Revision #	Chapter/Section	Revision Description	Date
23-01	Section 2.2.5 Disconnection of Service	Incorporates ESHB 1329 passed in the 2023 Legislative Session which prevents utility shutoffs for nonpayment during extreme heat.	7/20/2023
23-02	Section 2.2.6 Reconnection	Incorporates ESHB 1329 passed in the 2023 Legislative Session which prevents utility shutoffs for nonpayment during extreme heat.	7/20/2023
23-03	Section 2.3.2 Requirement of Adjacency to District Main	Adds provision allowing or latecomer agreement.	7/19/2023
23-04	Inserts new Section 2.3.8 Accessory Dwelling Unit Policy	New section describing policies for Accessory Dwelling Units - all sections after this section were renumbered.	7/19/2023
23-05	Section 2.3.19 Interruption of Service	Policy was amended to reflect current practice of not working on customer side of service connection	7/19/2023
23-06	New Section 2.3.22 District Cyber Security Response Plan	Adds a reference to the plan for responding to cyber security breaches.	7/19/2023
23-07	Appendix A V - Standard Drawings	Updated drawings	7/19/2023
23-08	Appendix B I - Rates, Fees, amd Charges	Updated 2023 Rates	7/19/2023
23-09	Appendix B III - Equipment and Employee Rate Schedule	Updated 2023 Rates	7/19/2023
23-10	Appendix B V - Engineering Fees	Updated 2023 Rates	7/19/2023
23-11	Appendix C - Header	Adds new Appendix for Response Plan	7/19/2023
23-12	Appendix C I - Cyber Security Incident Response Plan	Adds Cyber Security Incident Response Plan	7/19/2023
23-13	Appendix C II - Cyber Security Plan Risk Assessment	Adds Risk Assessment completed by staff.	7/19/2023

POLICIES AND PROCEDURES MANUAL

FOR

ADMINISTRATION OF WATER SERVICES

PUBLIC UTILITY DISTRICT NO. 1
OF THURSTON COUNTY

Section 1
Introduction

1.1 Goal

Public Utility District No. 1 of Thurston County (hereinafter referred to as Thurston PUD or the District) has developed this Water Policy Manual to provide a helpful guide to water services for customers, the building trades, and the employees and representatives of the District. The District's overall goal is to provide safe and reliable service to all its water customers at the most economical cost possible. In pursuing this goal, the District's guiding principles include the following:

(a) The District will endeavor to provide potable drinking water at flows and pressures meeting applicable regulations to all customers of the District.

(b) The priorities of the District are established as follows: first, emergencies; second, maintenance and operations; and third, new service installations.

(c) As an ethic, water conservation will be incorporated in all practices where it is reasonably applicable and cost-effective. When necessary, the District may require conservation practices be utilized to preserve available resources and the environment.

(d) The District shall endeavor to provide all of its customers with high quality, courteous service in all of its activities.

1.2 Purpose

This manual outlines the policies and procedures to be applied by District staff in providing water service to individual properties served by the District, managing extension and improvement of the District's water distribution facilities, and providing service to satellite water systems owned or operated by the District. Nothing in this Manual shall be interpreted to apply to District actions with regard to provisions of electrical or other utility services besides water. A copy of this document shall be available for the public during regular District business hours at the District's Headquarters, located at 1230 Ruddell Rd SE, Lacey, WA 98503.

1.3 Related Policies

The District's function is not to plan land uses within its boundaries, but to respond to land uses planned in the District's service areas under the applicable local land use plan. The District's facilities, their encumbrances

and their impact on the community will not be used as tools for implementing changes in the character or timing of planned land uses.

The District's service area will comply with the Washington State Department of Health (DOH) water system planning requirements. Water system plans forecast service area needs over a 20-year time frame. The District's capital improvement program and incremental extensions and improvements to the District's system must be consistent with the plan, as updated from time to time, whether they are carried out by the District or a third party.

Decisions on system extension, pipeline capacity, looping, etc., will be guided by the plan. The District's General Manager will, at his/her discretion, determine the extent to which capital improvements are for the purposes of transmission or other general system needs; which are for the purposes of distribution within an area of the District; and which are for the sole benefit of a single subdivision or development. When new developments are proposed, the District may require the developer to dedicate permanent utility easements for installation of water pipelines and other facilities in order to facilitate construction of the overall District system in accordance with the plan. The District's share of the cost of new facilities will be determined by this manual and by the General Manager.

1.4 Application of Policies and Procedures

In specific instances, the General Manager may, at his/her discretion, waive or modify the application of the policies and procedures described herein, including the application of standard fees and charges, provided that such waiver or modification allows for more effective or efficient achievement of District goals, objectives, and overall policies.

In cases where such waiver or modification involves a significant cost, or where its relationship to existing policies is not clear, the General Manager must report any waivers or modifications to the Board of Commissioners within the next two regularly scheduled Commission meetings.

If authorized by the Board of Commissioners, specific fees and charges may be adjusted for inflation automatically on an annual basis. Other adjustments to the magnitude of standard fees and charges may be made only upon the authorization by the Board of Commissioners.

1.5 Revision

These policies and procedures cancel and supersede all previous service policies. They may be revised, supplemented or otherwise modified only by action of the Thurston PUD Board of Commissioners; in an emergency situation, the General Manager may make such reasonable modifications as he/she deems necessary; provided, however, such modifications are

reported to and ratified by the Commission within the next two regularly scheduled Commission meetings.

1.6 Conflict

In case of conflict between this manual and the provisions of any resolution of the Board of Commissioners, rate schedule, or special contract, the provisions of the resolution, rate schedule, or special contract shall apply.

1.7 Saving Clause

If any clause, sentence, paragraph, section, or portion of these policies and procedures, for any reason shall be ruled invalid by a court of competent jurisdiction, such judgment shall not affect, impair, or invalidate the remainder.

1.8 Definitions

The following terms wherever used in this Manual, the District's rate schedules, and in any application or agreement for water service, shall have the following meanings, unless otherwise clearly stated:

1.8.1 Customer

Any individual person, firm, or organization who purchases water service, or is legally responsible for the purchase or payment for water service, at one or more locations from a water utility system under one or more rate classifications, contracts, or schedules.

1.8.2 District

Thurston PUD or Public Utility District No. 1 of Thurston County

1.8.3 Equivalent Residential Unit ("ERU")

The volume of water demand and use deemed by the District to be characteristic of a single-family residential unit, which shall equal an average water consumption of 1,000 cubic feet (one cubic foot is equal to 7.48 gallons) per month and 33.3 cubic feet per day to determine General Facilities Charges for new connections.

1.8.4 General Facilities Charge

One-time connection charge paid by the property owner seeking to connect to a water system increasing the size or number of connections. The purpose of the charge is to promote equity between new and existing customers. Equity is served by providing a means

for new customers to share in the capital costs incurred to support their addition to the system.

1.8.5 Interim Connection

Connection to a District main, for the purposes of establishing interim service.

1.8.6 Interim Water Service

Water service provided on a long-term basis to a property that does not abut a District main. See Section 3.6.

1.8.7 New Customer

Any customer

- connecting to the District's water system where no connection previously existed,
- requesting additional connections to such system, or
- adding to the number of "equivalent residential units" served through an existing water service connection to the District's water system.

1.8.8 Point of Delivery

The location, usually on the customer's premises and adjacent to the District's meter (or other agreed point), where the customer's water pipe is connected to the District's supply. Also called **Delivery Point**.

1.8.9 Standard Specifications

Appendix A to this manual, setting forth all the District's standards and specifications for design and construction of water facilities.

1.8.10 Temporary Water Service

Metered water service provided on a short-term, temporary basis to a fixed site (e.g., a construction site). This includes water service supplied through a District main, or a fire hydrant designated by the District and equipped with a separate valve installed for this purpose. However, it does not include intermittent, unmetered use of fire hydrants to fill mobile water tanks; or short-duration use of fire hydrants at fixed sites.

1.8.11 Water Consumption

Water delivered at the point of delivery, typically measured in cubic feet.

1.8.12 Water Availability Letter

Letter issued by the District that owners must receive before service is provided to new connections; this letter provides the owner with the details needed to become a customer of the District.

1.8.13 Water Main Extension

Any District-owned water main which, at the time of installation, is installed adjacent to, or to serve, properties which were not previously adjacent to, or served by, a District-owned water main.

1.8.14 Water Service

The availability of water at the point of delivery for use by the customer, irrespective of whether water is actually used.

Section 2
General Terms, Conditions and Policies for Water Service

2.1 GENERAL PROVISION

2.1.1 Scope

Section 2 of this Water Policy Manual provides the General Terms, Conditions, and Policies for furnishing and receiving water service. These terms, conditions and policies are a part of all oral or written proposals, offers, agreements, and contracts for furnishing and receiving water service relating to the District. A copy of this document shall be available for the public during regular District business hours at the District's Headquarters, located at 1230 Ruddell Rd SE, Lacey, WA 98503.

2.2 INITIATING and TERMINATING SERVICE

2.2.1 Service Application or Contract

(a) Each New Customer desiring water service must complete and submit a signed application prior to service connection.

A completed application for water service may be submitted in person or mailed to the District's Headquarters, located at 1230 Ruddell Rd SE, Lacey, WA 98503. Applications may also be emailed to Customer Service at PUDCustomerService@ThurstonPUD.org, or faxed to (360) 357-1172.

(b) The District may, in some circumstances, accept an application for service from a second party (e.g., renters, tenants, etc.), with the understanding that the first party will sign an application within fifteen (15) days.

(c) At the time of application, all New Customers shall be informed of connection fees and of any additional charges for services after regular service hours. Any claimed or actual failure to inform shall not, however, relieve the new customer of any such fees or charges.

(d) Large industrial or commercial contracts may be written on a special form and shall contain such provisions and stipulations as may be necessary or desirable to protect the interests of both the District and customer. A special meeting, which the requestor will pay for, may be required.

2.2.2 Agreement

Acceptance of service is subject to current District policies, rates, service requirements and regulations, with or without a written application or contract.

2.2.3 Owner/Agent Agreement

Property owners renting or leasing their properties to others are responsible for all water service charges incurred by the properties. The property owners can enter into an agreement with the District whereby the District will bill the tenant directly for the water service charges during their occupancy. Upon execution of this agreement, the tenant must apply for service with the District and pay all applicable fees and deposits. This direct bill agreement does not remove the ultimate responsibility of the property owner for unpaid utility bills for the service address.

2.2.4 Initiation of Service

(a) Service will be initiated when the customer has met all District requirements and submitted:

- Proper application and a demonstration of credit sufficient for reasonable assurance that service bills and fees will be paid.
- Valid service and mailing address(es).
- Payments as required on outstanding accounts.
- Payment of applicable deposits and other fees.

(b) When new installations, conversions or upgrades of District facilities are required to provide service, requirements will vary as follows:

Newly constructed or upgraded services must first request a Water Availability Letter from the District. In addition to the above requirements, the District also requires appropriate evidence of state, city or county plumbing inspection.

The District may require the presence of a responsible person at the time the water is turned on. If required, and arrangements are made to have such person present at a predetermined time, and such person is not present, the District may charge a fee comparable with that listed in the District's Schedule of Charges and Fees to arrange a subsequent time to

turn on the water. Only authorized District personnel may initiate a water service connection.

2.2.5 Disconnection of Service

(a) Service may be disconnected for good cause, including (but not limited to):

- Violation of service requirements or regulations, rate schedules, contracts or plumbing codes.
- Failure to pay fees or deposits.
- Theft or illegal diversion of water.
- Customer system leaks of which the District becomes aware and which causes or may result in significant water loss and/or property damage.
- No one assumes responsibility for service.
- Failure to pay water charges when due.

The District may also refuse or disconnect water service that is used in a manner that can adversely affect any service provided to other customers as further described in Sections 2.3.5 and 2.3.16.

(b) Disconnection notices will be mailed to all affected customers.

The nature of the disconnect notice and the period of time before disconnection shall be reasonable under the particular circumstances with special consideration for the potential dangers to life and property.

Disconnections of utility service will be done meeting all of the requirements of ESHB *1329 An Act Relating to Preventing Utility Shutoffs for Nonpayment During Extreme Heat*, passed in the 2023 Legislative Session as codified at RCW 54.16.285.

(c) The termination of service for any cause shall not release the customer from the obligation to pay for water received, fees owed, and charges specified in this manual or in any existing contract.

(d) Service will not normally be disconnected without a disconnect notice for nonpayment of bills. Exceptions may include a customer's failure to pay an applicable deposit, a customer's failure to contact the District

following tenant move-out, or a customer's failure to provide a replacement payment in the event of a returned payment.

(e) For disconnections under the appeal process, the District reserves the right to terminate any service by locking meter isolation valves or physical disconnection as the District may choose.

2.2.6 Reconnection

When service is disconnected for noncompliance with service requirements or regulations, nonpayment or fraudulent use, the service will not be reconnected until the situation is corrected to the District's satisfaction.

Before reconnection, the customer will be advised of current fees and charges for service restoration.

Reconnections of utility service will be done meeting all of the requirements of ESHB *1329, An Act Relating to Preventing Utility Shutoffs for Nonpayment During Extreme Heat*, passed in the 2023 Legislative Session as codified at RCW 54.16.285.

Only authorized District personnel may initiate and turn on services to a water service connection. Appropriate charges for turning on or reconnecting service will be assessed as applicable.

2.2.7 Termination of Service by a Customer

When a change of occupancy or legal responsibility takes place for water service to any connection served by the District, the customer may terminate service by notification in person, by telephone, or in writing to the District within a reasonable time prior to such change, unless otherwise noted by a special contract or agreement with the District. The outgoing customer may be held responsible for all services supplied up to the date notification is received by the District. The District reserves the right to read the meter(s) for a final bill within a one-week period from the date of notification to terminate, and such reading(s) may be adjusted for consumption, if any, used by subsequent customer(s). The final reading may be estimated by the District. Under some circumstances the District may require written authorization from the customer paying for water service before discontinuing such water service.

2.3 SERVICE and EQUIPMENT REQUIREMENTS

2.3.1 Customer Facilities

(a) Plumbing and Equipment: The customer shall install, own and maintain all plumbing and equipment beyond the delivery point, excluding meters and special facilities installed or furnished by the District. The customer's plumbing is to conform to:

- District service requirements and regulations.
- Municipal, county and state requirements.
- Accepted modern standards as set forth in the Uniform Plumbing Code.

2.3.2 Requirement of Adjacency to District Main

In order to be served by the District's water system, the customer's property must lie adjacent to a District water main. If the customer desires water service, and if the customer's property lies remote from a suitable District main, the customer shall be required to extend the main through or past his/her property and pay for all costs associated with the main extension. A latecomer agreement may be initiated to help reimburse costs, if approved by the General Manager.

The General Manager, or his/her designee, shall have the authority to waive the requirement of adjacency to a District main.

2.3.3 Placement of Service Equipment

(a) It is preferable that water services not be over 300 feet from the meter to the point of use in order to maintain adequate pressure. Services over 300 feet in length are permitted; however, the District will not guarantee adequate pressure for these services.

(b) The customer's service pipe shall be extended eighteen (18) inches beyond the meter. The water service pipe shall be installed at a location mutually agreeable between the District and customer. The District will install the meter, meter box, and tailpiece assembly.

Private service lines shall not cross other parcels, nor shall they be constructed in public rights-of-way or in private rights-of-way solely dedicated to another property without the express approval of the General Manager, or his/her designee.

Evidence of permission to make such crossings shall be provided to the District at the time application.

District and all necessary permits, easements or other authorization shall be obtained at customer expense.

2.3.4 Responsibility for Maintenance

The District is responsible for maintaining its facilities and equipment up to and including the point of delivery. The customer owns and maintains equipment beyond the point of delivery. (See Subsection 1.8.11)

2.3.5 Safeguard of District Facilities

The customer shall provide space for and exercise proper care to protect any of the District's facilities on the customer's premises. This shall include meters and other facilities installed by and remaining on the property of the District. Any person knowingly and maliciously damaging or tampering with District meters and other equipment; reconnecting a previously disconnected meter for the purpose of restoring utility service; tampering with any District equipment with the intent of defrauding; or illegally diverting utility service may be prosecuted by the District in accordance with Chapter 9A.56 RCW. In addition, in the event of unauthorized connection, and loss or damage to the District's property, the District may collect from the customer the charge for estimated unmetered water, the cost of facility repairs and replacement, administrative costs, attorneys' fees, a tampering fee, and other costs authorized or awarded pursuant to RCW 80.28.240. The District shall also bill the customer for reasonable administrative costs that shall include all time and expense by District personnel to resolve the situation. This charge will be in addition to the charge for estimated unmetered water.

(a) The District may refuse or disconnect service to customers when conditions are known by the District to be defective or out of compliance with codes, regulations or requirements. The District is not liable for loss or damage to persons or property resulting from defects or negligence:

- By the customer beyond the point of delivery, or
- In the customer's installation, facilities, or equipment.

(b) When an individual's action might endanger District property or interrupt water service, arrangements can be made in advance for a crew member or serviceman to standby. Cost for this service may be charged to the responsible party.

Should loss or damage occur to District property, the responsible party may be charged for repair or replacement cost, administrative time and expense and estimated loss of unmetered water. This includes but is not limited to an intentional diversion by an individual or damage caused by a vehicle. However, if a District employee is at the site and approves the method and work, the charge to the customer may be modified or waived.

2.3.6 Access to Premises

(a) The customer is required, as a condition of service, to provide District representatives with safe, clear access and entry to customer premises for service-related work. The District's facilities must remain unobstructed and accessible at all reasonable times so the District may:

- Install, inspect, maintain or remove equipment or plumbing.
- Read, connect, disconnect or inspect metering devices.
- Inspect customer-owned cross-connection control devices.
- Inspect all customer water facilities to ensure there are no cross-connections. At any time a cross-connection is discovered and not immediately remedied by the customer, the District reserves the right to terminate water service to the customer until such cross-connection is removed.

(c) For locked District equipment, the customer will provide the District with an access key. When necessary for customer convenience, the District may install an accessible key box, for which a standard fee may be charged the customer.

(d) The customer shall provide space and protection for District facilities on the customer's premises, including meters, and other equipment installed by and belonging to the District.

(e) Although the customer is responsible at all times for maintaining customer-owned equipment, the District may inspect customer equipment before or after the service connection.

However, such inspection, or lack of inspection, shall not be construed as placing upon the District any responsibility for the condition, or maintenance of the customer's plumbing; nor does it guarantee the absence of cross-connections in the customer's service.

2.3.7 Separate Service for Each Lot, Property, or Residence

Each lot, property, or residence will be required to have a separate water service, except as provided for in this subsection. Customers shall not extend a service line to an additional residence or Accessory Dwelling Unit (ADU) without the written consent of the District.

(a) Each multi-family residential structure may be served by either a joint meter or individual meters for each unit, at the option of the property owner.

(b) Commercial, industrial, institutional, or governmental customers with facilities occupying multiple lots or structures under a single ownership, may be served by either joint meters or individual meters for each structure, at the option of the owner.

(c) Multi-tenant commercial, industrial, institutional, or governmental properties or structures may be served by either joint meters or individual meters for each tenant, at the option of the owner.

(d) A single meter may serve multiple residential lots or properties if the District approved such an arrangement in advance.

(e) One meter may be used to provide water service to separate, non-rented, and primarily non-commercial structures on the same property, if they conform to applicable zoning and applicable county and/or city regulations.

If joint metering is used, the customer shall be the property owner or another person who agrees to be responsible for the entire billing. If a property owner requests to convert a joint meter shared by multiple tenants to individual meters for each tenant, the property owner is responsible to pay the cost of meters, meter installations and any other associated costs or fees.

2.3.8 Accessory Dwelling Unit Policy

An Accessory Dwelling Unit (ADU) is a secondary dwelling unit located on the same lot as a single-family housing unit, duplex, triplex, townhome, or other housing unit. A detached ADU is an ADU which is physically

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separate from the main dwelling on a parcel. Detached ADUs require their own water connection (cannot share the same connection as the primary residence). A secondary dwelling located within or that is physically attached to a main dwelling is considered an attached ADU and does not require a separate water connection per DOH 331-123 Section 4.2.2.

For planning purposes, water connections for detached ADUs will be considered to be a minimum of ½ (0.5) of an ERU, however, the District may determine a full ERU is applicable based on applicable guidance, engineering standards, or additional modeling.

Application for a Certificate of Water Availability may be made for a detached ADU per Section 2.2, subject to the following additional considerations:

- Detached ADUs represent an accessory use of property and are therefore subordinate to primary uses; Thurston PUD shall have discretionary authority to deny applications for water availability for accessory uses if the accessory use has the potential to restrict or otherwise negatively impact permitted primary uses.

- Prior to approving a water availability for a detached ADU, the District will use best efforts to reserve adequate system capacity and water right authorization to serve existing and approved connections on buildable lots within approved plats of a water system service area; however the District's failure to do so shall not result in any legal liability to the District.

- The proposed service must meet the following conditions, in the discretion of the District:

  - The District is able to provide reasonable and timely service to the detached ADU.

  - the water system has sufficient physical capacity and water right authorizations to allow for service to the detached ADU.

  - The detached ADU will not increase the number connections or population resulting in the reclassification of a Group B system into a Group A system (WAC 246-291-005).

o No other existing covenants, provisions, or authorizations, restrict the District's ability to serve the detached ADU.

• The fee for a Certificate of Water Availability for a detached ADU will be established on the District's Standard Rate Fee.

Standard residential policies, connection fees, and rates shall apply to all detached ADUs.

2.3.98 Multiple Meters

When a customer's service requires application of more than one rate schedule, one meter will be installed for each applied schedule. Each meter will be billed separately unless otherwise specified in a special contract.

The customer will be responsible for purchasing and installing any additional meters desired for customer purposes, and for placing such meters on the customer side of the District meter. Such meters shall be as approved in advance by the District, and shall be installed at the customer's sole expense, and in a manner and location as approved by the District.

The builder of a multiple-unit complex is required to permanently and accurately number meters and corresponding building units.

2.3.109 Meter Testing

The District will, at its own expense, inspect and test its meters as required to ensure a high standard of accuracy. Additional tests at the customer's request may be made; and if the meter is found to register within two (2) percent of accuracy, the District may charge a test fee (refer to Appendix B) for all such tests made at intervals more frequent than once in three (3) years. If the meter is found to register in excess of two (2) percent, higher or lower, the District will waive the test fee and will adjust the customer's billing for the known or assumed period of error, not to exceed six (6) months prior to the meter test date.

2.3.110 Pressure Reducing Valves

Pressure reducing valves (PRVs) serve to protect customers' plumbing and appliances from damage due to high water pressure. A pressure reducing valve shall be installed when the District determines that water pressure at a service location exceeds 80 pounds per square inch (psi).

