SECTION 01 11 00

GENERAL REQUIREMENTS

PART 1 – GENERAL

1.01 MASTER PLAN

A. A master plan shall be developed for potable water piping network to serve the entire built-out development area.

B. For each phase of the development, a separate plan shall be developed to serve the development within the phase. Plans developed for phases shall be consistent with the master plan.

1.02 DESIGN WATER PRESSURE & FLOW

A. All potable water mains shall be designed to water pressure and flow for maximum domestic daily demand plus fire flow requirements. Fire flow and residual pressure shall be as required by SFFD.

1.03 REFERENCE STANDARDS

A. Standard Specifications of the City and County of San Francisco (the City), Department of Public Works (DPW), Bureau of Engineering (BOE), dated July, 1986. Also referred to as "City Standard Specifications."

B. Standard Plans of the City, DPW, BOE, dated September 1987. Also referred to as "City Standard Plans."

C. DPW Order No. 187,005 "Regulations for Excavations and Restoring Streets in San Francisco" approved in 2018.

D. American Water Works Association (AWWA) Standards, Latest Revision.

E. California Code of Regulations, Title 22, CA DPH

F. SFPUC (CDD) Standard Plans and Specifications

G. SFPUC Rules and Regulations Governing Water Service to Customers

H. SFPUC Asset Protection Standards, May 2017 or Latest Revision.

1.04 SUBMITTALS

A. The San Francisco Public Utilities Commission (SFPUC) requires that all reports, plans and specifications for a public water system be submitted at least 30 days prior to the date when their approval is desired.

B. Documents submitted for formal approval must include, but not be limited to:

1. Summary of the basis of design and hydraulic analysis report,

2. Design criteria and selection of materials and installation methods for water mains, isolation valves, hydrants, air valves, meters and blow-off valves, flow meters, backflow preventers, cathodic protection, restraint devices, separation between water mains, sanitary and storm sewers, cross-connections and interconnections, water services and plumbing, and service meters,

3. Operation requirements, where applicable,

4. General layout showing the extent of the proposed system,

5. Detailed plans and specifications by a Professional Engineer licensed in the State of California,

6. Baseline schedule with monthly update,

7. Documentation stating that the developer is committed to providing as-built certification of the project in drawings stamped by a registered professional engineer acting as the Engineer of Record for the development, and

8. Hydrostatic test plan.

C. The developer is responsible to obtain all other necessary permits for construction, waste discharges, etc., required by other federal, state, or local agencies. No approval for construction can be issued until final, complete, detailed plans and specifications have been submitted to the reviewing authority and found to be satisfactory. Three sets of the final plans and specifications must be submitted for review and approval. SFPUC- CDD will review and provide comments within 30 days of receiving the set for review. Incomplete drawing and specification sets will be returned without review. An approved set stamped by CDD Engineering Department will be returned to the applicant.

D. For progress review plans: Three full-sized sets of submittals must be delivered to the SFPUC-CDD. Two (2) hard copies shall be mailed to

City Distribution Division
ATTN: Engineering Department
1990 Newcomb Avenue
San Francisco, CA 94124

One (1) pdf electronic copy must also be transmitted to cddengineering@sfwater.org.

1.05 INSPECTION

All work performed by Contractor will be subject to inspection by SFPUC-CDD. Work or material that does not conform to the specifications will be rejected at any stage of construction. The Contractor shall be responsible for additional costs incurred for subsequent inspection of the new work.

1.06 CONTRACTOR'S LICENSE

An active Class "A" California Contractor License is required to perform the water work. Each subcontractor must possess appropriate licenses for work each subcontractor will be performing.

1.07 PERMITS

Contractor shall obtain and pay for all required permits, inspections and service requests to start and complete work.

1.08 WARRANTIES

A. The Project Developer's Contractor shall warrant that work performed is free of any defect of equipment, equipment system, material, installation, design furnished, or workmanship furnished by Contractor, and/or Contractor's subcontractors, suppliers, manufacturers and design professionals for 24 months following the date of the Certification of Acceptance issued by SFPUC-CDD.

B. The Project Developer's Contractor shall provide warranty documents for each equipment and each equipment system, whether the entity is a supplier (which assembles various manufactured parts and then provides a warranty for the equipment system); a manufacturer (which may subcontract a certain part(s) but provides a warranty for the entire equipment system furnished or which provides a warranty for each individual piece of equipment furnished); or the Contractor itself.

