videotape the sewer mains. The District Engineer shall review said videotape for potential construction defects prior to acceptance of the project.
- N. New sewer mains shall remain plugged and/or disconnected until the District Engineer authorizes its use.
- O. Prior to acceptance of any sewer line by the District, all lines shall be flushed clear using "Wayne Ball" and mandrel tested.

END OF SECTION