The following conditions shall determine how the installation is performed:

(a) For pressures greater than 80 psi, but not more than 120 psi, the customer may select one of the following options:

- At the time the meter is installed, the District will install a PRV on the District side of the meter, for a one-time set fee. After the PRV is installed, the District will be responsible for its maintenance, repair, and/or replacement at no additional cost to the customer. However, if the customer does not request the District to install a PRV at the time of meter installation, and later requests the District to install a PRV, the full cost of installation will be charged to the customer, rather than the set fee.
- The customer may install his/her own PRV, or have a plumber install it, on the customer side of the meter, at the customer's expense. In this case, the property owner will be responsible for maintenance, repair or replacement.

(b) For pressures greater than 120 psi:

- At the time the meter is installed, the District will install a PRV on the District side of the meter, for a one-time set fee. After the PRV is installed, the District will be responsible for its maintenance, repair, and/or replacement at no additional cost to the customer.

2.3.12~~1~~ Booster Facilities

The District may boost service pressure via an individual booster pump housed in a suitable location on the customer's property. This method of service shall only be used in the interim until system improvement are made to resolve pressure deficiencies and shall be designed in accordance with good engineering criteria and practices as listed in WAC 246-290-200 and considered in limited circumstances where: 1) a positive pressure of 30 psi cannot be provided during peak hourly design conditions; 2) a multiple customer booster facility is not feasible; and, 3) the customer is located in close proximity to a storage reservoir that will provide positive pressure to the suction side of the individual booster during peak hourly demand flow and fire flow conditions. If these conditions are met, service shall be conditioned upon with District which

could include service fees in addition to other applicable service charges. The property owner shall provide a suitable location, power supply, and suction/discharge piping in accordance with the District's Standards and Specifications. In addition, the customer shall sign a Boosted Service Agreement which outlines the terms and conditions of such service.

This section does not apply to design of water systems for new developments.

2.3.13~~2~~ Cross-Connection Prevention

Cross-connections between the District's water service and any other source of water are prohibited, unless authorized by the District in combination with the use of a backflow-prevention assembly. Service connections and individual customer plumbing systems shall be constructed and maintained so as to prevent backflow of potentially contaminated water into a potable water system. The control or elimination of cross-connections shall be in accordance with the provisions of WAC 246-290-490, as modified from time to time.

The District reserves the right to inspect all customer water facilities to ensure that no cross-connections exist, in accordance with District policies on access to premises (see Section 2.3.6). If an unauthorized cross-connection is discovered and not immediately eliminated, water service may be suspended until the cross-connection is eliminated.

2.3.14~~3~~ Backflow Prevention Assemblies

The District may, at its sole discretion, permit or require a customer to install a backflow prevention assembly on the customer's plumbing system or service connection. Customers required to install backflow prevention assemblies include, but are not limited to, those who:

(a) Operate commercial or residential fire sprinkler systems connected to their plumbing;

(b) Operate an irrigation system connected to their plumbing;

(c) Maintain cross-connections of their water system with air-conditioning systems, medical equipment, or other devices or processes where chemicals, microorganisms, or other objectionable substances may be drawn into the water system;

(d) Own or maintain systems that, in the judgment of the ~~the~~ District's licensed Lead Cross Connection Specialist (CCS), usually Director of Field Operations, compromise the health and safety of other users of the District's water system.

The customer is responsible for the entire cost of installing a backflow-prevention assembly. The assembly shall remain in the customer's ownership and as the customer's responsibility.

Annual testing, periodic inspections and repairs of backflow-prevention assemblies, as required by WAC 269-290-490, shall be arranged by customers at their own expense, using firms or individuals that are licensed Backflow Assembly Tester (BAT). A signed copy of the inspector's completed report shall be provided to the District to confirm that assemblies are operating in a satisfactory manner.

Inadequate maintenance of a backflow-prevention assembly shall be grounds for suspension or termination of water service.

2.3.15~~4~~ Relocation of Delivery Points

(a) A customer's delivery point may be relocated at the customer's request. Delivery point relocation is subject to advance payment of the estimated cost of relocating the District's service pipe, meter and other facilities. The customer shall be responsible for relocation of the service line to the new location. The District will disconnect the old service at the meter and connect the new service.

The District may reduce the costs to be charged to the customer for relocating any of the District's facilities, as requested by a customer, to the extent that such relocations may benefit the District. In determining the amount of such reduction, the District will give consideration to the remaining physical life of facilities or equipment replaced, the improvement to the system operations, and any increased revenue that will accrue to the District as a result of such relocation.

(b) A customer shall be responsible for the relocation of a meter box when property alterations have been made which leave meter access or location unacceptable to the District. The District may disconnect service when the meter box is not satisfactorily relocated.

2.3.165 Resale

Customers may resell water only with written District permission. Rates charged may not exceed rates the District charges for similar service.

2.3.176 System Disturbances

Water service shall not be utilized in such a manner as to cause severe disturbances or pressure fluctuations to other customers of the District. If any customer uses equipment that is detrimental to the service of other customers of the District, the District may require the customer to install, at his/her own expense, equipment to control such disturbances or fluctuations.

2.3.187 Freezing

It shall be the customer's responsibility to protect from freezing all piping, fixtures and appurtenances on the customer's side of the point of delivery.

Any damage resulting from freezing shall be considered the responsibility of the customer.

2.3.198 Interruption of Service

(a) It is the District's intent to provide adequate and continuous service with minimum interruption. However, the District:

- Does not guarantee against occasional curtailment or failure of water service;
- Shall not be liable for resulting injury, loss, or damage; and
- Shall not be considered in breach of contract for temporary interruption of service.

(b) Repairs or improvements to facilities requiring temporary service interruption will be expedited and timed to minimize customer inconvenience. When possible, a preceding notice will be sent to the customer.

~~(c) If the customer's water service fails, the customer shall endeavor to determine if the cause is on the District's side or the customer's side of the meter.~~

~~When the District responds to a customer call after service hours, and the problem is found to be with customer equipment, the customer may be charged a set fee for such response.~~

~~When the District responds to a customer call, and the problem is found to be with customer equipment, the water serviceperson may make repairs at the customer's request following the customer's execution of a service request agreeing to pay actual time and materials to make the repair. The charges will be included on the customer's next regular billing.~~

2.3.20~~19~~ Additional Water Supply

A customer desiring a District change in the capacity of its service connection and meter to supply increased quantities of water shall notify the District sufficiently in advance so that the District may, if determined to be feasible, provide the facilities required to supply increased quantities of water. The customer shall pay in advance the cost of any such facilities.

2.3.21~~0~~ District Representation by Employees

Except as specifically authorized in these policies and regulations, no promise, agreement or representation of any employee or agent of the District, with reference to the furnishing of water service by the District, shall be binding on the District, and in no event shall the same be binding on the District unless the same shall be in writing signed by the General Manager or his/her designee.

No inspector, agent or employee of the District may ask, demand, receive or accept any personal compensation for any service rendered to a customer in connection with supplying or furnishing water service by the District.

2.3.22 District Cyber Security Response Plan

To protect the District's Water Infrastructure and Customer Information Systems stored digitally the District has developed the Incident Response Plan for Cyber Security Breach in Appendix C-I.

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2.4 METER READING, BILLING, PAYMENT and COLLECTIONS

2.4.1 Meter Reading

(a) Meters will be read in monthly cycles, unless an exception is made due to unique environmental situations by the General Manager or

his/her designee. The District may alter or reroute its meter reading and billing cycle dates when such alteration or rerouting is in the best interest of the District.

(b) Initial or final readings may be estimated and/or prorated.

(c) Special meters may be installed on any account when the nature of the customer's equipment and operation so indicates for correct rate schedule application and/or customer service improvement.

2.4.2 Billing

Billing statements will be sent to the mailing address furnished by the customer. Failure to receive a billing statement will not release the customer from the obligation to pay for services provided.

Billing statements will be issued monthly, and generally will be based on exact meter readings.

Billing charges may be estimated when:

- A meter is not accessible to the meter reader;
- A meter is under snow or water;
- A meter malfunctions;
- Other circumstances beyond District control interfere with meter reading.

In the event that billing charges are estimated, an adjustment will be made at the time of the next regular billing that is based on an actual meter reading.

The District will send billing statements and notices by first class mail. A customer who does not provide a proper mailing address (or a means of receiving mail) may be subject to disconnection.

2.4.3 Payment

The customer's obligation to pay a bill accrues on the date the billing statement is issued. Payment is due by the due date listed on the billing statement. Payments will be considered made when received at the District's Headquarters. Payments are to be accompanied by a billing remittance slip or account number.

2.4.4 Adjustments

Certain staff have the authority to grant adjustments when it is demonstrated that the cost of continuing to deny the customer's request substantially exceeds the amount in dispute and results in reduced customer satisfaction. Customer Service Representatives are authorized to waive certain fees such as penalties, new account set up, tamper fees and reconnection fees as appropriate to resolve issues with customers; the AGM and GM will be notified when more than $250 is forgiven. Authority limits are established as follows:

- Assistant General Manager/General Manager - Over $3,000 each occurrence
- Finance and Customer Service Manager - Up to $3,000 for each occurrence
- Customer Service Supervisor – Up to $1,000 each occurrence
- Customer Service Representative – Up to $100 each occurrence

(a) In the case of incorrect application of rates, meter malfunction, or clerical errors, retroactive billings will be made for up to the prior six (6) billings on monthly-billed accounts, or three billings on bimonthly-billed accounts. In the case of billing to the wrong customer due to meter misidentification, adjustments will be made three (3) years prior.

A final balance (debit or credit) of less than three dollars ($3.00) may be routinely written off by the District.

When it has been determined that a customer has received unmetered service or when the customer has caused the service furnished to be improperly or inaccurately metered, the District may render bills for such service based upon its reasonable estimate of the service actually furnished for the full period during which the service was unmetered or improperly metered, or as provided in Section 2.3.9.

However, in those cases where the premises have been remodeled resulting in a situation whereby more than one customer is served by one meter, no adjustments will be made, and the account customer of the premises shall be required to assume responsibility for the billing effective the last regular reading date unless another person agrees in writing to assume full responsibility for the billing.

(b) A customer may be eligible for an adjustment to their water bill in the event of a loss of water through abnormal conditions when the cause

is deemed by the District to have been undetectable and not resulting from a lack of normal maintenance by the customer. No adjustments shall be made in water charges for losses resulting from customer negligence, improper operation of plumbing by the customer, and/or failure of the customer's plumbing system. The date that qualifies as "official notification" of a leak varies depending upon the circumstances.

(1) If a District employee identifies a potential leak, a phone call will be made to the customer or written notification will be mailed. A door hanger may also be left in a prominent place at the residence. The date of the telephone call or letter will serve as the "official notification" date.

(2) If the customer contacts the District regarding the possibility of a leak, a visit to the site address will be initiated. Upon verification of a qualifying leak, the customer will be contacted. The date of the notification will serve as the "official notification" date.

Once a leak has been identified, the customer will be provided with a ten (10) day period to contact the District to advise that repairs have been scheduled during which the adjustment period will continue.

The time period during which a customer could expect to receive an adjustment is from the "official notification" date back to the previous billing period where the leak can be detected and forward to include the ten (10) day period allotted to contact the District to advise that repairs are scheduled.

Customers will be charged for the average cost of water produced on the water system, which has been determined at $1.42 per ccf, when the customers meet the other criteria of the policy. The cost of water produced will be reviewed periodically and the amount of the adjustment may be administratively reduced since there is no loss to the District. Authority levels for adjustments is provided above in section 2.4.4.

The methodology for determining excess amount of water over normal consumption will be determined by the prior year's history for an existing customer; an average use of 1,000 cubic feet per month will be used as the "normal use" base for new customers or customers without sufficient consumption history.

A customer is eligible for one leak adjustment per service address, per twelve (12) consecutive months, from the time of a previous leak adjustment, or more often if approved by the General Manager or Assistant General Manager. The Customer Service Representative Supervisor and Assistant General Manager, or General Manager his/her designee will be responsible and accountable for authorizing adjustments.

Review Section 2.4.4 for staff members responsible and accountable for authorizing adjustments.

No adjustment shall be made in the water billing by reason of freezing, unless approved by the General Manger or Assistant General Manager.

2.4.5 Reminder Notices

Reminder notices will be sent on past due accounts. An account is considered past due if payment (in full) for an applicable period has not been received within 15 days after the billing date. A past due fee is charged to a customer account at the time a reminder notice is generated.

2.4.6 Disconnect Notices

(a) Disconnect Notices for bimonthly accounts will be mailed approximately 10 days after reminder notices are sent. The notice will be for amounts in arrears only. Billing statements will show any and all amounts in arrears as well as any new billing charges and past due fees.

(b) Disconnection will occur following the due date listed on the notice unless:

- The delinquent payment has been received at a District office by the due date.
- A deferred payment agreement has been reached.
- The customer has appealed the action and a hearing is pending.

(c) Exceptions: In certain instances, where health, safety or essential services would be otherwise jeopardized, or for purposes of economy, the District may suppress normal disconnection practices.

2.4.7 Collection

While considering individual customer needs, the District is obligated to make prudent collections. Reasonable collection methods will be used, including disconnection of service, collection agency assignment, and/or legal action.

2.4.8 Extenuating Circumstances

(a) The District will pursue a solution with customers temporarily unable to pay on time due to extenuating circumstances, including but not limited to financial hardship. The availability and terms of a deferred payment plan will be based on a review of the individual customer's situation, including:

- Amount and age of delinquency.
- Past payment record.
- Ability to pay.
- Demonstration of good faith.

(b) Employees will give customers available information on other resources for assistance when appropriate.

(c) Service will not be terminated for inability to pay when termination would be especially dangerous to health of a resident, as determined by the District so long as the customer has made application to appropriate agencies for assistance and payment is pending.

2.4.9 Deferred Utility Payments and Payment Plans

Customers will have an opportunity to keep water service accounts current through optional payment programs arranged through a Customer Service Representative. Deferred payments or payment plans of up to one year will be provided to allow the customer the opportunity to comply. Requests for payment plans longer than a year will require approval by the General Manager or Assistant General Manager. Customers who have failed to honor the agreed upon payment plans may not be allowed to establish new payment plans, subject to the approval of the Customer Service Supervisor and the Assistant General Manager.

2.4.10 Insolvent Accounts

If the District has reasonable cause to believe a customer to be in financial difficulty or contemplating bankruptcy, appropriate action may

be taken to secure the payment of charges due. Requirements may include a security deposit, altered payment schedule, or other actions deemed necessary and reasonable by the District, including filing a Notice to Title on the property advising of an unpaid utility account.

2.4.11 Transfer of Unpaid Balances

A water service customer's unpaid balance may be transferred into any current water service account of the same customer and same type as part of current obligation and subject to the District's requirements for payment. The customer will be notified of:

- Transferred balance.
- Date and location of service of unpaid account.
- Impact of future service.

2.4.12 District Pay Stations

(a) Pay stations may be established for the purpose of collecting customer payments throughout the District's service area with the approval of the District's General Manager or his/her designee.

(b) The pay station agent will prepare collection reports in duplicate. A PDF copy of the cash report will be emailed daily to the District at PUDCustomerService@thurstonpud.org. The original cash report, remittance slips, and receipts will be mailed twice a week to the Thurston Public Utility District No. 1, 1230 Ruddell Road SE, Lacey, WA 98503.

(c) The pay station agent will be responsible for all money paid by the customer.

(d) The pay station agent will accept payments only for those accounts that are accompanied with a billing remittance slip or the customer's account number.

(e) The pay station agent will not accept second party checks for payment of an account.

(f) The District will pay the pay station agent a set fee per remittance slip for each collection.

(g) The District will furnish without charge, all necessary stationery, supplies, and prepaid postage envelopes for mailing of the daily collection reports to the District.

2.5 DISPUTE RESOLUTION

2.5.1 Mandatory Hearing

Any customer, person, or entity who believes that he/she has been adversely affected by a decision which the District has made in the categories outlined below has the right to have that decision reviewed in a hearing to be held by a District Hearing Officer.

(a) Service disconnection;

(b) Refusal to deliver water service;

(c) Transferring an outstanding balance to a new water account;

(d) Requiring a payment plan;

(e) Requiring the customer to provide security deposit as a condition of receiving water; or

(f) Requiring the customer to pay a fee or penalty; (e.g., reconnection fee, new account service charge, etc.).

2.5.2 Discretionary Hearing

The District may, at its discretion and with the approval of the General Manager or his/her designee, provide a hearing to any customer who believes he/she has been adversely affected by any decision of the District on any matter other than the decisions listed in Section 2.5.1.

2.5.3 Binding Decision

The decision of the District's Hearing Officer shall be final, unless either party elects to challenge the decision in a court of law.

2.5.4 Written Hearing Request

A request for a hearing must be made in writing signed by the customer or from a customer's verifiable email address or by someone with legal authority to act on the customer's behalf. Each hearing request must include a concise statement of both the decision to be reviewed and the relief which the customer is requesting. In addition, each hearing request must include an address to which notices, including notice of the hearing date and location, the decision of the District representative and any other written communications may be mailed to the customer.

2.5.5 Delivering Request for Mandatory Hearing

The customer's written request for a mandatory hearing must be delivered to the District's Customer Service Supervisor who will copy and deliver it to the District's Finance and Customer Services Manager (FCSM), the Assistant General Manager and the General Manager.

2.5.6 Delivering Request for Discretionary Hearing

If the District has informed the customer that it will provide a discretionary hearing, the customer's written request for a discretionary hearing must be delivered to the District's Customer Service Supervisor who will copy and deliver it to the District's Finance and Customer Services Manager (FCSM), the Assistant General Manager and the General Manager.

2.5.7 Hearing Date

The General Manager will appoint a Hearing` Officer and will determine the date and time of the hearing, which shall be held at the District Headquarters within ten (10) business days after the hearing request is received by the District's Hearing Office. Provided, that a hearing date will not be established if the written hearing request does not include an address to which notices to the customer may be mailed or if the written hearing request is, in the opinion of the District's Hearing Officer, otherwise materially deficient.

2.5.8 Notice of Hearing

The Hearing Officer will mail notice of the hearing or, under the circumstances described in Section 2.5.7 above, notice that a hearing date will not be established by first class mail, postage prepaid, to the customer at the address set forth on the hearing request within three (3) business days after the hearing request is received by the Hearing Officer.

2.5.9 District's Action Stayed Pending Receipt of Written Request for Hearing

If a customer:

(a) Contacts the District within three (3) business days after receiving notification, whether written or oral, of a decision of the District; and

(b) Is orally informed that the customer may have a hearing to review that decision; and

(c) States, within one (1) business day after being informed that a hearing is available, that the customer intends to request a hearing;

Then, as a result of the statement of intent, all District action which would be taken as a result of the decision shall be stayed until the written request for a hearing is received by the District or for a period of six (6) business days after the date upon which the customer orally stated that a hearing would be requested, whichever is earlier.

2.5.10 District's Action Stayed Pending Hearing

If the District receives a written request for a hearing within the time set forth in Section 2.5.9 above, all District action which would be taken as a result of the decision shall be stayed until noon, ten (10) business days after the Hearing Officer's written decision on the matter is received by the Customer Service Supervisor: Provided, that if a hearing date is not established for a reason set forth in Section 2.5.7, District action will not be stayed.

2.5.11 Security Deposit Pending Hearing

If a customer requests a hearing to dispute a debt for water service which exceeds $1,000 and the customer wishes to receive water service until the hearing is held, the customer must provide security for the water service to be provided by the time the written request for a hearing is delivered to the District. The amount of security will be the amount of money that will reasonably accrue from the usage of water, based upon prior usage at the facility involved, from the date the customer orally informs the District that a hearing will be requested until thirty (30) days thereafter.

2.5.12 Performance Pending Hearing

All obligations which are not the subject of the dispute to be decided by a Hearing Officer shall be performed by the District and/or the customer. This shall include, in the case of a dispute over amounts to be paid, the payment of all non-disputed amounts.

2.5.13 Failure to Appear

If a customer fails to appear for a hearing within fifteen (15) minutes after the time set forth in the notice of hearing, the customer will be in default, and the Hearing Officer shall decide the disputed matter in favor of the District and the customer shall be required to pay a penalty which may be added to any existing account of the customer. If the customer fails to appear, the customer's request for another hearing will not be

granted unless the failure to appear was caused by an emergency or because of the occurrence of an unforeseeable circumstance or event, which shall be determined by the Hearing Officer, and the customer pays the penalty prior to the subsequent hearing. In such case, the subsequent hearing must be held within ten (10) business days of the original hearing.

2.5.14 Continuances

Any request for a continuance shall be made to the Hearing Officer, which shall grant such a continuance only in the case of an emergency or because of the occurrence of an unforeseeable circumstance or event. Any request for a continuance made by a customer which is not received at least twenty-four (24) hours (i.e., one complete business day) before the scheduled hearing may result in an award in costs to the District which may be added to any existing account of the customer.

2.5.15 Representation

A customer may represent himself/herself or may be represented by an attorney, relative, friend, or any person other than a District employee. The District will not be represented by an attorney unless the customer is so represented. If the customer is to be represented by an attorney, the customer must inform the District of that fact at the time the written request for a hearing is delivered to the District, or if the services of an attorney are procured later, then as soon as such representation is arranged.

2.5.16 Evidence

The Hearing Officer may consider evidence which will assist the Hearing Officer in reaching a decision and may give effect to the rules of privileged communications (e.g., attorney/client privilege, husband/wife privilege, etc.) under the law. Information that is irrelevant and unduly repetitious may be excluded. Documentary evidence may be received in the form of copies or excerpts. Each party shall have the right to ask questions of persons who make statements at the hearing.

2.5.17 Legal Authority

The Hearing Officer shall apply as the first source of law District Resolutions, Code and Regulations. If none of these govern or decide the issue(s) presented, the Hearing Officer shall resolve the issue(s) on the basis of the best legal authority and reasoning available, including that

found in the state and federal constitutions, statutes, and court decisions.

2.5.18 Limitation on Authority

The Hearing Officer shall not have the power to declare a District Resolution, Code provision, regulation or any portion thereof invalid for any reason, but may allow argument to be made for purposes of subsequent review.

2.5.19 Review of District Action

If the dispute involves a question of whether the customer is indebted to the District, the District must establish the customer's obligation by a preponderance of the evidence. If the dispute involves a question of whether a District decision is inconsistent with the regulations of the District, the customer must establish that the District's decision is a willful and unreasonable action made without consideration and in disregard of facts and circumstances.

2.6 RATES, FEES and CHARGES

2.6.1 Service Connection Charge

(a) A Service Connection Charge (SCC) shall be charged to all New Customers connecting to District facilities, and to all existing customers requesting additional service work.

(b) Additional costs for services may be required if the service will be connected to a main previously constructed, under the District's line extension policy (see Section 3.3).

2.6.2 General Facilities Charge

The District has limited capacity to serve additional customers without infrastructure installation and replacement. The general facilities charge is levied by the District per ERU, payable to the District, and representing a new customer's proportionate share of costs the District incurs in construction or acquisition of water general facilities, (e.g., source, storage, treatment, and transmission facilities); required to support the addition of the new customers and other new customers projected by the District to be added to its water systems under the District's current Water System Plan.