C. The Warranty material shall be submitted in commercial quality, 8-1/2 inch x 11 inch three-ring side binders with hardback, cleanable, plastic covers. The Project Developer's Contractor shall label the cover of each binder with typed or printed title WARRANTIES, with title of the Project; name, address and telephone number of Contractor and name of Contractor's responsible principal employee.

D. The Project Developer's Contractor shall provide a neatly typed Warranty Table of Contents as shown in the sample form provided in this Section.

E. The required guarantees/warranties executed by the Project Developer's Contractor and its subcontractor, installer, supplier, or manufacturer (if applicable) responsible for that portion of the work are subject to the City's verification that the documents are in proper form and contain complete information. The Project Developer's Contractor shall correct and resubmit deficient guarantees/warranties before Final Completion of the Project.

F. Warranty Table of Contents Sample Form

Specification Section	Description of Equipment or Equipment System	Guarantor	Guarantee / Warranty Duration	Name of Equipment or Equipment System Manufacturer

G. For the Entire Project, the Project Developer's Contractor shall submit a certificate covering the Guarantee to Repair Period as follows:

GUARANTEE/WARRANTY FOR SFPUC
Project Title and Description: (Provide title, location and general description of the project.)

We hereby guarantee/warrant that the work of this Contract has been completed in accordance with the requirements of all applicable Contract Documents.

We agree to repair or replace any or all of our Work that may prove to be defective in its workmanship, material, or Contractor-furnished design within a period of twenty-four (24) months from the date of issuance of the Certification of Acceptance by SFPUC-CDD of the above named Project. We also agree to repair or replace any adjacent work which may be damaged as a result of the defective work or as a result of repairing or replacing defective work. We agree to repair any and all damages resulting from defective work without any expense to the City, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of our failure to comply with the above mentioned conditions within ten (10) days after being notified in writing by the City, we collectively or separately do hereby authorize the City to proceed to have such defective work repaired or replaced and made good at our expense, and we will honor and pay the costs and charges therefore upon demand.

Signed_____ Date _____

Contractor Name: _____
Address:_____
License No. _____

Final Completion of the work was granted by the City on _____ (*date*)

Signed: _____ Date:_____
(City Representative)

H. The Project Developer's Contractor shall submit Supplier/Manufacturer/Contractor Warranties for Specific Items of Equipment or Equipment Systems in accordance with the quality and performance standards detailed in Technical Specifications

(*Supplier/Manufacturer/Contractor Letterhead*)

GUARANTEE/WARRANTY FOR EQUIPMENT / EQUIPMENT SYSTEM INSTALLED BY CONTRACTOR OR SUBCONTRACTOR

_____ (*Name of Supplier or Manufacturer or Contractor*), agrees to repair defects in or furnish and install replacement of the following equipment / equipment system if found to be defective.

Owner: San Francisco Public Utilities Commission, City and County of San Francisco

Description of Equipment / Equipment System:

_____

_____

_____(Include Manufacturer name, model number, serial number, and such other information as needed to positively identify the equipment / equipment system.)

Location of Equipment / Equipment System:

_____

Installed under: (Provide title, location and general description of the project.)

Date Installed:_____

Partial Utilization Date:_____

Date of Contract Final Completion:_____

This guarantee/warranty is effective upon date shown herein under, and shall remain effective for _____ years thereafter. The Supplier/Manufacturer/Contractor agrees to the warranty conditions as specified in the hereinabove referenced Contract.

Name and address of Supplier/Manufacturer (if Contractor is Guarantor, skip 4 lines):

_____

Signed by Supplier's / Manufacturer's Agent:

_____

Date: _____

Title _____

Name of Contractor: _____

Signed By: _____ Title:_____ Date:

_____

Acknowledged by City Representative:_____

Date:_____

PART 2 – PRODUCTS

Ductile iron, copper and brass products listed hereinafter are currently used by SFPUC-CDD for the installation of water mains and services in soil commonly found in San Francisco. Refer to latest SFPUC material term contracts for approved makes and models.

2.01 DISTRIBUTION AND FEEDER/TRANSMISSION MAINS

A. Minimum size of distribution water mains shall be 8 inches. Pipe diameters of 10 and 14 inches shall not be used.

B. SFPUC-CDD uses ductile iron pipe, Class 53, double cement lined (inside), coated (outside) with a layer of arc-sprayed zinc coating.