2.6.3 Rate Schedules

(a) The District has rate schedules for particular types of service provided. For specific detail, refer to the Rate Schedules for the current year. In case of conflict between the provisions of any rate schedule or special contract and this Water Policy Manual, the provisions of the rate schedule or special contract shall apply.

2.6.4 Non-Standard Service Charges

(a) The District shall charge private parties and public entities for services rendered by the District on behalf of such private parties or public entities.

(b) For services not covered by standard fees or charges, the rate charged for services (the "service rate") rendered by District personnel shall be the hourly rate for the position, including benefits, plus overhead.

(c) Equipment shall be billed at reasonable rates consistent with retail rental rates for like equipment in the Greater Olympia-Lacey-Tumwater-Tenino area. Such rates will be established by the General Manager or his/her designee, on a case-by-case basis, by obtaining three or more estimates from private rental firms in the area.

2.6.5 New Account Service Charge

(a) A new account service charge will be billed during processing of each service application, except for:

- Name changes when no closing bill is requested or required.
- Owner/agent agreement with owner/agent assumption of responsibility for service between tenants.
- Disconnection of an account for nonpayment and reconnected subject to a reconnection fee.
- Name changes between husband and wife.
- Name changes between the deceased customer and estate.
- Customers added to the District through a water system acquisition.

(b) The customer is to be advised of the new account service charge at the time the application is taken.

(c) The new account service charge is to be billed within ten (10) days from the date the application is received.

(d) The following procedures shall be followed:

- Separate applications for service when billed on different account numbers at the same address – one charge for each account, unless separate accounts are established for District convenience.
- Multi-service account – one charge for each additional meter reconnection after the initial application.
- Multi-metered complex (e.g., apartment house)
    - One charge per account for general use areas.
    - If no general use account, one charge per building to initiate service for one or more non-rented units.

2.6.6 Records Research Charge and Public Information Requests

The District will make information and records available to the public for inspection and copying in accordance with RCW Chapter 42.56, the Washington Public Records Disclosure Act, and District policy.

Information and records concerning water service, including rates, charges, connections, disconnections, construction, installations, engineering, policies and procedures may be obtained from the District's Headquarters located at 1230 Ruddell Rd SE, Lacey, WA 98503.

Requests for public records will be handled in compliance with provisions of the District's policy 200-010 Public Records Disclosure. No fee is charged for inspection of public records on the premises; however, the District imposes a charge for providing copies of public records and other miscellaneous fees – please review Policy 200-010 for more information. Such charges do not exceed the actual costs of copying.

2.6.7 Disconnection/Reconnection Charge

(a) Whenever water service has been disconnected for noncompliance with the District's policies and procedures, for nonpayment, or for fraudulent use, service will not be reconnected until the situation requiring such action has been corrected to the satisfaction of the District. A reconnection fee shall be charged for reconnection during

regular business hours. A higher fee shall be charged for reconnection at all other times including weekends and holidays. As appropriate, the customer will be advised of these fees in advance.

2.6.8 Discounts

The District does not currently offer discounts for water service.

2.6.9 After Hours Connection Charge – New Customer or Vacant Account Reconnect

(a) If a customer requests a connection to occur between the hours of 3 p.m. to 8 a.m., or during weekends or holidays, the District will advise that there will be an after-hours connection charge in addition to the new account service charge.

2.6.10 After Hours Service Charge – Established Customers

Established customers will incur an after-hours service charge, plus material cost and tax, if a water service person is dispatched to the customer's premise, *at the customer's request*, outside of the hours of 3:00 p.m. to 8:00 a.m. or on weekends and holidays and it is determined that the problem is caused by a failure of the customer's facilities.

2.6.11 Returned Payment Charge

A returned payment charge may be billed to each water service account for which payment has been received by any check or legal tender which is subsequently returned to the District by the bank. Reasons for returned payment may include but are not limited to irregularities, lack of sufficient funds in the payer's bank account, the customer having closed the account or other situations that result in a returned payment.

2.6.12 Security Deposits

(a) Security deposit may be required of a customer at application or later for any of the following reasons:

- Incomplete application.
- Misrepresentation of identity.
- Tampering with District equipment.
- Bankruptcy petition.
- No established credit.
- Poor payment record/history.

(b) A notice will be mailed to the customer when a security deposit is required, showing the amount, due date and customer rights to appeal.

(c) Payment is due as stated in notification unless other arrangements are made within that period.

(d) Amount of deposit will be a maximum of $150.00. Higher credit scores may lower the amount of the deposit.

(e) Refund or application of deposit may be made, based on evaluation of customer credit history, after 24 months experience with residential customers and 36 months with nonresidential customers.

(f) At termination of service, an existing deposit will be refunded, less outstanding amounts due.

(g) **Transfers**: When a customer relocates and reapplies for service, an existing deposit may be carried over to service at the new location and may be adjusted, depending on the circumstances.

(h) **Interest**: The District does NOT pay interest on customer security deposits.

2.6.13 Charge at Cost for Nonstandard Service

Customer shall pay the cost of any special installation necessary to meet the customer's particular requirements for service at other than standard pressures, or for closer pressure regulation than would normally be provided at the location involved.

2.6.14 Surcharges

Upon approval by the Board of Commissioners, the District may impose surcharges on monthly customer rates to fund capital improvements or operations and maintenance. Surcharges may be imposed on all District customers, or on customers in selected pressure zones, satellite systems, etc., according to the benefits derived from the capital improvements or the operations and maintenance activities funded.

2.7 VIOLATIONS

2.7.1 Unauthorized Taking of Water, Tampering with Equipment, and Unauthorized Connection to the District's System.

When appropriate, the District will seek prosecution for theft of water, destruction of District property, and other violations of law affecting

delivery of its services. The District may pursue collection under RCW 80.28.240 for its losses, damages, and costs related to such actions to the full extent provided by law.

In addition:

(a) There may be levied an investigation or service and/or commodity charge against any person, firm or corporation who shall take water or knowingly received the benefit of water taken from any water line, reservoir, or fire hydrant, or any facility of the District without the District's consent and without first having obtained from the District a permit to take such water. Such sum shall be due and payable immediately upon the taking of such water.

(b) There may be levied an investigation, service and/or commodity charge against any person, firm or corporation who shall tamper with any water meter, fire line meter, service line, or any meter related appurtenances of the District. Such sum shall be payable at the time of discovery by the District of such tampering.

(c) There may be levied an investigation, service and/or commodity charge against any person, firm or corporation that takes water from an angle stop, service lead, angle check valve, or related appurtenances intended for a future meter installation without consent from the District. A meter will not be installed to serve the property until any and all charges and the standard meter installation fees are paid. If a meter application has been purchased from the District and, prior to installation, it is determined by the District that water has been taken in violation of this section then such meter will not be installed and the meter application will be held until the purchaser of such meter application pays the charge.

(d) There may be levied an investigation, and service and/or commodity charge against any person, firm or corporation that operates any valve in the District's system without the District's consent. Such sum shall be due and payable at the time of the District's discovery of unauthorized operation.

2.8 FIRE PROTECTION

2.8.1 Commercial Fire Protection Service

(a) Application for water service for the sole purpose of commercial fire protection must be made by completing and signing a standard application form.

(b) The minimum charge shown on the District's rate schedule includes water for fire protection use only. The monthly rate of water used, except for fire protection, will be double the regular-metered service water rate applicable to that certain customer.

(c) Service charge for new fire protection service connection.

- The customer must pay the cost, including installation costs, from the customer's premises to an existing main of the District.
- The customer must pay the cost of a detector check and meter, plus the cost of installation.
- Services to be used for fire protection exclusively may only be fitted with fixtures that will be used for fire protection and shall not be connected to any fixtures that will be used for other purposes. Customers having such services shall be charged no less than the minimum standby service charge as established from time to time by resolution of the Board of Commissioners. In no case shall any connection be made upon any service line, tank or other fixture installed exclusively for fire protection for any purpose except the fire service or through any pipes, tank or other fixtures reserved for fire protection be permitted for any purpose except the fighting of fires. To protect against water being drawn from a fire service line for any purpose other than fighting fires, the District may install a detector meter on such service and charge all costs of such installation to the property and the customer.

2.8.2 Hydrant Installation

The District will install hydrants on existing District water mains, at the request of one or more customers if the mains are of sufficient capacity to provide adequate fire protection with costs borne by the customer(s). The type of hydrant and location shall be as specified by the District,

which shall include the requirements established by appropriate jurisdictional agencies, whichever is stricter.

Upon request, the District will prepare an estimate for the total cost of the installation of a hydrant. Upon payment of this estimated amount, the District will make the installation. On completion of the work, the customer will either be refunded or billed the difference between the estimated amount and the actual cost. At the District's option, this work can be done at a contract price to be paid in advance.

2.8.3 No Guarantee of Adequate Water for Fire Protection

Notwithstanding the provisions contained in these schedules for commercial fire protection service, or for other metered service, including water furnished to any fire hydrant or other equipment used, or which may be used for fire connection service, it is understood that the District cannot guarantee any minimum quantities of water or pressure of the water to be furnished to any of such hydrants or outlets, and the District shall not be liable in any manner for any loss or claim by reason of the quantity of water, or pressure of the same furnished to such hydrant or outlet.

2.9 SPECIAL ARRANGEMENTS FOR SHORT-TERM WATER USAGE

2.9.1 Temporary Water Service

At the District's discretion, temporary water service may be provided to accommodate special needs for water at a fixed site on a short-term basis (e.g. on-site needs for construction activities). Temporary water service may be provided from a District main or from a fire hydrant specifically designated for this purpose by the District (see Section 2.9.2). Only District personnel are authorized to install a connection to a District main or fire hydrant for this purpose.

Temporary service may be authorized for a period not to exceed six (6) months at a time. Upon expiration of the initial six (6) month period, a customer may request an extension of temporary service for one additional six (6) month period. No more than one extension will be granted, unless authorized by the General Manager.

A customer obtaining temporary water service will not be required to pay a General Facilities Charge (GFC). However, a customer obtaining temporary water service will be required to pay a deposit for the estimated costs of installation and removal of the equipment required for

temporary service, as well as a damage or security deposit. In addition, temporary service will be metered and the customer shall be required to pay both a meter-reading charge and a charge for water usage in accordance with the appropriate rate schedule. Arrangements for metering and billing will be established on a case-by-case basis.

Upon termination of temporary service, the District will disconnect the temporary water service and take possession of the associated District equipment, or, if appropriate, convert the temporary service to permanent water service. Following disconnection or conversion, and payment of all outstanding charges for water usage, the District shall return any surplus of installation and removal charges that exceed the actual costs incurred by the District. In addition, the District shall refund any damage or security deposits, less the amount needed to replace or repair District equipment. However, in the event the customer fails to pay outstanding charges for water usage, the District may retain an amount equal to such outstanding charges.

2.9.2 Hydrant Use

No person shall operate or tamper with a fire hydrant connected to the District's water system, without the express written approval of the District or, in the case of an emergency threatening life or property, the approval of an authorized representative of the appropriate fire department. In addition to the penalty established in Section 2.7.1, any person violating this provision shall pay for the amount of water used, as estimated by the District and based on the applicable rate schedule.

At the District's discretion, authorization may be granted to take water from a fire hydrant connected to the District's water system. Procedures for authorizing use of fire hydrants shall be as follows:

(a) When a customer desires to use a fire hydrant for Temporary Water Service (short-term water service at a fixed site) the procedures in Section 2.9.1 shall be followed. The customer shall utilize only the hydrant specifically designated by the District for this purpose, and will obtain water through a separate valve installed by the District on that hydrant.

(b) When a customer desires to use a fire hydrant for short-duration purposes at a fixed site (i.e., not exceeding three (3) days), or for intermittent use by a mobile water tank (e.g., tanks on hydro seeding or public works maintenance vehicles), the following procedures shall apply:

- The customer shall obtain a Hydrant Use Permit from the District. A permit will be issued either for a daily (one (1) to three (3) days); monthly; or six-(6) month period. The customer shall pay a fee established by the District for the Permit. However, at the District's discretion, the fee may be adjusted if the quantity of water deviates by more than fifty (50) percent from the following:

Daily Permit	2,500 gallons total
Monthly Permit	10,000 gallons total
Six-Month Permit	10,000 gallons/month

- Metering will not be required for this type of use. A charge for water use shall be included in the permit fee.
- The customer shall utilize only those hydrants specifically designated by the Hydrant Use Permit.
- The customer shall utilize a backflow-prevention device approved by the District. As a condition of obtaining a Hydrant Use Permit, the customer shall permit District inspection of equipment to be used, to ensure backflow-prevention devices are adequate.
- The customer shall obtain a placard from the District that indicates a Hydrant Use Permit has been obtained. At any time a hydrant is being used, the customer shall display this placard in a prominent position clearly visible from the street. The customer shall not provide this placard to any other person.

3.1 INTRODUCTION

3.1.1 General Provisions

The District will provide facilities for the distribution of water within its service areas in accordance with approved land use plans, policies or other regulatory requirements governing service provisions. Extension of a system to serve additional customers, properties, tracts, or subdivisions will normally be paid for by the individuals that are benefited.

For an extension, an applicant (hereinafter "Applicant" or "Developer") will normally be responsible for financing the entire cost of an extension. Costs include new facilities, replacement of existing system components when necessary for making the extension or improvement, and upgrades to meet requirements which are associated with the applicant's project. Over-sizing water system components as outlined below, however, will not be charged to the applicant. Reimbursement or credit against District charges is available in some circumstances.

All water facilities must be located on property owned by the District, in public rights-of-way, or dedicated easements; must be transferred to the District's ownership for operation, maintenance, and service responsibilities; and will be subject to maintenance bonding requirements.

3.1.2 Application of Policies and Procedures

In specific instances, the General Manager may, at his/her discretion, waive or modify the application of the policies and procedures described herein, including the application of standard fees and charges, provided that such waiver or modification allows for more effective or efficient achievement of District goals, objectives, and overall policies. Conditions for waiver or modification of the application of these policies and procedures as contained in Section 1.4 of this Manual.

3.1.3 Standards and Specifications

Water system extensions, improvements, or new facilities must be constructed in accordance with the District's Standards and Specifications for Design and Construction (Appendix A). Copies will be furnished by the District upon request. It is the responsibility of the Developer to ensure that the latest version of the Standards and Specifications is used.

The Standards and Specifications have been developed as professional, technical guidelines for guiding system design and installation. The

General Manager or his/her designee may modify the Technical Standards and Specifications, to maintain consistency with changing technology and industry standards. In addition, the General Manager may waive strict application of the Standards and Specifications in certain instances, provided that the resulting design or construction is approved by the District, and remains consistent with the goals and objectives expressed in this Manual.

3.1.4 Notification

The contractor shall schedule a pre-construction conference and notify the District at least five (5) working days prior to commencing work. All work shall be inspected by the District. Contact the District Field Operations Department to schedule all tie-ins at least three (3) days in advance.

3.2 ADMINISTRATIVE PROCEDURES FOR SYSTEM EXTENSION

3.2.1 Plan Approval Required

All plans for extensions, improvements, or additions to water facilities must be approved by the District prior to construction.

3.2.2 Application

Requests for extension or improvement of a District water system to serve newly developed and/or existing properties shall be made by applicants or their agents using the District's application format. Each application shall contain a legal description of the property to be served and be accompanied by two (2) paper copies and one (1) digital version of preliminary plans, showing the location of all water lines, hydrants, and valves needed to serve the area.

It is recommended that applicants schedule a meeting with District Planning and Compliance staff to discuss the proposed project, prior to completion of the application.

3.2.3 District Review

The District will review the application and associated plans. A Plan Review Fee, as described in Section 3.3 (see Appendix B, Table B-5), will be assessed to compensate for review services.

The applicant will be notified of the feasibility of the service requested, conditions for construction, and any additional facilities (e.g. water source, storage, booster stations, water main upgrades, etc.) that may be required as a result of the proposed extension/development. Additional special requirements such as cross connection control devices or backflow prevention assemblies shall also be specified. This process will enable an

applicant to estimate more accurately, construction costs and District charges.

If fire flow is required, in some instances, the plan must be approved by appropriate Fire Marshal.

In all cases where a road right-of-way will be used for mains or other improvements, the appropriate city or county governmental agency must also approve the plan.

At the District's option, engineering design services may be provided by District staff at the application stage. A fee will be charged for such services (see Section 3.3).

3.2.4 Extension Agreement

If a project is accepted, the applicant shall then execute an Extension Agreement with the District which will specify the terms and conditions of the extension or system improvement in accordance with the District's standards. Extension agreements must be signed by the General Manager or his/her designee.

3.2.5 Submittal of Plans and Specifications

At the time the Extension Agreement is submitted, one (1) digital and two (2) paper sets of detailed plans and specifications shall be submitted by the applicant to the District for review and approval. All drawings and specifications must be stamped by a registered Professional Engineer licensed in the State of Washington.

As the project progresses, any deviations from originally approved plans and specifications shall be approved in advance by the District in writing and recorded. Updated plans must be provided to the District.

3.2.6 Permits, Easements, and Approvals

At the District's option, the applicant may be required to prepare all necessary documentation for permits, easements, and approvals. These could include, but are not limited to, documents pertaining to lane closure, building, grading, drainage, shorelines, conditional use, variance, Department of Health, Parks & Recreation trail crossing, and railroad agency permits. The District will ordinarily prepare documentation for Right of Way permits. The required documents shall be provided to the District, which will submit them to the appropriate agencies for processing. Any fees levied for permit processing shall be paid by the applicant.

The developer's contractor shall secure all permits and authorizations required from local and State agencies and disposal sites related to asbestos work, removal and disposal, including but not limited to

submittal of a written "Application to Perform an Asbestos Project" to the Puget Sound Air Pollution Control Agency (PSAPCA). No work on asbestos-cement pipe shall proceed without proper permits, certifications, worker protective clothing and breathing apparatus, and approved asbestos disposal bags. Prior to commencing work on asbestos-cement pipe, the contractor shall provide the District with a copy of any "Application to Perform an Asbestos Project," which has to be filed by the contractor with PSAPCA relating to work under this specification. The cost of asbestos related permits shall be available at the project site at all times.

The developer's contractor shall comply with all provisions of any applicable permits.

A copy of the appropriate plans, specifications, and all required permits shall be maintained on the project site at all times during construction.

All District facilities shall be installed within the city/county right-of-way or in a District-approved easement. The developer, at the District's option, shall either supply the District with the legal description of the easement (as-built) and shall pay the costs incurred by the District to do all title work, to prepare easement, and to file and record the legal easement prior to District final acceptance; or prepare, obtain and convey all said easements to the District at the developer's sole cost.

3.2.7 As-Built Drawings

Upon completion of the project, one (1) digital and two (2) paper copy sets of revised as-built drawings and specifications, and an additional set in .dwg digital drawing format ~~a digital format compatible with the District's future computerized design system~~, shall be provided to the District at the applicant's expense. As-built plans must show all new water facilities and related appurtenances which, at a minimum, shall include the locations of all mains, valves, hydrants, and fittings giving sizes and types of each. The drawings shall show the exact location of water mains including distances of mains from property lines.

A registered Professional Engineer licensed in the State of Washington must stamp all drawings and specifications, including as-builts, and complete a Department of Health Construction Report form to be filed by the District.

3.2.8 Final Acceptance

Upon completion of construction, applicants or their contractors shall notify the District and request a final inspection for approval of the project. The District will issue a Letter of Final Acceptance of the main extension, improvement or water facility, provided that:

(a) The water main has been installed according to the approved plans and specifications;

(b) Pressure and bacteriological tests have been passed;

(c) All permit conditions have been satisfied;

(d) All extension policy conditions have been fully satisfied;

(e) All fees required by the District and other entities have been paid;

(f) All easements are recorded at the county or shown on the face of the final plat map;

(g) All necessary bonding is in place;

(h) A new Mylar drawing is provided which reflects as-built conditions;

(i) Digital copy of as-built water plan is provided on a flash drive;

(j) "Bill of Sale" is executed and accepted by the District;

(k) Submit a completed Department of Health "Construction Report for Public Water System Projects" to the District for filing.

The date of the letter will begin the period of warranty. The final acceptance shall not constitute acceptance of any unpaid for, unauthorized, defective, omitted, or non-conforming work or materials. Final acceptance shall not prevent the District from requiring the applicant to pay for, remove, replace, dispose, or add work or materials or prevent the District from recovering damages for any work or materials or lack thereof.

In the event that a letter of credit or similar financial instrument has been provided as a means of guaranteeing project completion, and at the District's option, a Letter of Final Acceptance may be issued without meeting the conditions listed above. In order for this option to be exercised, the terms and conditions described in Section 3.2.9 must be met.

3.2.9 Letter of Credit

If requested by a developer for his/her convenience, the District may elect to accept a letter of credit, or equivalent financial instrument, as a guarantee of payment for various purposes. These purposes may include, but are not limited to, payment of required fees, or completion of an extension project. However, nothing in this provision shall be interpreted as a requirement that the District accepts a letter of credit, for any purpose. If a letter of credit is used to guarantee payment, the following conditions must be met:

- Payment of Letter of Credit Processing Fee to the District;
- The letter of Credit must be issued by a financial institution acceptable to the District;

- The Letter of Credit must name the District as sole beneficiary of the funds described therein;
- If a Letter of Credit expires and the District has not made any draws upon the funds, the developer is not relieved of any obligations to the District.
- If the Letter of Credit is used to guarantee payment of fees, the District shall be authorized to redeem the full value of outstanding fees if all fees have not been paid within ninety (90) days.

3.2.10 Maintenance Bond

Before the District will issue its letter of final acceptance, the developer shall provide an executed maintenance bond for ~~ten (10)~~fifteen (15) percent of the full value of the water facilities installed. Such value shall be determined by the District. The developer may post cash in lieu of bond, on the same terms and conditions as described herein. This bond shall:

(a) Be on a District-furnished form.

(b) Be signed by an approved surety (or sureties) that;

- Is registered with the Washington State Insurance Commissioner, and
- Appears on the current Authorized Insurance List in the State of Washington published by the Office of the Insurance Commissioner.

(c) Be effective for two (2) years from the date of the District's letter of final acceptance.

If at any time during the two-year period, the bond or cash in lieu of bond is used for payments, the developer shall, within two days of such payment, reinstate the value of the bond or cash in lieu of bond to an amount equal to ten (10) percent of the full value of the water facilities installed. If the value is not reinstated, the District may, at its option, redeem the bond.

The District may require sureties or surety companies on the bond to appear and qualify themselves. Whenever the District deems the surety or sureties to be inadequate, it may, upon written demand, require the developer to furnish additional surety to cover any remaining work.

3.2.11 Indemnity, Defend and Save Harmless

A contractor or owner working for the District shall agree to indemnify and defend and to save the District harmless from any and all claims or liability for damages arising from acts done under the contract. Before commencing work the contractor shall furnish the District certificates of his comprehensive general and automobile liability and property damage

insurance, in limits acceptable to the District, protecting against all claims for personal injury or property damage, including coverage for underground collapse and explosion damage, arising during the course of the performance of said contract.

3.2.12 Bill of Sale

The applicant shall provide the District with all applicable invoices and other information necessary for preparation of the bill of sale.

The District shall prepare the bill of sale transferring ownership of all installed water mains and facilities to the District. The bill of sale shall be signed by the applicant. The bill of sale shall describe lengths and sizes of water mains, size and quantities of services and hydrants, and the location in general terms, including the name of the plat, if applicable.

3.3 FINANCING and FEES

3.3.1 Financing Methods

Line extensions can be paid for in three ways:

(a) The developer may obtain his/her own contractor to install the main to meet District specifications and pay the contractor directly. Upon completion of the work, and after approval by the District, the installation will be turned over to the District by means of a bill of sale.

(b) A Local Utility District (LUD) may be formed to finance the extension (see Section 3.3.2).

(c) In limited cases, and at the District's option, the District may construct the facilities or may contract for construction. The District will make an estimate of the total costs of the project. On receipt of the payment of that estimated amount by the developer, the District or its authorized representative will proceed with construction. Upon completion of the project, the customer will be either refunded or billed for the difference between the estimated amount and the actual cost of the installation. For jobs where the estimated cost of materials exceeds $50,000, and the District is going out to bid, the District must call for public bids, and award the contract to the lowest acceptable bidder.

3.3.2 Formation of a Local Utility District (LUD)

Property owners within a defined area may petition the PUD Commissioners to extend water mains to their properties by formation of an LUD, financing the extension by assessing benefited properties within the LUD area. All engineering, construction, administrative and other

costs, costs of easements, permits, environmental reports, and Shoreline Permits, are a part of the LUD costs.

The District will prepare a petition at no cost for property owners desiring to initiate the formation of a local utility district.

To the full extent required by and subject to the limitations imposed by applicable law (as amended from time to time), the Board of Commissioners shall determine whether or not to form local utility districts.

LUD formation must follow procedures described in the District's LUD Process Manual and applicable statutes.

Costs for tapping onto a main constructed under an LUD will be defined in the provisions of the LUD involved.

Under applicable law, certain properties within the boundaries of a local utility district may be exempt from assessment. In such cases, the District will grant an exemption, provided the property owner or his/her representative notifies the District in writing and provides evidence satisfactory to the District that the property qualifies for an exemption.

3.3.3 LUD Assessments

For an LUD, each property included will pay an assessment set by the LUD process and designed to ensure customers pay an equitable share of system costs for supply, transmission, treatment, and local distribution lines. Assessments shall include cost of system construction together with any applicable System Development Fees (SDF) and, at the option of each assessed property owner, a Service Connection Charge. Assessments shall not be in lieu of any other applicable fees or charges payable as the result of customer service changes, water usage, or the formation of any future LUD.

Customers added after LUD process deadlines have passed (e.g. time expired, specified number of services added, etc.) will be assessed standard District Charges and Fees in effect at the time of the request for service.

Further information can be found in the RCW Title 54.

3.3.4 Plan Review Fee

At the time an application is submitted for an extension or improvement, the applicant shall pay the District a Plan Review Fee (see Appendix B, Table B-5) to cover the cost up to two District reviews. If more than two (2) reviews are required for the same project prior to execution of an Extension Agreement, or if the scope or complexity of design requires unusually extensive review, an additional fee for non-standard engineering services may be charged.

If the District undertakes to provide engineering design services at the application stage, a fee may be charged for non-standard engineering services.

3.3.5 Extension Agreement Fee

At the time an Extension Agreement is submitted for execution by the District, the applicant shall pay the District an Extension Agreement Fee to compensate the District for resources needed to participate in the project (see Appendix B, Table B-5).

3.3.6 Summary of Extension Fees

In addition to fees charged for processing applications, Extension Agreements, and other District services, the Applicant will be charged the following Extension Fees, where applicable:

(a) System Development Charge (General Facility Charge)

(b) Account Service Charge

However, fees for properties located within LUDs are handled through the assessment process discussed above.

3.3.7 General Facilities Charge

The General Facilities Charge is assessed by the District per ERU, payable to the District, and representing a New Customer's proportionate share of costs the District incurs in construction or acquisition of Water system general facilities, (i.e., source, storage, treatment, distribution, and transmission facilities); required to support the addition of the New Customers and other New Customers projected by the District to be added to its water systems under the District's current Water System Plan.

3.3.8 Non-standard Engineering Fees

Engineering fees for non-standard engineering services shall be established in the manner described in Section 2.6.5 of this Policies and Procedures Manual for Non-standard Services.

3.3.11 Over-Sizing and Replacement

In order to provide capacity for future customers or improve existing service on an economical basis, the District may require over-sizing or replacement of existing facilities in conjunction with construction of an extension or improvement. Such requirements may apply on, or adjacent to, a development or subdivision, or to facilities that are "off-site." The sizing required for project needs alone will be based upon the District's Standards and Specifications (Appendix A), or hydraulic analysis

acceptable to the District that has been conducted specifically for a proposed project.

In cases where fire flows required by applicable land use plans have changed since main construction, an applicant will be responsible for the cost of upgrading an existing main to meet required fire flows specified in the District's state-approved Comprehensive Water System Plan.

If the District requires over-sizing or replacement to accommodate needs not associated with the applicant's project the District may, at its option, participate in the associated costs. The District may not be in a position financially to support over-sizing or replacing facilities at the time an applicant desires to initiate a construction project. If the District determines that it cannot provide for over-sizing or replacement until a future date, an applicant for an extension or improvement may elect itself to install the required over-sizing and/or replacement and enter an agreement with the District for future reimbursement (e.g. when future customers are added).

The following guidelines will normally apply when over-sizing or replacement is involved with an extension or improvement:

(a) Upon receiving an application for an extension or an improvement, the District will determine if over-sizing or proposed facilities or replacement of existing facilities, though not required for the new services, is best accomplished in conjunction with construction of the extension. The District's Water System Plan, the applicable land use plan, and the existing system deficiencies will be the primary factors in making this determination.

(b) If over-sizing or replacement is required, an engineer's estimate will be made of the additional cost associated with the over-sizing and/or replacement. Depending on the circumstances, public bidding may be required to permit District participation. If over-sizing or replacement is required, compensation arrangements may be included in the Extension agreement.

(c) The amount of reimbursement for replacement will depend upon the benefit received by the District, as determined by the District in its sole discretion, and will be determined on a pro-rated basis, based on the remaining useful life of the facilities to be replaced. The District will reimburse a fraction of the cost equal to the fraction of the useful life that has been expended since original installation. The useful life will be determined by the District, at its sole discretion.

(d) The amount of reimbursement for over-sizing will be based generally on the following:

(1) Mains: For pipes up to 4 inches larger in diameter than the District's design standard for the applicant's development/lot-reimbursable costs will consist of material cost differences for pipe, valves, and fittings. Reimbursable costs will also include increased material and construction costs (e.g. cost differentials for larger components, increased excavation, special bedding, testing, cleaning, etc.)

(2) Other Facilities: Cost differential evaluations for providing larger, or replacement facilities will be conducted on a case by case basis and subject to negotiations between the District and the applicant.

(3) Excluded Costs: Examples of costs that are specifically excluded from consideration include but are not limited to:

- The cost of public bidding and preparation of documents for public bidding.
- The engineering costs associated with new facilities, over-sizing or replacement.
- Costs incurred in financing, bonding, or providing insurance for construction of oversized or replaced facilities.

(e) The amount and general timing of reimbursement will be mutually agreed upon between the District and the applicant and included in the Extension Agreement. The methodology of payment will be selected by the District at its sole discretion and included in the Extension Agreement. Payment methodology will normally be chosen from one of the following options;

(1) Payment to the applicant upon acceptance of the extension or improvement.

(2) Credit against funds otherwise owed by the applicant to the District.

(3) Deferred to the future for payment in lump sum or by installment.

(4) A combination of the above.

(f) Material invoices must be submitted to the District prior to acceptance of the project.

3.4 DESIGN

3.4.1 Standards and Specifications

All water line extensions shall be designed and installed in accordance with the District's Standards and Specifications (Appendix A). However, strict application of the Standards and Specifications may be waived in certain instances, in accordance with Section 1.4 of this Manual.

3.4.2 Extension of Mains Along Property Frontages

In order to provide for continued extension of the District's system beyond properties currently developed or under development, developers will be required to extend water mains along frontages associated with parcels, subdivisions, or developments. In individual cases, the requirements for length and location of mains along such frontages shall be guided by the District's Comprehensive Water Plan. Depending on the circumstances, reimbursement may be available following main installation, under the Districts' policies for the System Development Fee (see Section 3.3.7)

Applicants will normally be required to install a main along the entire length of any and all roads or developed public rights-of-way abutting the property being developed. In some cases, a developer will be required to extend a main across the property being developed to facilitate looping of the system, in addition to extension along frontages.

In the case of development of an individual parcel of land which cannot be subdivided under the terms of applicable zoning or land use regulations, and where the parcel abuts more than one established road or developed right-of-way, the applicant will be required to extend a main only along one side of the parcel. This shall be the longest side of the parcel that abuts a road or public right-of-way.

At the District's option, the requirement for extension along frontages may be modified or waived, provided that achievement of general policy goals and objectives of the District are not thereby impaired.

The District normally installs water mains on the north and east sides of a road or street. In some circumstances, therefore, the applicant will be required to install a water main across the street or road from their property.

3.4.3 Looping

Looping of water mains may be required in order to satisfy pressure, fire flow, and system hydraulic requirements. In addition, looping may be desirable to promote system reliability. The determination of looping requirements shall be at the sole discretion of the District and will not exceed 200 feet of main per looping situation. In determining whether looping is required, the following factors shall be considered:

- The length of main that will be needed solely for looping purposes;
- Topographical constraints;
- Effects of looping on system hydraulics;

- The need for easements solely to support looping;
- Expected future development in the area, based on the applicable land use plan, as updated from time to time, municipal comprehensive plans if applicable, the District's Comprehensive Water Plan, and other available information.

If a looping requirement is imposed solely to benefit other properties or the District's system generally, then the District will reimburse the developer for any required looping over 200 feet per looping situation. However, if the looping requirement also provides a direct benefit to the property in question (e.g. to meet required fire flows), then this limitation will not apply, and the developer's responsibility will be determined by the District on a case-by-case basis.

3.4.4 Fire Flow Not Altered by Sprinkler Systems

The District encourages residential fire protection sprinkling systems. However, such systems will not be a basis for altering the District's design standards.

3.5 GENERAL CONSTRUCTION PROCEDURES

3.5.1 Technical Standards and Specifications

Construction practices shall be in accordance with the District's latest Technical Standards and Specifications (Appendix A). However, strict application of the Standards and Specifications may be waived in certain instances, in accordance with Section 3.1.2.

3.5.2 Approved Contractor

All line extensions shall be installed by a licensed contractor approved by the District. Taps to a District main may be performed only by a licensed contractor approved by the District.

"Approval" of a contractor by the District means that the contractor has met certain minimum criteria relating to past performance, experience, or apparent ability to successfully perform the work required; it shall not be deemed to create or impose any warranty upon the District as to the said contractor or its workmanship, nor shall such approval relieve the customer or contractor of their responsibility to comply in all respects with District policies and specifications.

3.5.3 Pre-Construction Conference

The developer shall schedule a pre-construction conference with the District and contractor after the Extension Agreement has been executed. The contractor shall submit a materials list and a safety and traffic control plan, if needed, for District approval before or during this meeting.

3.5.4 Deviations

The approved Extension Agreement construction plans shall be followed. No deviations will be allowed without request for change and approval in writing by the General Manager or his/her designee. The District reserves the right to order changes. The applicant shall be notified in writing of any changes.

3.5.5 Taps to Existing Main

All taps of a line to the existing main must be made by District crews or under direct supervision of District personnel, with material supplied by the owner, contractor or the District. Payment must be made in advance for this work, and for any material required, if done by the District. Tapping an existing main without adhering to District requirements for advance notification shall result in a penalty being assessed against the applicant (see Appendix B, Table B-6).

3.5.6 Service Equipment

If the owner is also constructing houses and will construct and complete houses at a rapid rate, the District, at its option, may require the owner to install the meters and service equipment coincidental with the installation of the main, or install the service with a meter yoke for later installation of the meter by the District. The service connection charge will be adjusted accordingly.

3.5.7 District Access

During the period of construction, applicants and their contractors will provide access to District personnel (including personnel on contract to the District) as necessary, to ensure compliance with District requirements.

3.6 INTERIM CONNECTIONS

3.6.1 Introduction

In general, interim connections to the District's system shall be avoided. However, under certain circumstances overall District goals and objectives may be advanced by permitting connection to a District main or a non-District water system on an interim basis. Such an arrangement shall be permitted only when the District determines that the property in question will be served in the future by a District main abutting the property. The General Manager or his/her designee shall have the authority to allow an interim connection and administer an Interim Connection Agreement. The customer shall pay all of the costs and expenses associated with obtaining interim water service.

3.6.2 Interim Connection Agreement

Any interim connection will require an Interim Connection Agreement (ICA) to be executed between the customer and the District. The ICA will specify the terms and conditions for the interim connection. These may include, but are not limited to, provisions designed to facilitate financing and connection to a main, at the time a main abutting the property is subsequently installed.

3.6.3 Fees and Charges

Prior to execution of the ICA, the customer shall pay an ICA Processing Fee, (see Appendix B).

The applicant shall pay all other applicable fees to the District prior to execution of the ICA by the District. These fees include, but are not limited to, the SDF (GFC) and SCC.

3.6.4 Easements, Property Rights and Permits

The customer shall obtain and maintain all easements, property rights and/or permits which are necessary or appropriate for interim water service. The customer must provide documentation of same as part of the ICA.

3.6.5 Termination of Interim Service

Interim service shall be terminated whenever the public water system has been extended so that permanent public service is available to the property.

The ICA will be terminated whenever a property temporarily served pursuant to an ICA can receive permanent service by connection to the District's system abutting the property constructed by a capital construction project, without extending the District's system. The customer shall pay the cost of disconnecting the interim connection and reconnecting to the main, plus any other applicable charges.

4.1 Introduction

4.1.1 Background

The District functions as a Satellite Management Agency (SMA) to assist water systems accomplish technical and administrative tasks, maximize water availability, and maintain satisfactory water quality. The satellite system program, through either ownership or contracting for a variety of services, provides for operation and maintenance of small and large water systems by the District. By operating multiple water systems, economies of scale make it possible to: (1) employ qualified personnel, (2) provide good system management and operation, and (3) meet stringent standards required by the federal Safe Drinking Water Act (SDWA) and the State of Washington.

The Satellite System Management Program enables either a private or public system to select a level of District service that will best accommodate their particular needs. In addition, the District's eligibility for State and federal funding assistance and it ability to issue bonds helps to assure reliable and high quality service at minimum cost for District owned systems.

This outline of the District's Satellite System Management Program provides customers with the philosophy, objectives, and procedures associated with available services.

4.1.2 Types of Service.

The Satellite System Management Program provides three primary options of operation and assistance services for water systems:

(a) Direct Service – ownership and operation by the District.

(b) Contract Services – routine operation and maintenance, water quality monitoring, utility billings, and other periodic tasks for systems not owned by the District. Contract services are available to private and public systems at a rate commensurate with the service.

(c) Support Assistance – one time or long-term support to systems requiring technical, professional, or special assistance on a more limited scale. Charges for support assistance are determined in advance, generally on a time and materials basis.

These three service options are designed to respond to differing water systems and to support a comprehensive program of water system management throughout the District's service area. Decisions on establishing a level of service will depend on individual system needs, plans for improvement, and growth pressures, as well as the ability of the District to provide desired services in a cost effective manner. Each situation will be carefully examined by the District and discussed with the applicant interested in satellite system service or support.

The District will perform Direct or Contract Satellite management only for systems that comply with its minimum health, safety, and water quality standards. Systems failing to meet minimum standards must be brought up to standards in accordance with District Satellite System Management policies.

Exhibit 4-1 presents a diagram of service application and review procedures, described below, which the District uses in evaluating requests for implementing any of the three service options. Some steps involved in the process are required regardless of which service is being requested. First is the initial contact between the applicant and the District. During initial contact, applicants can discuss needs with the District and receive a copy of the specific policies and procedures which pertain to their requests. The applicant's written letter of request will initiate the District's formal evaluation of system needs, capabilities, and deficiencies. The District will then request specific data or background information needed to survey the water system and evaluate the District's ability to implement one of the three service options.

4.2 POLICIES and PROCEDURES FOR DIRECT SERVICE

Direct Service requires the transfer of system ownership and operational responsibilities from either an existing or new system to the District. The Direct Service option enables the District to assume complete responsibility for water systems at any location throughout the District's service areas. Water systems adjacent to or within a water district or municipality's service area will be directed to approach that water district or municipality for direct service before submitting a request to the District. Under the Direct Service option, the applicant and system customers are subject to all the policies, procedures, standards and specifications set forth in this Policies and Procedures Manual. Water rates and charges will be imposed as applicable. Depending on the amount of system upgrade work and other expenses associated with system transfer to the District, an additional assessment may be levied.

The District may be required to assume specific financial or regulatory liabilities for systems that transfer ownership. The interests of all citizens, therefore, must be considered for any proposed action.

Systems that will be transferred to District ownership (Direct Service) must also meet minimum construction and reliability standards. Different criteria will be applied for Group A and B systems as appropriate.

4.2.1 Conditions

The District shall establish, as a part of such utility Satellite Water Systems, which are separate and apart and remote from each other, under the following conditions:

(a) Consideration by the District of a proposed Satellite Water System shall be instituted by the application of a group of water users or a water purveyor within the service area of the proposed Satellite Water System.

(b) If a proposed Satellite Water System is in such proximity to an existing District or satellite system that it could reasonably qualify under District policy as an extension of or merger with such existing system, it shall not qualify for consideration as a Satellite Water System under this Section.

(c) Satellite Water Systems may consist of new construction by the District, or the acquisition of existing or new systems, or the acquisition and improvement of existing systems, or any combination thereof. In any case, however, the system shall be required to meet the District's standards for water systems and shall be operated, insofar as reasonably possible pursuant to the general policies and procedures of the District's Water Utility, except as otherwise provided herein.

(d) Each Satellite Water System shall be self-supporting and the financial condition of any existing District water system shall not be adversely affected as a result of the establishment or operation of the Satellite Water System.

(e) The applicant must possess water rights adequate to supply the project, and these water rights must be transferred to the District.

4.2.2 General Policies and Procedures

The general policy and procedures for implementing the Direct Service option are as follows:

(a) Direct service can be provided for both Group A and B systems.

(b) Purchase of private water systems is at the District's discretion and will require a financial feasibility analysis and must be based on an assessed value of the system.

(c) Systems that are certified to meet District, all local health districts, and Washington Department of Health (DOH) standards during construction will not be subjected to the survey and upgrade process. Systems that may desire Direct Service from the District at some point in the future should meet the following requirements during design and construction.

- The system should be designed and constructed in accordance with the Standards and Specifications of the District (Appendix A).
- The design and monitoring of construction for all new systems should be coordinated with the District.
- Prior to transfer of ownership of a new system to the District, the designer of the system must certify that it has been built in accordance with the approved design.

(d) For systems that have not been certified as being constructed in accordance with District standards, a survey and engineering evaluation will be conducted and a schedule will be developed to accomplish system upgrades which are required to meet applicable District, Local, State, and federal standards. Certain improvements, especially deficiencies related to water quality, safety and system reliability, will be required to be completed prior to or in conjunction with system transfer to the District.

(e) Capital improvements and purchase costs will be financed by the system's owner(s)/customers through rate surcharges, assessments, GFCs, and/or District arranged financing. District financing options may include State and federal grants, cash contributions, Local Utility District (LUD) bonds, or similar financing arrangements.

(f) Major system improvements may require the formation of an LUD or similar financing arrangement.

(g) An estimate of the cost of required capital improvements will be provided to and agreed upon by the satellite system's owners before the District assumes ownership or operational responsibilities. All systems not installed under the certification process outlined above will be handled on a case-by-case basis to determine charges for the preliminary survey and engineering evaluation.

(h) The District's attorney will establish the appropriate authorization and legal instruments required for the transfer of system ownership to the District.

4.2.3 Review and Approval Procedures

(a) The applicant for a proposed Satellite Water System shall advance to the District the estimated costs for all preliminary and full studies undertaken to determine the feasibility of such a proposed system.

(b) A preliminary feasibility study shall be performed to establish the system's capabilities, deficiencies, and compliance with appropriate regulatory and operational criteria. The study also will be used to determine the estimated costs of needed system improvements, and anticipated operation and maintenance expenses. The intent of this preliminary feasibility study is to attempt to identify at an early stage any major factor which renders the proposal not feasible. If the Manager finds from the preliminary study that the proposal is not feasible, the proposal shall be rejected.

(c) A meeting or other appropriate method will be used to review the preliminary feasibility study results and preliminary cost estimates with the satellite system's existing owner(s)/customers. The owner(s)/customers may either withdraw the request for Direct Service or continue the process by authorizing the District to prepare a full feasibility study to more accurately determine the work and costs required to bring the system up to required standards.

(d) If the preliminary feasibility study does not cause a rejection of the proposal, and upon the advancement of costs, the District may undertake a full feasibility study to investigate in detail all issues which may affect the feasibility of the proposal. The intent of the full feasibility study is to add to the information developed in the preliminary feasibility study sufficiently to allow for a final determination as to the feasibility of the proposed Satellite Water System.

The District feasibility study will include a detailed analysis of the system's operation, required capital improvements, and projected cost of operation and maintenance. It will also contain a preliminary financing plan for improvements and proposed rate structure based on:

- Minimum improvements required to meet quality, safety, and reliability standards.
- Improvements required to upgrade the system to the Standards and Specifications of the District.
- Source, storage, metering, fire flow, and other desired improvements.

(e) For existing systems, after a review of the full feasibility study is conducted with the owner(s)/customers, they may withdraw the request for service or with the assistance of the District, initiate proceedings to transfer ownership.

(f) Improvements required to upgrade the system to District standards (particularly those associated with quality, safety, and reliability), will be completed prior to or in conjunction with system transfer. Some improvements may be deferred until normal repair or replacement occurs.

(g) If capital costs for necessary improvements can be financed reasonably by the owner(s)/customers, then the transfer of ownership may be contractually established. A list of items necessary to accomplish a transfer of ownership may include but is not limited to:

- Bill of Sale
- Title Report and Property Deeds
- Assignment of Easement and Franchises
- New Easements, if required
- Assignment of Water Rights
- Authorization to Collect Rates and Fees
- Hold Harmless Clause
- List of Owners, Customers, and Addresses
- Maps, Records, Equipment Manuals and Data, and Other Information

(h) If necessary and found to be economically feasible, the District Commissioners may create an LUD in accordance with Title 54 RCW.

Once an LUD is formed, ownership of specified facilities, equipment, and data will be transferred to District ownership.

(i) New systems, whose initial design, construction, and approval have been conducted in accordance with the District's design standards and inspection requirements, will not require a preliminary survey or engineering evaluation. The transfer of ownership can occur either contractually or by LUD formation as described above. The system must be certified in accordance with Chapter 246-290 WAC to verify that it was built and approved in accordance with the requirements of the DOH, all local health districts, and the District prior to transfer of ownership.