C. For 8-inch distribution mains outside of liquefaction-susceptible areas: TYTON® joint with FIELD LOK®gaskets or approved equal shall be used.

D. For mains larger than 8-inch diameter: Flex-Ring® joint pipe and fittings with Fastite® gaskets or TR FLEX® joint pipe and fittings with TYTON® gaskets shall be used

2.02 SERVICE PIPES

A. The allowable diameters for service pipes are 1-, 2-, 4-, 6-, 8-, and 12-inches. Pipe diameters of 3 inches and less than 1-inch shall not be used.

B. Service pipes larger than 2-inch shall be ductile iron pipe.

C. 2-inch and smaller service pipes shall be copper tubing type K, soft or hard. Fittings shall be made of bronze or brass, in conformance with AWWA C-800.

2.03 GATE VALVES

A. 12-inch and smaller gate valves shall be TYTON® by TYTON® ends, with FIELD LOK® gaskets, resilient seated, non-rising stem, right turn open and nut operated. Additional restraint shall be provided for gate valves off tee branches as per Standard Plan CDD-LP-006.

B. 16-inch gate valves shall be mechanical joint ends restrained with EBAA megalug mechanical joint glands, resilient seated, non-rising stem, right turn open and nut operated.

C. Flanged end gate valves shall be full-face flange by flange manufactured in accordance with ANSI B16.1, 125 lb. class or ANSI B16.2, 250 lb. class, resilient seated, non-rising stem, right turn open and nut operated.

2.04 DUCTILE IRON FITTINGS

A. SFPUC-CDD uses ductile iron fittings to connect ductile iron pipes.

B. Ductile iron fittings shall conform to the latest revision of ANSI/AWWA C110/A21.10. Fittings shall be TYTON® by TYTON® ends with FIELD LOK® gaskets for 8-inch and smaller mains, and Flex-Ring® with Fastite® gasket or TR Flex with TYTON® gaskets for larger than 8-inch mains.

C. The ductile iron fittings shall be cement-mortar lined (inside) conforming to ANSI/ASTM C104/A21 and shall be double the standard thickness and zinc-rich paint coating (outside).

2.05 V-BIO POLYETHYLENE ENCASEMENT

A. All pipes and fittings, including service laterals, shall be encased in an 8 mil, low density V-bio polyethylene casing in accordance with ANSI/AWWA C105/A21.5. The tape to secure polyethylene encasement over pipe barrels shall be blue polyethylene adhesive tape.

2.06 JOINT RESTRAINT DEVICES

A. Joint restraint devices shall be per SFPUC-CDD standard drawings. Bolts, nuts, tie-rods, lugs and bands shall be stainless steel type 304 or 316.

2.07 AIR OR BLOW-OFF VALVE

A. 2-inch air valves and blow-off valves shall be manual type and the assembly shall be as shown in SFPUC-CDD Standard Plans CDD-LP-003, latest revision. 4-, 6- and 8- inch blow offs shall be installed per CDD-LP-003. 4-, 6- and 8- inch automatic air-relief and vacuum break valves (ARVB) must be installed by SFPUC-CDD personnel. The ARVB enclosure shall be installed by the contractor per Standard Plan CDD-LP-255 and -256.

2.08 WATER METER BOXES, VAULTS, AND COVERS

A. Meter boxes and covers for standard 1- and 2-inch (domestic) services shall be made of polyethylene and polymer concrete. Meter vaults for services larger than 2-inch shall be fiberglass vaults with torsion assisted frame and cover. Meter boxes, vaults and covers shall be manufactured by Armorcast or approved equivalent and shall be installed as shown in SFPUC-CDD Standard Plans, latest revision

2.09 HYDRANT, HYDRANT BURY, BREAK AWAY

A. Low pressure hydrant, hydrant bury and break away shall be installed as shown in Standard Plan CDD-LP-004, latest revision. Hydrant shall be Long Beach Iron Works Model 621, with valve assembly specified in SFFD specifications for low pressure hydrants. Hydrants shall be painted as required by SFFD.

2.10 BACKFLOW PREVENTER

Type of backflow preventer shall be determined by the SFPUC- Water Quality Division.

END OF DOCUMENT