4.2.4 Submittal to Commission

A completed full feasibility study, together with the recommendations of the staff, may be submitted to the Commission for its consideration and

determination as to the establishment of the proposed Satellite Water System and any conditions thereof.

4.2.5 Refund of Advances for Feasibility Studies

In the event acquisition of an existing Satellite Water System is approved by the Commission and funds to finance its acquisition and/or construction (including the cost of the feasibility studies) are received by the District, then the advances for its feasibility studies shall be returned to the applicant.

4.2.6 Agreements and Conveyances

Satellite management, when approved by the Commission, shall be implemented by agreements and conveyances in a form acceptable to the District and prepared by District staff at the expense of the applicant.

4.2.7 Rates, Fees and Charges

Rates and other charges pertaining to the establishment and/or operation of a Satellite Water System shall be such as to reflect the need that such system be self-supporting.

Engineering fees for non-standard engineering services shall be established in the manner described in Section 2.6.5 of this Policies and Procedures Manual, for non-standard services.

4.3 POLICIES and PROCEDURES FOR CONTRACT SERVICES

A service contract is utilized to establish the frequency, duration, cost, and specific responsibilities of the District in performing services. Services can be contracted on a continuous basis to provide routine system operation and maintenance, periodic well performance monitoring, required water quality monitoring, periodic equipment maintenance, scheduled repair activities, on-call emergency assistance, utility billing services, and/or other tasks.

4.3.1 Conditions

Listed below are the major policy and procedural considerations for contract services:

(a) System improvements may be required to eliminate deficiencies associated with system reliability, safety, and water quality. Improvements required by the District will be completed prior to the District initiating service unless the District agrees to accomplish improvements as a part of the contract.

(b) Contract services will be limited to systems where such services are cost-effective for the District.

(c) Financing for system improvements is the applicant's responsibility.

(d) The District will only provide services to systems where facilities are located on property owned by the system, public rights-of-way, utility easements, or where authorization for unrestricted access to all facilities that may require servicing, maintenance, repair or replacement, can be obtained.

(e) If the applicant intends to expand the system's service area, the District must approve of the expansion and/or be given the option to discontinue contract services.

(f) They must designate a reasonably available individual to be an official contact with the District.

(g) The District must receive, as appropriate, the legal authority from the applicant to contract, assess costs, and be held harmless from service activities during the normal course of operations.

4.3.2 Review and Approval Procedures

(a) Once applicants have requested Contract Service assistance, they will be required to pay a fee to the District for the cost of conducting a preliminary feasibility study. The District must receive this survey fee and all requested system data before the District will conduct a preliminary feasibility study of the system. The study is designed to identify all existing material defects, public health deficiencies and operational problems.

(b) The District will provide the applicant a list of all required improvements with an estimate of the costs associated with those improvements.

(c) After reviewing the preliminary feasibility study results and evaluating the cost estimates, the applicant may either withdrew the request for Contract Service or authorize the District to establish firm costs for the particular details of requested service. When determined, firm costs will be reviewed with the applicant.

(d) If the costs are acceptable, the applicant will complete specified system improvements and enter into a contract with the District which specifies the details, frequency, duration, and costs of the service program.

(e) If the applicant withdraws the request for service at any time in the process, the District will retain the preliminary feasibility study fee.

(f) The General Manager shall have the authority to execute a service contract on behalf of the District.

4.4 POLICIES and PROCEDURES FOR SUPPORT ASSISTANCE

The Support Assistance Program provides general assistance for improving water utility service within the District's service area. Primarily, the program is designed to support and assist smaller water utilities. Services may be provided either on a one time or continuous basis.

Support assistance includes such items as operator training, information system support, and purchase of equipment and supplies on a cooperative basis. Volume buying can reduce many of the costs of operating a small water utility.

There are several categories of services that the District can provide on a one-time basis. Cost associated with providing these services can be established on a time and materials basis or through a lump-sum contract. Examples of services include:

- Loan equipment or supplies to a system to handle a special circumstance.
- Provide engineering and/or technical expertise to a system that lacks necessary staff for certain tasks.
- Provide financial management/grant procurement assistance.
- Develop water system computerized maps.

In addition, there are several categories of continuous service that the District can provide including, but not limited to:

- Leadership and support to smaller utilities to ensure that its views are considered in formulating local and state regulatory actions.
- Administration of programs for joint purchasing of equipment and supplies to achieve economies of scale for smaller utilities.
- Provide technical support programs for operator training.

4.4.1 Conditions

The support assistance program relationship is one that will not impact on a utility's wish to remain autonomous and operate at existing expenditure levels. The District is willing to evaluate any form of assistance to help utilities improve their level of service.

4.4.2 Review and Approval Procedures

(a) The District and the applicant will execute either a formal contract or written agreement which will specify the exact responsibilities, staff, equipment, and other details required of the District in providing assistance.

(b) The contract or agreement will establish the charges associated with providing service.

(c) The General Manager shall have the authority to execute a contract or agreement for support assistance, on behalf of the District.

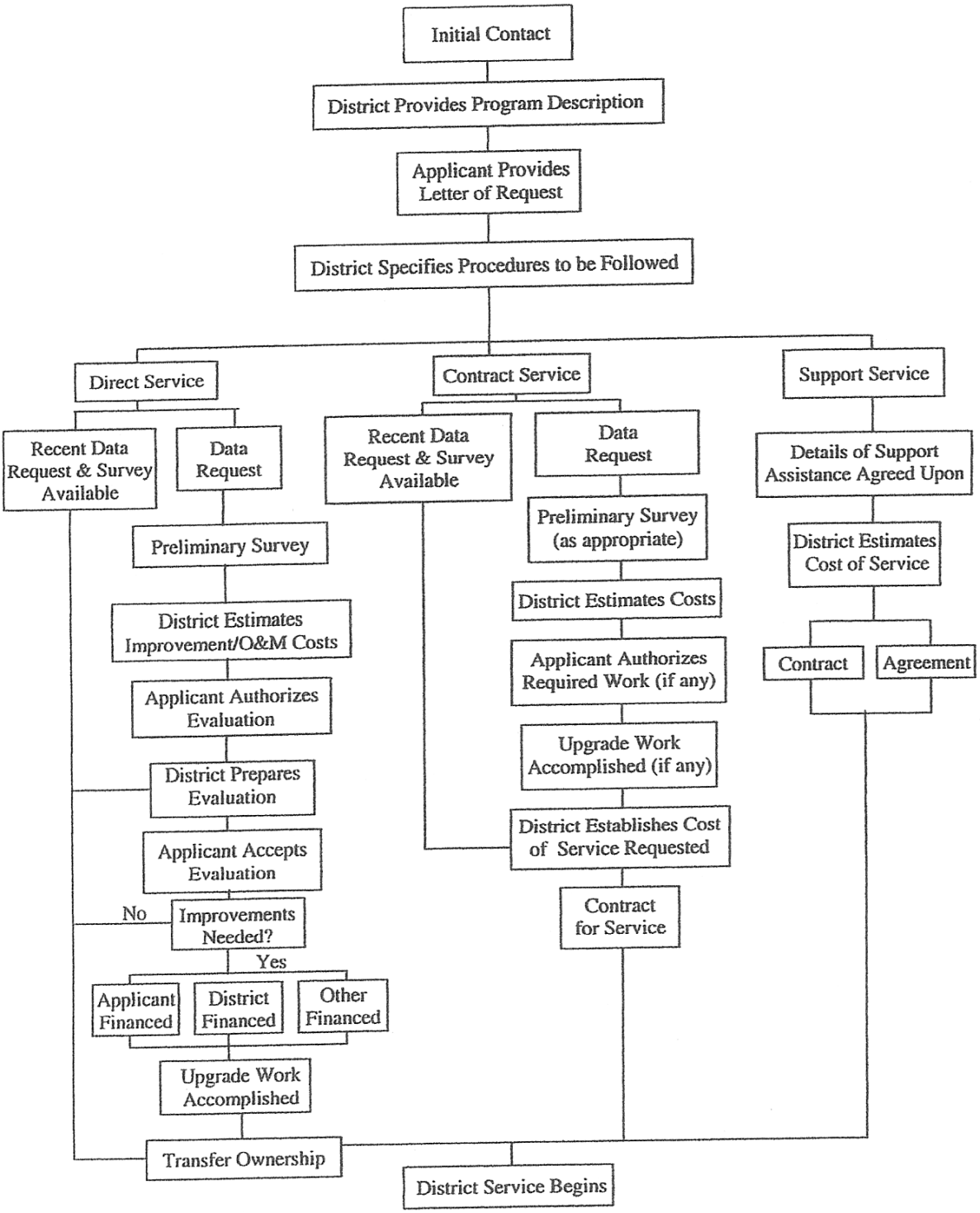

Exhibit 4-1 Satellite System Program Service Application and Review Procedures

Appendix A
Standards and
Specifications for Design and Construction

A1 Introduction

This Section outlines the general and specific construction requirements for water systems operated and maintained by or for the District. The District will continue development of standards for all satellite systems owned by the District.

Construction will meet the state and county minimum requirements for construction where the water system is located.

For water systems located in Pierce County, Pierce County Coordinated Water System Plan regulations must be followed, including Pierce County Code Chapter 17C.60.165 (fire flow) and Chapter 19D.130 (design standards)

Thurston PUD
Design and Construction Standards

1. Project Review Procedures

Most system modification projects shall be subject to plan and report preparation and review procedures, as required by the Department of Health (DOH), as the majority of system upgrades will be reviewed by DOH. Improvements such as backup generators, new sources, treatment, disinfection, and storage are all projects which require DOH review and approval. Construction of distribution mains that have been identified in previous water system plans may be installed by TPUD without project specific review and approval. These projects may be developed by the District or by other entities. In either case, plan development and review shall adhere to the following procedures:

1. All plans for distribution mains shall bear the seal of a licensed professional engineer in the State of Washington.

2. Plans prepared by others, not directly for the District, shall be reviewed by the District for compliance to a) the size and alignment planned in the earlier WSP, b) compliance with details and specifications outlined in the District's construction standards, c) compliance with DOH standards, and d) compliance with other construction standards and normal practices within the industry.

3. The District shall issue written comments to the plan preparer, if necessary, or shall similarly issue written approval of the construction plans. No construction shall be permitted prior to said written approval.

2. Policies and Requirement s for Outside Parties

All prospective developers who desire to obtain service from any of the District's systems shall do so under the planning guidelines set forth in the WSP for the individual system and according to the development and construction standards of the District. Other specific requirements for non-District sponsored expansion of a system include the following:

1. All required engineering for development of main extension plans shall be prepared by the developer's engineer, at no cost to the District.
2. Construct all necessary improvements designed in 1. above and as approved by the District, at no cost to the District.
3. Provide written certification from the developer's engineer that all construction has been completed in accordance with the approved plans.
4. Provide sealed as-constructed documents for the completed installation.
5. Provide successful bacteriological tests following installation.
6. Provide evidence of successful flow testing, if applicable.

7. Prepare, sign, and record any easements, bills of sale, and related documents required for placement of the installed improvements within the ownership of the District and for the District to properly manage and operate said improvements.
8. Pay all review, inspection, and connection fees, as well as special assessments, if any, related to the project in accordance with the District's fee schedule and as reasonable and customary.

3. Design Standards

System design standards for various aspects of water system development and operation are taken into consideration by the District. Following is a summary of the applicable guidelines and regulations used.

3. 1 Water Quality Parameters

Primary and secondary drinking water standards are established by the Washington State Department of Health through and in conjunction with the Environmental Protection Agency. Through WAC 246-290, specific procedures and frequencies are established for monitoring and testing of a variety of contaminants ranging from naturally occurring minerals (such as iron and manganese) to manmade pollutants (e.g. Pesticides, petroleum products, and sewage).

3.2 Average and Maximum Daily Demands

Values should be determined by actual meter readings. For new systems, analogous water systems should be used to estimate the values.

Peak hour demand

Peak hour demand criteria is taken from the "waterworks standards for group a public water systems". The standards establish expected peak hour demand based upon empirical data obtained from existing water systems in Washington State and as reported in various publications for water systems nationwide. Peak hour demand (PHD, or sometimes MID) is the flow volume required, usually during brief periods of the morning and evening, when water use by the community is at its highest (morning showers, evening cooking, washing, etc.) PHD is a function of the number of houses connected to the system and is a result of coincident schedules of the members of those households. PHD is not expected to vary significantly between systems, whether or not services are metered, since peak hour use is a "needs" driven quantity rather than an "elective" use of water.

Storage Requirements

Storage requirements are taken from the standards cited earlier. Storage is a combination of a variety of types of storage including equalizing storage (that storage required to buffer peak demand from system supply capacity), standby storage (that volume required to provide a degree of reliability), fire protection, and operational storage (the volume required to operate a reservoir which can include overboard protection, well pump cycling, dead storage at the base of the reservoir, etc.). Each of these types of storage is discussed in detail for individual systems in the water system plans for each water system.

Fire Flow Requirements

The District serves water systems in several counties and multiple jurisdictions. Fire flow requirements vary between jurisdictions. Fire flow is not required for most the District water systems as the systems are typically small and rural. Generally, local Fire Marshals do not require fire flow for low density, small, or rural development. Specific requirements for fire protection are addressed in each of the water system plans.

For water systems located in Pierce County, Pierce County Coordinated Water System Plan regulations must be followed.

Minimum System Pressure

Minimum system pressure is established by DOH at 30 pounds per square inch, available at the service meter or property line under PHD conditions.

Minimum Pipe Size

Existing distribution mains vary widely from system to system but are generally 2-inch to 12-inch in diameter. New construction and required upgrades to the system will be made with a minimum of 6-inch diameter pipe per the criteria established in the waterworks standards.

Telemetry Systems

Most systems owned or operated by the District do not contain, nor have a need for, telemetry systems. Some of the larger systems have been equipped with auto-dialers to signal power outages or other emergencies. New construction will assess the need for telemetry and remote annunciation using the criteria outlined in the waterworks standards.

Backup Power Requirements

All systems with "closed" booster pump stations are required by the waterworks standards to have a backup power supply. The District has provided backup power for many of its systems but not for all. While not necessarily required to install back up power on all existing systems, the District has embarked on a program to install backup power when customers from owned water systems request a special assessment to do so. Major renovations of systems which include power upgrades and pump house reconstruction, are also including installation of a transfer switch and generator receptacle. All new construction will address backup power per the waterworks standards.

Valve and Hydrant Spacing

Hydrants are not required for systems without fire flow requirements, as is the case for most of the District systems. Where required, new hydrants and drafting ports at storage reservoirs will be installed per local fire marshal requirements.

Mainline valves in new construction are installed at a maximum spacing of 1,000 feet. A minimum of two valves shall be installed at every tee and three valves shall be installed at every cross.

4. Construction Standards

TPUD has developed system-wide standards for construction including standard specifications, construction details, and general construction requirements. All construction, whether undertaken by the District or by public bid, include these standards as conditions of the contract.

5. Construction Certification Procedure

All completed construction projects shall be inspected and certified by the design engineer. In addition, the District shall monitor construction performed by public bidding to ensure that contract requirements and construction standards are being met. The design engineer shall also be required to provide a degree of construction observation, as necessary, in order to certify that the completed project meets the requirements of the final approved design. At a minimum, contractors shall provide proof of disinfection and successful coliform test results. Contractors shall also call for and conduct a pressure test, when specified, that shall be witnessed by the design engineer and the District. All construction contracts shall include stipulations that the contractor maintain one set of fully completed and accurate as-constructed documents to record any deviations from the contract plans or to note the discovery of below grade utilities or other structures. Successful recording of said documents shall be required for final payment to the contractor. No deviations from the approved plans shall be allowed without prior approval from the District, the design engineer, and DOH, where appropriate.

Thurston PUD (District)
General Construction Standards

1. General Conditions
   - 1.1. Instructions to Bidders
     - 1.1.1. Request for Bids
     - 1.1.2. Select Bid List
     - 1.1.3. Qualified Bidders
     - 1.1.4. Intent of Specifications
     - 1.1.5. Specifications
   - 1.2. Design Engineering Drawings
   - 1.3. Local Conditions
   - 1.4. Contract
     - 1.4.1. Notice of Award
     - 1.4.2. Contract Document
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     - 1.4.4. Work Schedule
     - 1.4.5. Completion Time
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   - 1.5. Submittals
   - 1.6. TPUD Standard Details
   - 1.7. Safety
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   - 1.9. Locate Service
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   - 1.11. Owner's Rights and Obligations
     - 1.11.1. Owner's Right to Stop the Work
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   - 1.12. Pre-Construction Meeting
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   - 1.14. Materials
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   - 1.17. Definitions
2. Construction Contracts
   - 2.1. New Construction
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   - 2.4. Contract Administration
   - 2.5. Contract Change Orders
   - 2.6. Addenda
   - 2.7. Exhibits
   - 2.8. Payment for Work
     - 2.8.1. General Contract
     - 2.8.2. Progress Payment
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     - 2.8.4. Payment for Change Orders
     - 2.8.5. Payment of Contractor's Subs and Supplies
3. Construction Specifications
   - 3.1. Building Construction

Thurston PUD
General Construction Standards

1. General Conditions

1.1. Instruction To Bidders - All contractors or sub-contractors wishing to perform work for the District are hereby instructed that as a precondition for bidding on such work they shall, in accordance with these general construction standards:

a) Submit a Small Work Application found on the District's website at www.ThurstonPUD.org and request to be approved as a District bidder.

b) Thoroughly review the latest version of the District's general construction standards and all provisions thereof and all additional specifications included therein by reference.

c) Receive written approval and acceptance from the District as a qualified bidder.

All contractors shall comply with all fair labor practices and state statues. Each bidder and subcontractor are required to be properly registered with Washington State Department of Labor and Industries (over $500.00 of work) prior to acceptance of bid. No bidder may withdraw a bid for at least thirty (30) days after the scheduled time of receipt of bids except as noted in the instruction to bidders. The owner reserves the right to reject any or all bids or to waive any irregularities or informalities.

1.1.1. Request for Bids - Plans, specifications and instructions may be obtained at the PUD Headquarters, 1230 Ruddell Rd SE, Lacey WA 98503, phone number 360-357-8783. The District will invite "qualified bidders" to bid various construction jobs as they become available.

1.1.2. Select Bid List - The District will, from time to time, solicit apparent qualified contractors to ascertain their interest in bidding District work. The District will maintain a list of "qualified bidders." The addition or removal from the District's list of qualified bidders shall be at the sole discretion of the District.

1.1.3. Qualified Bidders – Construction contracts shall be awarded to the qualified bidder submitting the lowest, responsive and best bid. During the District's evaluation of each bid, the District shall determine, at its own and sole discretion, whether a bid is responsive and adequate to perform the work and what bid is the lowest, best and acceptable to the District. Approval or non-approval of bidders, or bid proposals, shall be at the sole discretion of the District. The District's evaluation of bidders qualifications will be based upon, but not limited to, prior work experience, credit worthiness, industry reputation and the District's evaluation of the contractor's ability to read, evaluate, and follow the plans and specifications as

well as the District 's evaluation of the prospective bidder's ability to perform the work in accordance with the required schedule. Any bidding contractor must examine the site and all related physical conditions and judge for themselves as to the location and character of the proposed work, amount, and quality of the materials required and the work to be done, and other features encountered. If there is any doubt or obscurity as to the meaning of any part of the plans or specifications, it shall be brought to the attention of the District prior to bidding or execution of change order so that any necessary explanations or corrections may be made before submitting the bid. Failing such inquiry, the District's interpretation of the meaning shall be final and non-disputable. The District reserves the right to reject all bids and not award a contract or deem any bid unacceptable.

1.1.4. Intent of Specifications - It is the intent of these specifications to fully delineate the scope of work to be performed and to form the basis for a construction contract. All work performed for the District must in every detail comply with these specifications; any deviation must be pre-approved as specified in section 2.5 below. Any specification or requirement perceived to be inadequate or inappropriate must be clarified in writing prior to commencing any work. Failure of any bidder to request such clarification shall indicate bidder's acceptance of the District's interpretation of those specifications.

1.1.5. Specifications - Each bidder shall review and understand the "standard specifications for municipal public works construction," latest edition thereof, prepared by Washington State Chapter of American Public Works Association (APWA), and revisions and supplements thereto. Said standard specifications are made a part of these construction standards by this reference and hereby included as a part of and a requirement hereto. Should any conflict exist or develop during the course of the work, the District standard specifications shall prevail unless changed or clarified by a change order or addendum as described in section 2.5 below.

1.2. Design Engineering Drawings - For projects that include design engineering drawings as provided by the District's licensed design engineering consultant, "design engineer"; such drawings shall be considered a part of these specifications and shall be identified as an exhibit to the subject contract. The water system shall be constructed according to the approved plans. Any deviation from the approved plans will require approval from the design engineer and the health department. Should any conflict exist or develop during the course of the work, these District standard specifications shall prevail unless changed or clarified by a change order or addendum as described in section 2.5 below.

1.3. Codes - Bidders are notified that they must carefully examine the plans, special, supplemental and standard specifications, and familiarize themselves with all state, city, county, and other laws pertaining to this improvement. Where design engineering drawings and these specifications fail to address the requirements of any applicable state, local or duly authorized jurisdiction, the requirements and codes of the subject

governing authority shall prevail. Contractors must also examine and judge the locations and character of the proposed work, the amounts and quality of the materials required, and the work done, and other features encountered. If there is any doubt or obscurity as to the meaning of any part of the plans and specifications, it must be brought to the attention of the design engineer in writing in order that the necessary explanations or corrections may be made before submitting the bid.

1.4. Contract - The bidder that is awarded the contract will be required to enter into a written contract with the District. The contract must conform to the blank form attached hereto. See appendix ii. Prospective bidders are advised to fully comprehend the provisions of this contract before submitting bids;

1.4.1. Notice of Award – The District will provide a written notification of the acceptance of the proposal.

1.4.2. Contract Document – Final Contract will be signed by bidder and returned to the District.

1.4.3. Notice To Proceed - The District will provide a written notification within 10 days of receipt of an executed contract and the District's verification of contractor having met all conditions of these construction standards shall issue a "notice to proceed". See appendix ii.

1.4.4. Work Schedule - Contractor shall, within 15 days of notice of award, provide owner with a schedule of their intended progress.

1.4.5. Time of Completion - All work as required under these contract documents, shall be completed within 150 calendar days of the date of notice to proceed unless otherwise specifically stated in the contract. Receipt of such notice to proceed shall be considered day one (1) unless otherwise specified. See appendix ii. The stipulated time shall allow for all equipment and component delivery and sufficient time for obtaining permits, installation and construction. The contractor shall diligently pursue completion of the project within the time specified or as such time as may be extended in accordance with these standard specifications.

1.4.6. Shut Down - Any shut down of the work once a notice to proceed has been issued including shutdowns for weather, strikes or unforeseen conditions, will not constitute an extension of contract time unless specifically agreed to in accordance with section 2.5 below.

1.4.7. Liquidated Damages - Should the contractor not complete the project within the time specified or as extended above, the District may, at their sole discretion, deduct as liquidated damages, $100 per day for each day after the completion date that the project remains substantially incomplete. Said liquidated damages are not punitive but reflect actual costs to the District from not having the facilities available by the contract date.

1.5. Submittals - Submittals for all equipment or devices must be submitted to the District and approved by the District prior to use in execution of the work. Such submittals must include, at the minimum: manufacturer; model and or identification numbers; descriptive brochure; repair maintenance and parts information.

1.6. The District Standard Details - To facilitate and standardize construction, the District has created a series of standard construction details, see appendix IV; figures 1 through 26. All construction work performed for the District must fully comply with the District's standard details unless specifically changed per section 2.5 below.

1.7. Safety - The contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the contract. The contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

a) All employees on the job and other persons who may be affected thereby;

b) The work and materials and equipment to be incorporated therein, and

c) Other property at the site or adjacent thereto.

The contractor shall give notice and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury or loss. The contractor shall promptly remedy damage and loss to property caused in whole or in part by the contractor, a sub- subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the contractor is responsible except for damage or loss attributable to acts or omissions of the owner or design engineer or by anyone for whose acts either of them may be liable and not attributable to the fault or negligence of the contractor. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA/WISHA safety requirements.

1.8. Traffic Control - Contractor shall provide traffic control plan(s) as required in accordance with APWA standards.

1.9. Locate Service - Contractor shall call underground locate at 1-800-424-555 a minimum of 48 hours prior to any excavation.

1.10. Insurance - Contractor shall provide owner with proof of all insurance as may be required by all current rules and regulations. Such insurance shall include, but not be limited to the following:

a) Workman's Compensation Insurance: the contractor is required to furnish to the owner written affidavit from his carrier showing his compliance with the provisions of the Washington worker's compensation act. The minimum limits of liability under worker's compensation shall be as follows:

State - Statutory
Federal - Statutory
Employer's Liability - $1,000,000
Benefits Required By Union Labor Contracts - Comply With Local Union Wage Scale

b) Contractor's Comprehensive General Liability Insurance: the contractor shall obtain and keep in force during the term of the contract and until final acceptance, comprehensive general liability insurance including coverage for completed operations, and comprehensive automobile liability insurance with not less than the following limits of liability. Policy shall include premises - operations, independent contractor's protective products and completed operations and broad form property damage coverage.

Commercial General Liability:	
Bodily injury and property damage each occurrence	$1,000.000.00
Aggregate:	$2,000,000.00
Aggregate Products And Completed Operations:	$2,000,000.00

c) Aggregate products and completed operations insurance shall be maintained for a minimum period of two (2) years after final payment and the contractor shall continue to provide evidence of such coverage to the owner on an annual basis.

d) Insurance Coverage Certificates. Prior to the commencement of work, the developer shall furnish to the owner acceptable proof of insurance on a form acceptable to the owner. All insurance certificates must have the project title and address. All insurance certificates shall specifically require forty-five (45) days' prior notice to the owner of cancellation or any material change. Owner shall be named as an additional insured on all certificates of insurance.

Contractor shall require all subcontractors to maintain insurance coverage that meets the minimum requirements of this section.

1.11. Owner Rights and Obligations - The owner shall furnish and pay for surveys and a legal description of the site. The contractor shall be entitled to rely on the accuracy of information furnished by the owner but shall exercise proper precaution relating to the safe performance of the work. Except for permits and fees which are the responsibility of the contractor under the contract documents, the owner shall secure and pay for other necessary approvals, easements, assessments and charges required for the construction, use or occupancy of permanent structures or permanent changes in existing facilities.

1.11.1. Owner's right to stop the work if the contractor fails to correct work which is not in accordance with the contract documents, the owner may issue a written order to the contractor to stop the work, or any portion thereof, until the cause for such order is eliminated; however, the right of the owner to stop the work shall not give rise to a duty on the part of the owner to exercise this right for the benefit of the contractor or any other person or entity.

1.11.2. Owner's right to carry out the work if the contractor defaults or persistently fails or neglects to carry out the work in accordance with the contract, the owner after 10 days' written notice to the contractor, and without prejudice to any other remedy the owner may have, may make good such deficiencies and may deduct the reasonable cost thereof, including owners expenses and compensation for the third party services made necessary thereby, from the payment then or thereafter due the contractor.

1.12. Pre-construction Meetings - A pre-construction meeting shall be held with the District's project manager and design engineer prior to the start of construction.

Workmanship and Inspections - Workmanship shall be of the best quality and none but competent mechanics shall be employed and shall be under the supervision of a competent foreman; and all completed work shall present a neat and proper appearance. All workmanship shall be in accordance with applicable local jurisdictions and shall comply with the most current copy of the state of Washington standard specifications for road, bridge and municipal construction, Department of Health regulations and American Water Works Association standard specification. All work and materials shall be subject to inspections at any and all times by the District's design engineering or architectural representative, and or the District's project manager. Should the contractor elect not to appear on the job when only subcontract work is being performed, contractor shall, by letter to the District's project manager, delegate this responsibility to one person in each subcontractor firm. Delegation of such authority will not relieve the contractor the responsibility for all work and material furnished, nor shall this release the contractor of his obligations, or liability under the contract and the Contractor's bond.

1.13. Materials - All materials must be of the highest industry standards and shall meet the quality requirements herein specified, and on the project drawings, specifications, or an approved equal. All materials shall be new, of the best quality, and free from defects, and must at least conform to all requirements of AWWA and APWA/WSDOT standard specifications latest version thereof. Each type of materials shall be of the same make and quality. All electrical materials, equipment and devices shall be approved by the Underwriters' Laboratory, Inc. for the purpose for which they are used. All plumbing and piping equipment shall meet the Appropriate American Water Works Association Standards.

Water mains larger than 2" and smaller than 14" in diameter shall be PVC AWWA C900 class 200. All water lines 2" or smaller shall be PVC schedule 80. All water mains 14" diameter and larger shall be ductile iron cement mortar lined thickness class 50.

All distribution system gate valves shall be resilient wedge, NRS (non-rising stem) with a-rings seals. Valve ends shall be mechanical joint or ANSI flanges. Valves shall conform to AWWA C509-80. Valves shall be Mueller, N&H, Claw, Kennedy or approved equal.

All valves inside the pump house 3" and smaller shall be bronze gate or ball valves. All valves 4" and larger shall conform to AWWA C509-80. All valves inside the pump house shall have hand wheels installed.

1.14. Substitution - In order to establish a basis of quality, certain materials or articles are specified by designation one or more manufacturers' names, brands or numbers. It is not the intent of the specifications to exclude other materials or articles that measure up to the standard of those specified. If the bidder desires to bid on materials or equipment other than those specified, he/she must obtain written approval from the District prior to bidding and submit complete data and samples as may be required to the District prior to bidding. Such samples must be submitted to the District at least six (6) working days prior to bid opening. Requests shall be in writing and in duplicate. Approved materials or equipment will be added to contract document by addenda.

1.15. Guarantee - The contractor shall be responsible for and guarantee that all items installed and workmanship performed by the contractor meet with the requirements of the plans and specifications, are first class in every respect, and that the contractor shall make good any defects or inoperable conditions which may develop within one year from the date of final acceptance.

The contractor shall furnish to TPUD any guarantee or warranty furnished as a normal trade practice in. Connection with the purchase-of any equipment, materials or items used in the construction of the project.

Final acceptance of the project shall not constitute acceptance of any unauthorized or defective work or material. TPUD shall not, after final acceptance, be barred from requiring the contractor to remove, replace, repair or dispose of any unauthorized or defective work or material or from recovering damages for any such work or material.

1.16. Definitions-

Owner:

Thurston PUD (District)
1230 Ruddell Rd SE
Lacey, WA 98503
(360) 357-8783

Contractor: The party having submitted a bid acceptable to the District and having

executed a construction contract for the completion of a specific project.
Design Engineer: The licensed professional design engineering firm or individual designated by the District as the technical consultant responsible for the design, supervision and certification of the subject work, "design engineer."

Contract Document: The executed contract document as defined in section 1.4 of this document including all referenced design engineering drawings and or exhibits and all provisions of the latest edition of the District general construction standards.

Work: All construction improvements and related labor, supplies or subcontracts necessary to fully complete the project as defined in the contract document.

Billing Period: The District billing period shall commence on the first day of any month and end on the last day of said month.

2. Construction Contracts

All District construction contractors shall be designated as one of the following three types of contracts:

a) New Construction - All construction of new buildings and/or water systems are expected to fully comply with the design engineer's drawings and these specifications.

b) System Rehabilitation - All contracts for system rehabilitation work shall include the requirement to bring all affected areas up to these District's general construction standards and the project design engineer's or architectural drawing.

c) General Repairs - Any District contract for general repairs shall be for only the work specifically delineated and shall not require bringing any other part of the system up to the District's construction standards.

2.1 Contract Administration - All District construction contracts shall be administered by the District's designated construction administrator. The District may engage an outside design engineer to design and/ or supervise various portions of the work and be responsible for certification and acceptance by Washington State DOH. However, the District's project manager shall have the final authority relative to the overall project acceptance and authorization for payment.

2.2. Contract Change Orders - No change to the project shall be undertaken and will not be paid for by the District unless a properly executed change order has been signed by both parties prior to commencement of the work or change.

2.3. Addendum - Any addendum issued by the District shall be deemed a part of the contract whether or not cost changes are involved. If cost changes are involved, authorization of and payment for same shall be automatically provided for under section 2.8, below.

2.4. Exhibits - All exhibits referred to in the contract shall be considered a part of the contract and the District's general construction standard shall be a part of all contracts.

2.5. Payment for Work

2.8.1. General Contract - All contractors performing work under section 2.1, 2.2, or 2.3 defined above will be paid in full, or if in part, in a timely manner each month. Preconditions for said payment are as follows:

a) Contractor shall, prior to the first payment request, provide owner with a cost breakdown for the project, to be used for billing purposes.

b) In requesting payment, whether payment in full or monthly progress payments, contractor expressly warrants that he has paid all employees, payroll taxes, subcontractors and or suppliers as well as applicable taxes, permit fees or other cost attributed to the work. Should contractor, in any way, fail to comply with this provision, contractor specifically agrees to hold owner harmless relative to any resultant claim.

c) All work to be considered completed must be certified as completed by the District's project manager by the end of the billing period and a payment request submitted by the contractor by the last day of the billing period.

d) All work completed, and certified completed by the District's project manager, by the first of any month will be paid by the 15th of the same month.

2.8.2. Progress Payment - When the duration of any project is longer than one billing period, contractor at his own discretion may request monthly progress draws. The preconditions for said draws are as follows:

a) Comply with all conditions of 2.8.1.a above.

b) Provide owner, by the 1st of each month, with a percentage of completion tabulation of the amount of payment requested using the format of the cost breakdown as defined on 2.8.1.a. above.

2.8.3. Retention - Owner shall hold retainage in the amount of five percent (5%) of all payments authorized. Said retainage shall be retained by the owner and paid to contractor 30 days after final completion of the work and acceptance of same by the owner. Thirty-day period and acceptance by owner will not commence until all guarantees, instructions, as built drawings and requirements of the District's general construction standards have been met.

2.8.4. Payment For Change Orders – All change orders shall upon their execution by the parties in accordance with 2.5 above become part of the contract and shall be

paid for in accordance with the above provisions 2.8.

2.8.5. Payment Or Contractors, Subs And Supplies - It is, and shall remain, the obligation of all contractors to pay their subcontractors, suppliers, taxes, insurance and other obligations and hold the owner harmless with respect to any claims, liens, suits or other demands. In requesting any final or progress payment, contractors may expressly warrant and certify that they have complied with this obligation and agree to indemnify and hold owner harmless for any such claim that may arise whether during the progress of the work or after final acceptance and payment.

3. Construction Specifications

3.1. Building Construction - Prevent collection of surface water on site and control drainage on and adjacent to site to prevent damage to the project or neighboring projects during construction. Erosion control measures shall include staked straw bale filters, fabric filter fences and or such other measures as may be required to properly control erosion. Said measure shall follow the design engineer's recommendation and details shown on the plan sheets. See figures 21 and 22.

3.2. Foundation - The building slab must bear on firm undisturbed earth below organic surface soils to an elevation below frost penetration. Foundation slab shall have #4 rebar placed horizontally in a 24" grid pattern. The 6" raised foundation edge shall have one #4 rebar -placed horizontally and continuously at the top of the wall and 1/2"anchor bolts placed 4' on center. See figure 3.

3.3. Framing - All framing shall comply with the local jurisdiction requirements and the UBC. Use 6"x8" door headers at exterior walls. All wood in contact with concrete shall be damp proofed with 15# felt paper, sill plate gasket and pressure treated with waterproof preservative. Bolts arid nuts bearing against wood shall be provided with flat cut washers. Plates shall be anchored into concrete with 1/2" round anchor bolts @ 4 feet on center. See figure 1.

3.4. Roofing - All structures shall be roofed with pre-design engineered manufactured trusses at 24 inches on center, 7/ 16 OSB sheeting, 15# felt paper and 20 year, 3-tab composition shingles with continuous ridge vent and a 4" roof vent for exhaust fan. Aluminum, white gutters and down spouts shall be installed where appropriate. See figure 1.

3.5. Floor Drains - Floor drains shall be installed in all TPUD structures and shall be constructed as detailed in figure 24. Floor drains shall be "piped to daylight" or to a dry well as detailed in figure 25.

3.6. Backwash, Discharge, Scuppers - All relief, overflow and or discharge lines shall be piped into a separate scupper and connected into the floor drain system. All piping discharge into said scupper shall be constructed with a minimum- 1" air gap, see figure 25.

3.7. Electrical

3.7.1 Electrical Service - All District facilities shall be supplied with underground electrical service. Service panels shall be sized to accommodate all currently anticipated equipment and shall have the capability of adding sufficient breakers to increase the total load by 1/3. Electrical service, where emergency generators are provided, shall include switching capabilities as provided.

3.7.2 Electrical-Buildings - All installation of electrical systems and/ or electric heating equipment and other electrical devices shall be as per manufacturers requirements and shall conform to Underwriters Laboratories standards and all local codes. Interior light fixtures shall be ceiling mounted and accept 100-watt incandescent bulbs and all lighting shall be controlled by a wall switch. Submittals for all electrical devices shall be provided per section 1.5. Electric heater shall be 1500-watt wall mounted forced air heater, controlled by a thermostat. A ceiling exhaust fan shall be installed and connected to a timer to provide air circulation.

3.7.3 Emergency Generators - Generators when specified shall be sized to operate all potential pumps and equipment simultaneously unless otherwise specified. The type of generator installed must be approved by the District. All generators shall be controlled by an automatic switching system designed to switch to emergency power immediately upon any power failure. Generator controls shall include, but not be limited to an automatic auto dialer or other device to provide the District's office with at least the following conditions:

- Switch to emergency power
- Well pump failure
- Low water conditions

All District generators shall be automatically operated by propane fuel. Propane tanks for generator operation shall be sized to provide a minimum of seven (7) days operation under severe weather conditions and shall be place a minimum of 10' from any building on a concrete pad and shall otherwise conform to all applicable codes. All generator and propane tank installations shall be fenced in compliance with these specifications.

3.8. Insulation - All pump houses and the District’s facilities shall be insulated with R-19 insulation in the walls and R-30 in the ceiling as a minimum.

3.9. Painting

3.9.1 Structure Painting - All structures shall be painted with a low luster, latex, and exterior paint with mildew resistant additives. This paint is to be used on all exterior and interior wood surfaces. All interior and exterior surfaces shall be covered with a minimum of two coats. The exterior base color shall be a neutral

beige or gray and the trim color shall be white or off-white, or as approved by the District's Director of Field Operations. All wood surfaces in the interior shall be painted with two coats and of the same white or off-white color used on the exterior trim.

3.9.2 Steel Reservoir Painting - The interior and exterior shall be painted with a fast curing epoxy paint that conforms to AWWA standard d 102- 78 for "painting steel water tanks" unless otherwise specified. Ali interior paint shall be certified with an NSF 60-61 listing.

3.9.2.1 Interior Coating: Base coat shall be "TNEMEC" series FC20 at 4-6 mils dry film thickness. Finish coat shall be "TNEMEC" series FC20-AA83 at 4-6 mils dry film thickness. The interior shall have a total finished dry film thickness of not less than 8 mils.

3.9.2.2 Exterior Coating: Base coat shall be "TNEMEC" series 161 of fc20 at 4-6 mils dry film thickness. Finish coat shall be "TNEMEC" series 73 (semi-gloss) at 3-5 mils dry film thickness. The exterior shall have a total dry film thickness of not less than 9 mils. Color shall be selected by the owner from color chips furnished by the contractor.

The tank shall be field sand blasted to near white prior to painting. The surface preparation shall be done in accordance with the paint manufacturer's specifications.

The contractor shall provide the following to the District's project manager or designated design engineer for approval prior to commencing fabrication.

1. Satisfactory evidence of the interior paint systems approval for potable water use.
2. The paint manufacturer's material specifications and system application instructions for all surfaces.

3.10. Door - the entry door shall be 3' x 6'8" metal doors with locking hardware. The contractor will be provided with a District pump house key for purposes of having the hardware keyed to the District's standard key.

3.11. Hardware - all door hardware shall be Kwikset model 400 t us 3, or approved equivalent. All locks shall be keyed to the District's keying and system. Contractor is to coordinate keying with the District's project manager.

3.12. Keying - all fences, buildings or facilities required by the construction documents to be keyed shall be keyed to the District’s system. Contractor shall coordinate with the District's project manager to accomplish same.

3.13. Freeze Protection - protect exposed sections of water piping, shut-off valves, pressure reducers and other plumbing elements from freezing by using heat tape controlled by an automatic thermostat, appropriate insulation and protective covering shall be applied over the insulation and heat tape to prevent rain saturation and or rodent infestations.

3.14. Well Head Construction - All District wells are to be constructed according to AWWA standards and these specifications using a pitless adapter. See figure 2.

3.15. The District's Design/Construction Specifications and Standard can be found in Appendix IV

4. Appendices

I Construction Contract/Bid Packet
II Notice of Award
III Notice to Proceed
IV TPUD's Standard Construction Details
V TPUD's Standard Construction Details

Attachment 1: Project Cover Sheet

Public Utility District #1 of Thurston County

System Name
Project Name

Site Address(es)

Prepared by:

1230 Ruddell Rd SE, Lacey WA 98503
Phone: (360) 357-8783

Attachment 2: Instructions to Bidders

INSTRUCTIONS TO BIDDERS

1. Proposal

Bids for this improvement will be received by the Public Utility District #1 of Thurston County (District) until **ENTER DATE**. Deliver bid proposal to _____, _____ by email:

- E-mail: _____@thurstonpud.org

Bid Proposals must include a list of three projects that compare to work to be completed in this bid packet with references for each project.

2. Basis Of Award

The estimated cost of the Work, including taxes, is less than $300,000 and, therefore, solicitations for bids have been requested from contractors registered on District's Small Works Contractor Roster. The Contract shall be awarded to the qualified and responsible bidder submitting the lowest and the most responsive bid, but the District shall determine, at its own discretion, whether a bidder is qualified to perform the Contract, whether the bidder meets the supplemental responsible bidder criteria, if included, what bid is the lowest and best, and whether it is to the interest of the District to accept the bid. The District reserves the right to reject all bids and not award a Contract.

3. Local Conditions

Bidders are notified that they must carefully examine the plans, specifications, instructions to bidders, special provisions and Standard Specifications, and familiarize themselves with all State, City, County and other laws pertaining to this improvement. They must also examine and judge for themselves as to the locations and character of the proposed work, the amounts and quality of the materials required and the work to be done. If there is any doubt or obscurity as to the meaning of any part of the Contract Documents, it shall be brought to the attention of the District in order that the necessary explanations or corrections may be made before submitting the bid.

4. State Sales Tax

The payment of State sales tax, where applicable, shall be made by the District to the Contractor in compliance with current Tax Commission rules.

5. Payments and Retainage

The District will withhold five percent (5%) of the Contract Price as a retainage fund pursuant to RCW 60.28.011. The District shall release the retainage, less any amounts the District is entitled to withhold, to Contractor not later than sixty (60) days after the latest of the following dates:
(a) acceptance of the Work by District; (b) the receipt of all necessary releases from the Departments of Revenue, Labor and Industries and Employment Security; or (c) the settlement of any liens.

6. **Contract**

The bidder to whom the award is made shall be required to enter into a written contract, included in the Bid Documents, with the District within two (2) working days after being notified of the acceptance of his proposal. Prospective bidders are advised to acquaint themselves fully with the provisions of all Contract Documents before submitting their bids.

7. **Notice to Proceed**.

The Work shall not commence until the District has given notice to proceed.

8. Time of Completion

Work shall be completed within sixty (60) calendar days of the date of Notice to Proceed.

9. Utility Location

The Contractor shall be responsible for coordinating the location of existing underground utilities. The Contractor shall arrange for location through any affected utility, the Utilities Underground Location Center or with a private utility location service.

10. Permits

All permits, plan review or inspection fees shall be the responsibility of the Contractor. The cost of said fees shall be the responsibility of the Contractor and shall be included in the Contract Price.

11. Bonding

The District shall require a performance bond unless the Contract Price is less than $25,000.

12. Prevailing Wage Rates to be Paid

The wage rates to be paid all laborers, workers, and mechanics who perform any part of this Contract shall be not less than the prevailing wage rate as required by the Revised Code of Washington (RCW) Chapter 39.12. This requirement applies to laborers, workers and mechanics whether they are employed by the Contractor, Subcontractors, Sub-subcontractors, or any other person who performs a portion of the Work contemplated in the Contract Documents.

The Contractor shall, pursuant to RCW. 39.12.040, file with the District, a "Statement of Intent to Pay Prevailing Wages" and an "Affidavit of Wages Paid" for itself and all Subcontractors and Sub-subcontractors in performance of the Work. Such Statements require the approval of, and the Affidavits of Certification of, the Industrial Statistician of the Department of Labor and Industries before such Statements or Affidavits are submitted to the District. The Department of Labor and Industries charges a fee for such approval and certification, which fee shall be paid by the Contractor. Any change in the fee will not be grounds for the revision in Contract Sum.

13. Responsible Bidder and Supplemental Responsible Bidder Criteria

For purpose of this bid packet the term **responsible bidder** shall mean a contractor who meets the criteria set forth in RCW 39.04.350, including:

a. At the time of bid submittal, have a certificate of registration in compliance with chapter 18.27 RCW;
b. Have a current state unified business identifier (UBI) number;
c. Not be disqualified from bidding on any public work contract under RCW 39.06.010 or 39.12.065(3);
d. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3);
e. If bidding on a public works project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation;
f. Have received training on the requirements related to public works and prevailing wage under this chapter and chapter 39.12 RCW. The bidder must designate a person or persons to be trained on these requirements. The training must be provided by the department of labor and industries or by a training provider whose curriculum is approved by the department. The department, in consultation with the prevailing wage advisory committee, must determine the length of the training. Bidders that have completed three or more public works projects and have had a valid business license in Washington for three or more years are exempt from this subsection. The department of labor and industries must keep records of entities that have satisfied the training requirement or are exempt and make the records available on its website. Responsible parties may rely on the records made available by the department regarding satisfaction of the training requirement or exemption; and
g. Within the three-year period immediately preceding the date of the bid solicitation, not have been determined by a final and binding citation and notice of assessment issued by the department of labor

and industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of chapter 49.46, 49.48, or 49.52 RCW,

and the District's Competitive Bidding and Procurement Procedure (Compliance Policy No. 200-013), and satisfies all supplemental responsible bidder criteria, which shall include:

a. The ability, capacity, and skill of the bidder to perform the contract or provide the service required;
b. The character, integrity, reputation, judgment, experience, and efficiency of the bidder;
c. Whether the bidder can perform the contract within the time specified;
d. The quality of performance of previous contracts or services;
e. The previous and existing compliance by the bidder with laws relating to the contract or services; and
f. Such other information as may be secured having a bearing on the decision to award the contract.

In accordance with RCW 39.06, a public works contractor must verify responsibility criteria for each first-tier subcontractor, and a subcontractor of any tier that hires other subcontractors must verify responsibility criteria for each of its subcontractors. Verification shall include that each subcontractor, at the time of subcontract execution, meets the responsibility criteria and possesses the required licenses to perform the work. This verification requirement, as well as the responsibility criteria, must be included in every public works contract and subcontract of every tier.

The District reserves the right to check references, whether identified by the bidder or not, on all bidders, including using itself as a reference in applicable situations in considering supplemental responsible bidder criteria. The above supplemental criteria shall be considered within the definition of responsible bidder under District policy and applicable law, and shall be considered by the District in making a responsible bidder determination.

Attachment 3: Bid Proposal

BID PROPOSAL

RE: System Name
Project Name
Location: Site Address(es)

All materials and workmanship shall be furnished by the contractor.

The scope of the project is to: See Attachment 7

Please complete the tables below for your bid and attach estimate with work detailed to complete scope.

SCHEDULE A

Item No.	Bid Item	Total Price
1		$
	WA State Sales Tax, 8.1%	$
		$
	Total Bid, Schedule A	$

Receipt of the following addends to the Specifications is acknowledged:

Addendum No. _____ Date: _____

Addendum No. _____ Date: _____

The undersigned hereby certifies that they have personally examined the location and construction details of work as outlined on the plans and specifications and has read and thoroughly understands the plans and specifications and Contract governing the work required for this improvement and the method by which payment will be made for said work embraced in this improvement in accordance with said plans, specifications, Contract, and at the attached prices.

The undersigned hereby certifies and declares under penalty of perjury under the law of Washington that the bidder is not a "willful" violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgement entered by a court of limited or general jurisdiction.

I, the undersigned, purpose complete the work within 60 days after Notice to Proceed is issued.

Dated this_____Day of_____, 2023.

Contractor's Signature: _____

Printed Name: _____

Company Name: _____

Attachment 4: Contract

CONTRACT

THIS AGREEMENT, made and entered into this _____day of _____2023, by and between Public Utility District #1 of Thurston County, hereinafter called the District, and _____ _____, hereinafter called the Contractor.

WITNESSETH:

That in consideration of the terms and conditions contained herein, and the Special Provisions attached as Attachment 5 which is hereby incorporated and made a part of this agreement (collectively the "Contract"), the parties hereto covenant and agree as follows:

I. The Contractor shall obtain and furnish all permits, labor, tools, materials and equipment for the work described in the Contract for Hawley Hills 686 Water System Concrete Water Tank Staining. The contract shall be performed in accordance with District Standards. The Contractor shall perform any alterations in or additions to the work provided under this Contract and every part thereof, if first approved by the District on the Change Order form, Attachment 6.

II. Work shall be completed within sixty (60) days after the date of Notice to Proceed.

III. The District shall pay the Contractor the lump sum price of $_____ excluding sales tax, as full consideration for the Contractor's duties under the Contract, except as may be amended by the parties in writing, including change orders. This is a lump sum bid and may be altered only in conformance with the provisions of the Contract Documents.

IV. It is further provided that no liability shall attach to the District by reason of entering into this Contract except as expressly provided herein.

V. The work shall not be accepted until inspected and approved by the District. District shall have the right to inspect the Work at all times. No portion of the Work shall be covered until approved by the District.

VI. In the event of a breach of this agreement by Contractor, District is authorized, upon notice to Contractor, to cause the Work to be completed at Contractor's expense.

VII. This agreement cannot be modified, nor any provision waived, except in a written document signed by both parties.

VIII. In the event any party hereto engages Legal Counsel to enforce any of the terms hereof, the non-prevailing party in any resulting court proceeding, arbitration or mediation shall pay to the prevailing party a reasonable attorney fee and costs incurred.

IN WITNESS OF the parties hereto have caused this agreement to be executed the day and year first hereinabove written.

DISTRICT	CONTRACTOR
Signature:_____	_____
Print Name: John Weidenfeller	_____

Attachments: Attachments 1-7

Attachment 5: Special Provisions

SPECIAL PROVISIONS

Notice to Proceed

The Work shall not commence until the District has given Notice to Proceed.

Time of Completion

Scope of Work shall be completed within sixty (60) calendar days of the date of Notice to Proceed.

Utility Location

The Contractor shall be responsible for coordinating the location of existing underground utilities. The Contractor shall arrange for location through any affected utility, the Utilities Underground Location Center or with a private utility location service.

Permits

All permits, plan review or inspection fees shall be the responsibility of the Contractor. The cost of said fees shall be the responsibility of the Contractor and shall be included in the Contract Price.

Bonding

The District shall require a performance bond unless the Contract Price is less than $25,000.

Payments and Retainage

The District will withhold five percent (5%) of the Contract Price as a retainage fund pursuant to RCW 60.28.011. The District shall release the retainage less any amounts the District is entitled to withhold to Contractor not later than sixty (60) days after the latest of the following dates:
(a) acceptance of the Work by District; (b) the receipt of all necessary releases from the Departments of Revenue, Labor and Industries and Employment Security; or (c) the settlement of any liens.

Prevailing Wage Rates to be Paid

The wage rates to be paid all laborers, workers, and mechanics who perform any part of this Contract shall be not less than the prevailing wage rate as required by the Revised Code of Washington (RCW) Chapter 39.12. This requirement applies to laborers, workers and mechanics whether they are employed by the Contractor, Subcontractors, Sub-subcontractors, or any other person who performs a portion of the Work contemplated in the Contract Documents.

The Contractor shall, pursuant to RCW. 39.12.040, file with the District, a "Statement of Intent to Pay Prevailing Wages" and an "Affidavit of Wages Paid" for itself and all Subcontractors and Sub-subcontractors in performance of the Work. Such Statements require the approval of, and the Affidavits of certification of, the Industrial Statistician of the Department of Labor and Industries before such Statements or Affidavits are submitted to the District. The Department of Labor and Industries charges a fee for such approval and certification, which fee shall be paid by the Contractor. Any change in the fee will not be grounds for the revision in Contract Sum.

Inspection

The Contractor shall be fully responsible for all improvements and workmanship and shall provide all inspections as required to ensure full compliance with the Contract Documents. Contractor shall provide safe and sufficient access by the District or permit authorities at all times for additional inspection.

Lot Corners and Permanent Control Points

All lot corners or corners of tracts, section corners, or permanent markers of subdivisions therein, including street monuments, shall be carefully noted and maintained by the Contractor. Any such pin, pipe, stone, plaque or monument that is removed or disturbed by the Contractor shall be accurately located and replaced at the expense of the Contractor.

Restoration of Improvements

The Contractor shall be responsible for all existing improvements within the project. Compensation for replacement of said improvements, unless specifically made a bid item of this contract, shall be considered as incidental to other items included herein.

Protection of any tress, buildings, or other similar type of improvements that are proximate to the Contractor's operations, shall be the sole responsibility of the Contractor. All such types of improvements, if, damaged, shall be restored to their original condition.

Overtime and Holiday Work

The number of calendar days provided in the contract is intended to be sufficient time to complete the project without weekend or holiday work.

The Contractor shall furnish necessary manpower and equipment to ensure completion of the Contract within the specified number of days.

Payment for Extra Work

The District may order changes to the work without invalidating this agreement. No payment for extra work will be allowed until authorized in writing by the District with any additional compensation or time extension therefore agreed to and recorded.

Supervision

The contractor shall maintain competent and adequate supervision of his own at all times. At a minimum, the contractor's central point of contact for the project shall be equipped with a cellular phone and shall be accessible during normal business hours.

Warranties

The Contractor shall guarantee that the items installed and workmanship performed under these specifications meet with the requirements of the specifications, are new and of good quality, and that he will make good, at the Contractor's sole expense, any defects or inoperable conditions that may develop within one year from the date of completion.

Traffic

Barricades, signs, warning devices and/or flaggers required to maintain traffic control shall be the responsibility of the Contractor, shall be utilized in accordance with the applicable law including the Manual on Uniform Traffic Control Devices, and shall be considered as incidental to other items of the contract.

Materials and Equipment Substitution

Wherever in the plans and specifications any item of equipment or material is designated by reference to a particular brand, manufacturer, or trade name, a product approved in writing as equivalent and acceptable by the District may be substituted by the bidder of Contractor. The District shall be the sole authority as to equivalent status of any substituted item request.

Final Payment and Waiver

The acceptance by the Contractor of the final payment shall constitute a waiver of all claims against the District arising out of the Contract.

Pre-Construction Conference

Prior to beginning construction, the Contractor shall arrange a time for a meeting with the District, and utility personnel to discuss scheduling and possible conflicts. The person (s) who will be responsible for the project, including the field superintendent, must attend.

Operation and Maintenance Manuals

The Contractor shall furnish three (3) complete sets of operation and maintenance manuals and product literature for all installed equipment. Manuals shall be supplied in three ring binders. Manuals shall be supplied for all meters, valves, and appurtenant equipment and other improvements as may be appropriate.

Insurance Requirements (Updated April 2, 2021)

COMPENSATION, PUBLIC LIABILITY, AND PROPERTY DAMAGE INSURANCE

Indemnification / Hold Harmless

The Contractor shall defend, indemnify and hold the Public Entity, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with the performance of this Agreement, except for injuries and damages caused by the sole negligence of the Public Entity.

However, should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Contractor and the Public Entity, its officers, officials, employees, and volunteers, the Contractor's liability hereunder shall be only to the extent of the Contractor's negligence. It is further specifically and expressly understood that the indemnification provided herein constitutes the Contractor's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement.

Insurance Term

The Contractor shall procure and maintain insurance, as required in this Section, without interruption from commencement of the Contractor's work through the term of the Contract and for thirty (30) days after the Physical Completion date, unless otherwise indicated herein.

No Limitation

The Contractor's maintenance of insurance, its scope of coverage and limits as required herein shall not be construed to limit the liability of the Contractor to the coverage provided by such insurance, or otherwise limit the Public Entity's recourse to any remedy available at law or in equity.

A. Minimum Scope of Insurance The Contractor's required insurance shall be of the types and coverage as stated below:

1. Automobile Liability insurance covering all owned, non-owned, hired and leased vehicles. Coverage shall be at least as broad as Insurance Services Office (ISO) form CA 00 01.

2. Commercial General Liability insurance shall be at least as broad as ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, stop gap liability, independent contractors, products-completed operations for a period of three years following substantial completion of the work for the benefit of the Public Entity, personal injury and advertising injury, and liability assumed under an insured contract. The Commercial General Liability insurance shall be endorsed to provide a per project general aggregate limit, using ISO form CG 25 03 05 09 or an endorsement providing at least as broad coverage. There shall be no exclusion for liability arising from explosion, collapse or underground property damage. The Public Entity shall be named as an additional insured under the Contractor's Commercial General Liability insurance policy with respect to the work performed for the Public Entity using ISO Additional Insured endorsement CG 20 10 10 01 and Additional Insured-Completed Operations endorsement CG 20 37 10 01 or substitute endorsements providing at least as broad coverage.

3. Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

B. Minimum Amounts of Insurance The Contractor shall maintain the following insurance limits:

1. Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of $1,000,000 per accident.

2. Commercial General Liability insurance shall be written with limits no less than $2,000,000 each occurrence, $2,000,000 general aggregate and a $2,000,000 products- completed operations aggregate limit.

3. Builders Risk insurance shall be written in the amount of the completed value of the project with no coinsurance provisions.

Public Entity Full Availability of Contractor Limits

If the Contractor maintains higher insurance limits than the minimums shown above, the Public Entity shall be insured for the full available limits of Commercial General and Excess or Umbrella liability maintained by the Contractor, irrespective of whether such limits maintained by the Contractor are greater than those required by this Contract or whether any certificate of insurance furnished to the Public Entity evidences limits of liability lower than those maintained by the Contractor.

Other Insurance Provision

The Contractor's Automobile Liability, Commercial General Liability and Builders Risk insurance policies are to contain, or be endorsed to contain that they shall be primary insurance as respect the Public Entity. Any insurance, self-insurance, or self-insured pool coverage maintained by the Public Entity shall be excess of the Contractor's insurance and shall not contribute with it.

Contractor's Insurance for Other Losses

The Contractor shall assume full responsibility for all loss or damage from any cause whatsoever to any tools, Contractor's employee owned tools, machinery, equipment, or motor vehicles owned or rented by the Contractor, or the Contractor's agents, suppliers, contractors or subcontractors as well as to any temporary structures, scaffolding and protective fences.

Waiver of Subrogation

The Contractor and the Public Entity waive all rights against each other, any of their Subcontractors, Sub-subcontractors, agents and employees, each of the other, for damages caused by fire or other perils to the extent covered by Builders Risk insurance or other property insurance obtained pursuant to the Insurance Requirements Section of this Contract or other property insurance applicable to the work. The policies shall provide such waivers by endorsement or otherwise.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best rating of not less than A: VII.

Verification of Coverage

The Contractor shall furnish the Public Entity with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsements, evidencing the Automobile Liability and Commercial General Liability insurance of the Contractor before commencement of the work. Before any exposure to loss may occur, the Contractor shall file with the Public Entity a copy of the Builders Risk insurance policy that includes all applicable conditions, exclusions, definitions, terms and endorsements related to this project. Upon request by the Public Entity, the Contractor shall furnish certified copies of all required insurance policies, including endorsements, required in this Contract and evidence of all subcontractors' coverage.

Subcontractors

The Contractor shall cause each and every Subcontractor to provide insurance coverage that complies with all applicable requirements of the Contractor-provided insurance as set forth herein, except the Contractor shall have sole responsibility for determining the limits of coverage required to be obtained by Subcontractors. The Contractor shall ensure that the Public Entity is an additional insured on each

Subcontractor's Commercial General liability insurance policy using an endorsement as least as broad as ISO CG 20 10 10 01 for ongoing operations and CG 20 37 10 01 for completed operations.

Notice of Cancellation

The Contractor shall provide the Public Entity and all Additional Insureds for this work with written notice of any policy cancellation within two business days of their receipt of such notice.

Failure to Maintain Insurance

Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the Public Entity may, after giving five business days notice to the Contractor to correct the breach, immediately terminate the Contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Public Entity on demand, or at the sole discretion of the Public Entity, offset against funds due the Contractor from the Public Entity

Right of Way/Permits

The District shall provide all easements, rights-of-way and permits necessary for the Work. Contractor shall comply with all permit requirements and conditions

Hold Harmless and Indemnity

The Contractor shall defend, indemnify and hold the District, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or in connection with the performance of this Agreement, except for injuries and damages caused by the sole negligence of the District.

Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Contractor and the District, its officers, officials, employees, and volunteers, the Contractor's liability hereunder shall be only to the extent of the Contractor's negligence. It is further specifically and expressly understood that the indemnification provided herein constitutes the Contractor's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement.

Compliance

Contractor shall comply with all federal, State and local laws, regulations and ordinances governing, controlling or limiting in any way the Work or the persons engaged in the Work, including, but not limited to the prevailing wage requirements of State of Washington, RCW 39.12 and the Retainage Requirements of RCW 60.28.011.

Safety Precautions

Contractor shall be solely and completely responsible for working conditions on or near the job site, including safety of all persons and property during performance of work. If the Contractor fails to initiate and maintain reasonable safety measures, the District, within twenty-four (24) hours of written notice of such non-compliance of this provision, may implement whatever safety measures are deemed necessary to correct the situation and may deduct the cost from any amounts due the Contractor.

Cleanup

Contractor agrees to:

a. Cleanup and remove from each Construction Project site all rubbish and debris accumulated after completion of his work.
b. Prior to completion or immediately upon receipt of a request by the District, to remove any rubbish and debris that accumulated during the performance of the Contractor's work; and
c. To repair all damage that occurs in any portion on the Construction Project Site in which the Contractor is working.

It is expressly agreed that the commencement of work by the Contractor shall be deemed an acknowledgment by Contractor that no damage or soiling exists in any portion of each Construction Project Site in which the contractor commences work, including, but not limited to, the sufficiency of grading work when concrete is being poured and the sufficiency of sheet rock and wood surfaces when said surfaces are to be painted or stained by the Contactor. In the event the Contractor determines that damage, soiling or inadequate prior work exists at the time that work is commenced by the contractor, then the District may require, without further payment of any kind, the rectification of such damage, soiling or inadequate work by the contractor if the District determines that the Contractor if the District determines that the Contractor is responsible for such defects.

Termination

This Agreement may be terminated by the District. The Contractor, upon written notice of termination by the District, shall immediately stop work. If this Agreement is terminated, the Contractor agrees that the District will only be liable for labor, material, equipment and costs, including reasonable profit, provided pursuant to this Agreement to the date of work stoppage.

Hazardous Wastes

The Contractor shall at its expense comply and have full responsibility for compliance with all applicable environmental laws, regulations, rules and orders, including those relating to health, safety, noise, environmental protection, waste disposal, and water and air quality. Should any hazardous or toxic waste, discharge, leakage, spillage, emission asbestos, petrochemical contamination, pollution or environmental harm of any type occur due to or resulting from the Work on the Project, the Contractor, at its expense, shall be obligated to clean and remediate the Project to the satisfaction of any governmental body having jurisdiction.

The Contractor shall not bury any construction materials, paint, trash, equipment or other items on the Project. The Contractor hereby represents and warrants that neither the Contractor nor its Subcontractors of any tier will bury any construction materials, paint, trash, equipment or other items on the Project Site. Any hazardous materials or related construction debris removed from the property shall be removed to an appropriately permitted landfill.

Attachment 6: Change Order Form

CHANGE ORDER

Change Order Number _____ Date _____

Project _____

Contractor _____

District Public Utility District #1 of Thurston County

Description of Change

Reason for Change

Original Contract Price, including tax	$_____
Changes in Contract Price from Previous Change Orders, including tax	$_____
Contract Price Prior to this Change Order, including tax	$_____
Contract Price will (increase or decrease) by the Change Order	$_____
Change Order Sales Tax (Rate %:)	$_____
New Contract Price after Change Order Adjustment, including tax	$_____

Recommended by: _____, Engineer Date: _____

Accepted by: _____, Contractor Date: _____

Approved by: _____, District Date: _____

Attachment: 7

Scope of Work

APPENDIX II

NOTICE OF AWARD

Notice of Award of Contract: (name & #)

Dear _____,

Thank you for bidding on contract #_____, for _____. You have been awarded the contract for this project in reference to your provided bid dated _____.

Attached is the contract for the above referenced project. Please be sure to review the contract and sign page 7, "Attachment 4: Contract" and return an **original** copy to the PUD office as soon as possible. If you require an original signed copy of the contract be returned to you for your records, please sign and return two copies of "Attachment 4: Contract" to the PUD. Otherwise, we will email a signed copy once the contract is completed.

> **Please note:** per PUD policy, we require an original signed contract page; we cannot accept a scanned and emailed or faxed copy; please either mail or drop off at the PUD office. Thurston PUD Office: 1230 Ruddell Rd. SE, Lacey WA 98503

Once we receive the signed contract, we will review & sign the contract, issue a purchase order (PO), and issue the Notice to Proceed. You will receive a copy of the signed and executed contract and PO with the Notice to Proceed, work cannot commence until the notice is given.

Your contact for the job is _____, 360-357-8783 ext. 125, email _____@thurstonpud.org.

Please provide your timeline/dates when the project can be completed.

Please let me know if you have any questions.

Appendix III

NOTICE TO PROCEED

Notice to Proceed: (name and #)

Dear _____,

Please accept this e-mail as your Notice to Proceed on the _____, project number _____.

Attached you will find a copy of PO #_____ for the work and a copy of the signed contract for your records.

Please be sure that you coordinate, at least 5 working days in advance, with _____, to schedule the date(s) of work and system shutdown(s) if required.

We require giving our customers at least 3 working days advanced notice for a scheduled outage.

_____ contact phone number is (360) _____.

Please contact the District with any questions you may have.

Thank you,

Appendix IV

Thurston PUD

Design/Construction Specifications and Standards

2020

Thurston PUD
1230 Ruddell Rd SE
Lacey WA 98503
360-357-8783 or 866-357-8783
www.ThurstonPUD.org

THURSTON PUD
GENERAL PROVISIONS AND DESIGN STANDARDS FOR DEVELOPER AND DISTRICT CONTRACTS
2020

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GENERAL PROVISIONS AND DESIGN STANDARDS FOR THE WATER DISTRIBUTION SYSTEM

The Public Utility District No. 1 of Thurston County (District) General Manager has the right to require, add, modify, or delete any requirements (s) he deems necessary.

1. GENERAL

These provisions cover the construction of water distribution mains of 24-inch and smaller diameter for privately financed projects in which the developer shall make all necessary arrangements to pay the construction costs directly to the Contractor. The developer must complete District's "Developer Extension Agreement" if applicable, and have it approved by the Manager before any work is started. However, if these provisions are part of a "Public Works Contract", they must be approved by the District's Board of Commissioners. The "notice of award" signed by the District Manager followed by a "notice to proceed" must be completed before any work can commence.

Please note that if not specifically covered in this DEA, then the *WSDOT Std. Specifications for Roads, Bridges, and Municipal Construction 2008* or current edition shall govern; Provided that the General Manager has the right to modify if (s) he deems necessary.

All pipe, fittings, valves, hydrants and other materials installed under these specifications are intended to form a durable section of the distribution system of ample strength capacity and provide the highest quality potable water. All materials must meet the District's standards as described within this document.

Payment for Services—the District's policy applies to all owners, contractors and developers that are petitioning the District to install water service connections, main extensions, and setting of meters, shall pay all costs prior to installation or scheduling of work activities. You will then be placed in a rotation on a first paid, first serve basis as work allows. The District usually schedules the work activity within two weeks, however, circumstances out of the District's control may prevent it from meeting this goal, and it may result in a longer period of time for commencement of work activities. The Director of Field Operations or Manager will make every effort to schedule the work as soon as possible on behalf of the owner, contractor or developer's schedule.

It is our Policy to eliminate dead end water mains wherever possible. All water mains must be looped or tied together from at least two directions to provide equal flow of water. This will increase the gallons per minute available for fire flow and help eliminate chlorine residual problems along with improving water quality. Blow offs are to be installed where ever looping is not able to be completed.

There shall be no unauthorized use of District fire hydrants during construction. Please see page 54 for hydrant meter regulations.

2. WORK QUALITY

All the work shall be performed in a responsible, serious and skillful manner. First class work according to the true intent of the Drawings and Specifications as interpreted by the DEA & Specifications District's Inspector is required. The Inspector's decision as to the true intent of the Drawings and Specifications shall be final.

3. SUPERVISION OF CONTRACTOR'S EMPLOYEES

The Contractor shall keep a competent person at his/her work site, as required under W.A.C. 296-155-650, to inspect the work and to supervise the conformance of the Contractor's operations within the regulations of the W.A.C.

4. CHARACTER OF CONTRACTOR'S EMPLOYEES

The Contractor shall employ only competent and skillful persons to do the work and whenever the Inspector administering the contract shall notify the Contractor in writing that any person on the work is, in his/her opinion incompetent, disrespectful to other workers District staff or the public in general, or otherwise unsatisfactory, the Contractor shall forthwith discharge such persons from the work and shall not again employ them on this contract.

5. QUALITY AND CARE OF MATERIAL

Any and all material necessary for the construction if applicable, any part of the improvements specified herein shall be of domestic manufacture and comply with the "The Buy America Act", and "The Buy American Act" and shall be new and of high quality and acceptable to the District's Inspector. The Contractor shall take care of, and be responsible for, any loss or damage from any cause to any materials delivered at or in the vicinity of the work to be used by him/her thereon in connection with this contract prior to its completion.

6. INSPECTION

A) THE WORK

All materials furnished and work done shall be subject to inspection.

The Inspector monitoring the contract shall at all times have access to the work wherever it is in progress or being performed, and the Contractor shall provide proper facilities for such access and inspection. Such inspection shall not relieve the Contractor of the responsibility of performing the work correctly, utilizing the best labor and materials in strict accordance with the Specifications of this Contract. All material or work approved and later found to be defective shall be replaced without cost to the District.

B) INSPECTOR'S AUTHORITY

The District Inspector shall have power to reject materials or workmanship, which does not fulfill the requirements of these Provisions or Specifications, but in case of dispute, the Contractor may appeal to the Director of Field Operations of the District monitoring the contract, whose decision shall be final.

Nothing herein contained, however, shall be taken to relieve the Contractor of his obligations or responsibilities under this Contract.

7. ASBESTOS CEMENT PIPE

When the contract drawings specify or it is otherwise necessary for the contractor to come into contact with or work on asbestos cement pipe, he/she shall comply with the procedures as required by W.A.C. 296-62 and W.A.C. 296-65. For information and notifications forms on the proper removal and packaging of asbestos materials contact the Puget Sound Air Pollution

Control Authority in Seattle at 206-344-7330 or 1-800-552-3565.

8. SAFETY AND HEALTH PROVISIONS

The Contractor shall at all times have sole responsibility for the safety and health standards at the work site and the District assumes no responsibility. The Contractor shall exercise adequate precautions for the safety and health of all persons, including employees, and Subcontractor's employees, in the performance of this contract and shall comply with all applicable provisions of federal, state, county, and municipal safety and health laws and regulations. It is the Contractor's responsibility to furnish safety equipment or to contractually require Subcontractors to furnish adequate safety equipment to properly perform their work responsibilities.

If the District's Inspector witnesses a safety violation, he will advise the contractor first. It is the Contractor's responsibility to make any necessary corrections. Failure to correct safety violations shall be grounds for the District to notify the appropriate State or other authority to stop work on the project.

Any of the above actions by employees of the District shall in no way relieve the Contractor of his/her responsibility to provide for the safety and health of all persons, including his/her employees and the employees of the Subcontractor.

9. INDEMNIFICATION

The Contractor acknowledges that pursuant to the terms of this agreement, the Contractor is totally responsible for the safety of persons and property in the performance of this Contract. To the greatest extent allowed by law, the Contractor assumes the risk of all damages, loss, cost, penalties and expense and agrees to indemnify, defend and hold harmless the District, from and against any and all liability which may accrue to or be sustained by the District on account of any claim, suit or legal action made or brought against the District for the death of or injury to persons (including Contractor's or subcontractor's employees) or damage to property involving contractor, or subcontractor(s) and their employees or agents, arising out of and in connection with or incident to the performance of the Contract except for injuries or damages caused by the sole negligence of the District. In this regard, Contractor recognizes that Contractor is waiving immunity under Industrial Insurance Law, title 51 RCW. This indemnification extends to the officials, officers and employees of the District and also includes attorney's fees and the cost of establishing the right to indemnification there under in favor of the District. Provided, however, this provision is intended to be applicable to the parties to this agreement and it shall be interpreted to allow a Contractor's employee to have a claim or cause of action against Contractor except insofar as may be necessary to effectuate the indemnification herein given.

10. PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE

The Contractor shall procure and maintain for the duration of the Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, their agents, representatives, employees or subcontractors.

No Limitation. Contractor's maintenance of insurance as required by the agreement shall not be construed to limit the liability of the Contractor to the coverage provided by such insurance, or otherwise limit the Owner's recourse to any remedy available at law or in equity.

A. Minimum Scope of Insurance

Contractor shall obtain insurance of the types described below:

1. Automobile Liability insurance covering all owned, non-owned, hired and leased vehicles. Coverage shall be written on Insurance Services Office (ISO) form CA 00 01 or a substitute form, providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.

2. Commercial General Liability insurance shall be written on ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, stop gap liability, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract. The Commercial General Liability insurance shall be endorsed to provide the Aggregate Per Project Endorsement ISO form CG 25 03 11 85. There shall be no endorsement or modification of the Commercial General Liability insurance for liability arising from explosion, collapse or underground property damage. The Owner shall be named as an insured under the Contractor's Commercial General Liability insurance policy with respect to the work performed for the Owner using ISO Additional Insured endorsement CG 20 10 10 01 and Additional Insured-Completed Operations endorsement CG 20 37 10 01 or substitute endorsements providing equivalent coverage.

3. Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.

4. Builders Risk insurance covering interests of the Owner, the Contractor, Subcontractors, and Sub-subcontractors in the work. Builders Risk insurance shall be on a all-risk policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including flood and earthquake, theft, vandalism, malicious mischief, collapse, temporary buildings and debris removal. This Builders Risk insurance covering the work will have a deductible of $5,000 for each occurrence, which will be the responsibility of the Contractor. Higher deductibles for flood and earthquake perils may be accepted by the upon written request by the Contractor and written acceptance by the Owner. Any increased deductibles accepted by the Owner will remain the responsibility of the Contractor. The Builders Risk insurance shall be maintained until final acceptance of the work by the Owner.

B. Minimum Amounts of Insurance

Contractor shall maintain the following insurance limits:

1. Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of $1,000,000 per accident.

2. Commercial General Liability insurance shall be written with limits no less than $1,000,000 each occurrence, $2,000,000 general aggregate and a $2,000,000 products-completed operations aggregate limit.

3. Builders Risk insurance shall be written in the amount of the completed value of the project with no coinsurance provisions.

C. Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions for

Automobile Liability, Commercial General Liability and Builders Risk insurance:

1. The Contractor's insurance coverage shall be primary insurance as respect the Owner. Any insurance, self-insurance, or insurance pool coverage maintained by the Owner shall be excess of the Contractor's insurance and shall not contribute with it.

2. The Contractor shall provide the Contracting Agency and all Additional Insureds with written notice of any policy cancellation, within two business days of their receipt of such notice.

Failure on the part of the Contractor to maintain the insurance as required shall constitute a material breach of contract, upon which the Contracting Agency may, after giving five business days notice to the Contractor to correct the breach, immediately terminate the contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Contracting Agency on demand, or at the sole discretion of the Contracting Agency, offset against funds due the Contractor from the Contracting Agency.

All costs for insurance shall be incidental to and included in the unit or lump sum prices of the contract and no additional payment will be made.

Contractor's Insurance For Other Losses

The Contractor shall assume full responsibility for all loss or damage from any cause whatsoever to any tools, Contractor's employee owned tools, machinery, equipment, or motor vehicles owned or rented by the Contractor, or the Contractor's agents, suppliers or contractors as well as to any temporary structures, scaffolding and protective fences.

Waiver of Subrogation

The Contractor and the Owner waive all rights against each other, any of their Subcontractors, Sub-subcontractors, agents and employees, each of the other, for damages caused by fire or other perils to the extend covered by Builders Risk insurance or other property insurance obtained pursuant to the Insurance Requirements Section of this Contract or other property insurance applicable to the work. The policies shall provide such waivers by endorsement or otherwise.

F. Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best rating of not less than A:VII.

G. Verification of Coverage

Contractor shall furnish the Owner with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the Automobile Liability and Commercial General Liability insurance of the Contractor before commencement of the work. Before any exposure to loss may occur, the Contractor shall file with the Owner a copy of the Builders Risk insurance policy that includes all applicable conditions, exclusions, definitions, terms and endorsements related to this project.

H. Subcontractors

Contractor shall ensure that each subcontractor of every tier obtain at a minimum the same insurance coverage and limits as stated herein for the Contractor (with the exception of Builders

Risk insurance). Upon request, the Owner, the Contractor shall provide evidence of such insurance.

11. OBSTRUCTION OF PUBLIC THOROUGHFARES

Whenever, during the course of construction, it becomes necessary because of the nature of the work, for the Contractor to barricade any street, or any part thereof, or to place any obstruction which will impede the flow of traffic in any public thoroughfare, then the Contractor shall be required to give notice of the intended interruption at least (5) working days prior to such barricading or obstruction of any thoroughfare.

Such notice shall be given to, but not limited to, appropriate departments of governing authority of the County.

Where such obstruction or interruption to traffic interferes with normal usage of thoroughfares along scheduled routes of local transit companies, then such notice shall also be given to the companies, citing the thoroughfares to be affected, the nature of the obstruction and the period of time involved. The Contractor shall maintain during all phases of construction the access for local traffic and emergency vehicles.

The posting of flagmen, advance warning signs, barricades, traffic cones, flashers, etc., shall be the responsibility of the Contractor and shall be in accordance with the current "Manual on Uniform Traffic Control Devices for Streets and Highways" as accepted by the Washington State Department of Transportation.

The Contractor shall be responsible for all necessary detour signs and cones, and shall provide and place flashers and barricades within the project area and shall coordinate with the District Inspector all matters pertaining to the movement of vehicular and pedestrian traffic past the project area. In addition, the District Inspector shall be notified a minimum of three (3) working days in advance of the date and time that implementation is to be made for all detours, closures, and other activities involving the disruption of travel of pedestrian or vehicular traffic.
There shall be safe walkways provided and maintained at all times for pedestrians, subject to the approval of the Inspector.
Whenever, in the opinion of the Inspector, traffic conditions dictate, a uniformed officer shall be employed to control traffic until the Inspector determines that there no longer exists any traffic problem.

12. WORKING DAYS AND NON-WORKING DAYS

A working day shall be Monday through Friday, 8:00 a.m. to 4:30 p.m. Any changes to this must have prior approval from the District Manager or Director of Field Operations. A non-working day is Saturday, Sunday, or legal District holidays.

13. WORK ON NON-WORKING DAYS

Work on a non-working day will require that the District have five (5) full working days notice.

All work on a non-working day will require the District's Inspector and other District personnel, depending on the nature of the work, at their current overtime rates of pay the overtime rates.

All work on legal District holidays will require the District's Inspector and other District

personnel, depending on the nature of the work, at their current overtime rates of pay.

The District will give the final approval for work on a non-working day based on the availability of personnel.

14. CLAIMS AND PROTESTS

If the Contractor considers any work required of him/her to be outside the requirements of the contract, or considers any record or ruling of the Inspectors of the District as unfair, he/she shall ask for written instructions or decision immediately, and then file a written protest with the District against the same within five (5) days thereafter. Otherwise, the Contractor will be considered as having accepted the required work record or ruling.

15. EXTRA WORK

No charge to the District for extra work or any other charge in the contract will be allowed unless the extra work or change has been authorized in writing by the District Manager and unless the compensation or method of determining the compensation is stated in such written authority and agreed upon by all parties prior to completion of the extra work.

The District reserves the right to furnish any necessary materials, which were not included in the Drawings or Specifications as it deems advisable. The contractor shall have no claims for costs and profit on materials furnished by the District.

The Contractor's cost records pertaining to work paid for by the District shall be open to inspection or audit by representatives of the District during the life of the contract and for a period of not less than three (3) years after the date of acceptance thereof. The Contractor is required to retain such records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor expressly guarantees that the cost records of such other forces shall be open to inspection and audit by representatives of the District on the same terms and conditions as the cost records of the contractor. If an audit is to be commenced more than sixty (60) days after the acceptance of the contract, the Contractor will be given a reasonable notice of time when such audit is to begin.

16. PLANNING THE WORK

The Contractor shall have a plan and schedule of his/her work. This plan and schedule must be approved by the Water District Inspector. A minimum of five (5) working days notice shall be given by the Contractor to the District Manager/Director of Field Operations prior to commencing work.

Such a plan shall cover but not be limited to the following points:

a. The work shall be divided into sections in such a manner as to permit each section to be completed and cleaned up in the shortest time possible. The water main construction, once started shall continue until completed in its entirety without delay.

b. The plan shall provide for the least interference with normal street traffic and access to abutting property.

c. A study shall be made of the points at which heavy flushing flows may be disposed of. Such flows in the new mains shall be in the amounts 100 GPM in four-inch mains, 220

GPM in six-inch mains, 400 GPM in eight-inch mains and 900 GPM in twelve-inch mains. The Contractor shall provide tees and temporary blow-off valves and piping or temporary hydrants if necessary to discharge such flows at suitable points at no charge to the District

d. Where a new main is replacing an existing main, all existing hydrants and customer services must be kept in use until the new main has passed the sanitary tests. The services can then be transferred to the new main and the new hydrants placed in service and the existing line abandoned. Follow the District's Disinfection Plan for this water system.

e. The Contractor shall verify the location and elevation of all other utilities, including the existing water main to be connected to, sufficiently in advance of approaching them with the water main construction so that corrections in vertical and/or horizontal alignment may be accomplished if necessary.

If extreme weather conditions or other unforeseen circumstances are deemed by the Inspector to be unsuitable for proper installation of water mains in accordance with these provisions, the work shall not start or shall be interrupted until conditions have improved sufficiently as to allow the work to progress without delay until completed.

Contractor delays resulting from work required to be completed by District personnel, such as shutdown or tapping of existing mains, or installation of water services before street repairs, shall be considered by the Contractor in his/her schedule.

17. WORK DONE BY THE DISTRICT The developer shall perform or contract all work within the public rights-of-way of the water system. The District will provide the Points of Connection for the Developer's Contractor to match depth and grade. The connection shall not be made by the Contractor until all District provisions have been satisfied.

The Contractor will furnish all material and labor necessary to provide the required taps for testing and sterilizing. Water for testing and sterilizing will be furnished without charge to the Contractor.

DEA & Specifications Purity samples shall be collected and submitted to the testing lab by the District at the developer/contractors cost.

18. COORDINATION

The Contractor shall diligently comply with the following requirements:

a. Cooperate in planning and layout of the work well in advance of operations.

b. Inform other Contractors of job requirements at proper time to prevent delay or revisions.

c. Be informed of the requirements of other Contractors and the District and check his/her own work for conflicts with the work of other Contractors and that of District's crews.

d. Insure delivery of materials and performance of work on coordinated schedule with other Contractors.

19. INSTRUCTIONS TO CONTRACTOR

All instructions will be given by the District's Manager or his authorized agents (Director of Field Operations or Inspectors). No other instructions shall be recognized.

20. EXAMINATION OF DOCUMENTS AND SITE

The Contractor shall exhibit that he/she has carefully examined all contract documents and site conditions, and understands the character, quality and quantity of work called for and all conditions of the contract. The Contractor shall carefully compare and check all documents for omissions and discrepancies. This coordination shall proceed each phase of the work and omissions and discrepancies shall be reported promptly to the District Manager or Inspector.

21. DRAWINGS

The Contractor understands and agrees that the work herein described and shown on the Drawings shall be complete in every detail, even though the specifics of each required procedure or item is not explicitly mentioned. The Contractor will be liable to provide all labor and materials necessary for the completion of the work intended to be included and described in this contract. The Contractor shall not avail himself/herself of any unintentional errors or omissions that may exist herein or on the Drawings and shall notify the District of any perceived errors or omissions.

Anything mentioned in the Specifications and not shown on the Drawings and anything on the Drawings and not mentioned in the Specifications shall be of like effect and shall be understood to be shown and/or mentioned in both. In case of differences between Drawings and Specifications, the Specifications shall govern. In addition, in the event of any conflict between the Special Provisions and the Technical Provisions, the Special Provisions shall control. In case of discrepancy of figures between Drawings, Specifications or both, the matter shall immediately be submitted to the District Manager for his decision. Discrepancies shall not be adjusted by the Contractor, save only at his/her own risk and expense. The Manager shall furnish from time to time such detailed drawings and other information, as he/she may consider necessary.

22. EXISTING UTILITIES AND FACILITIES

All design drawings for new facilities, and the requirements for notification, locating/marking, protection and repairing of existing utilities and facilities shall be in accordance with RCW 19.122. As provided in the law, the contractor is responsible for maintaining all utility locate marks for 45 days before placing a call for renewed locate marks.

The developer/engineer shall contact all private and public utilities and show on the Drawings only those utilities within the project limits indicated as existing by the various utilities. When other utilities are replacing their existing utilities, District requires two to three feet clearance from its utilities.

It shall be the Contractor’s responsibility to locate or have located in the field all existing underground utilities. Dial before you dig “811”

Existing utilities shown on the Drawings are not necessarily all utilities in the area and are only a guide. Exact locations must be determined in the field by the Contractor.

Once the utilities have been located, it shall be the Contractor’s responsibility to maintain locations throughout the duration of the contract.

If the Contractor damages a utility, which has been properly located, the Contractor shall be responsible for all costs associated with the repair. Should the Contractor accidentally damage an underground facility, which is incorrectly located (as defined by Chapter 19.122 RCW) by the District, then the damage will be repaired at no cost to the Contractor. If requested, the contractor shall be required to dig up and expose utility. The Contractor shall have no claim for additional compensation or time against this contract due to improper location of utilities.

The Contractor shall not install any water facilities closer than ten (10) feet horizontally from sanitary sewers, five (5) feet from power lines and three (3) feet from all other utilities. All utility crossings shall have one (1) foot vertical clearance, with the exception of sanitary sewers, which shall only be crossed over by water mains with a minimum vertical clearance of 18 inches. Any variance of the above will require prior approval of the District Manager or his representative and be in accordance with the State's Pipeline Separation Design and Installation Reference Guide.

The Contractor shall assume all responsibility and expense for damage to existing improvements on or adjacent to the work site caused by his/her operation. The Contractor shall provide for the protection of poles, overhead and underground lines, concrete curbs, and existing structures at his/her own expense and shall be responsible for the expense of all necessary repairs.

The risk of loss resulting from changed or differing site conditions as defined in Revised Code of Washington Section 19.122.040 is the responsibility of the Contractor or his/her successors in interest.

When boring under an existing asbestos cement (AC) water main the following requirements will apply: 1) a section of the AC main will be replaced with either ductile iron or C900 PVC main of the same size if the vertical clearance from the top of the bore hole to the AC pipe is less than two (2) feet for Class A soil, less than three (3) feet for Class B soil or less than four (4) feet for Class C soil, 2) the length of the replacement pipe shall be at least 12" each side of the crossing bore hole, 3) a minimum of four (4) feet of replacement pipe.

23. CLEARING AND GRUBBING

This item shall consist of clearing and grubbing, ahead of trench excavation, all areas with trees, stumps, brush, roots, vegetation, rubbish, and other objectionable material.
The limits of clearing as well as grubbing operations, are dependent to a considerable degree upon the Contractor's operations and it shall be his/her responsibility to determine these limits providing he/she does not go beyond right-of-way or easement lines. The clearing and grubbing shall be at least the width of the trench plus that needed for placement of material excavated from the trench.

Trees, shrubbery, and flower beds designated by the Inspector shall be left in place and care shall be taken by the Contractor not to damage or injure such trees, shrubbery or flower beds by any of his/her operations. If the Contractor damages or destroys said items which he/she has been directed to preserve, he/she shall replace it in kind acceptable to the Inspector, and guarantee the item to live for a period of one (1) year.

The refuse resulting from the clearing and grubbing operation shall be hauled to a waste site secured by the Contractor and shall be disposed of in a legal manner as to meet all requirements of state, county and municipal regulations regarding health, safety, and public welfare.

24. ALIGNMENT AND GRADE

The proposed pipe alignment and grade is detailed on the accompanying contract Drawings.

Alignment and grade shall be taken from survey stakes provided by the developer's engineer, and placed at a maximum of 50 feet apart by a licensed professional surveyor or at his/her direction. Stakes shall be offset and shall have a lath guard stake showing the cut or fill to flowline of the pipe and finished grade. The District Inspector will check the staking prior to construction. A cut sheet shall be provided showing cuts to flow-line grade, finished grade and all other applicable information

Each installed pipe shall be checked for line and grade before proceeding with the next pipe.

Line and grade may be taken from curb or pavement when such structures parallel the work and shall conform to elevations and distances shown on the Drawings.

Revision of pipe alignment and/or grade may be required by the Inspector in the field should obstructions or unsuitable conditions be encountered, or an obviously more suitable location is evident.

25. INTERFERENCE

The Contractor shall inform the railroads of any possible interference to insure that their facilities are properly protected during the water main construction.

All shrubbery, trees and private improvements adjacent to the work shall be carefully protected from damage.

Where the pipe is to be laid in a non-surfaced area, shrubbery and private improvements shall be removed, properly cared for and replaced upon completion of the work.

Where lawns are destroyed, four inches of topsoil shall be placed, rolled, and sod laid, all in accordance with the Inspector's approval. Arrangements shall be made by the Contractor with the Inspector to insure the success of the lawn. In lieu of the above, allowances can be made for grass seeding or hydro-seeding with prior approval of the District Manager. The construction site must be videoed or have pictures taken before and after the work.

26. TRENCH EXCAVATION

All trenches shall be sufficiently true to line and grade to permit accurate alignment of pipe and shall clear the side of the pipe to permit proper tamping of the pipe bedding.

The minimum trench width shall be the nominal pipe diameter plus 16 inches. The maximum trench width shall be as required in Section 7.09.1 of the most recent WSDOT/APWA Standard Specifications.

The Contractor shall provide sloping-benching, or shielding for trench protection in accordance with WAC 296-155. This includes excavations that require entry by District crews to perform construction-related work. See Section 8, Safety and Health, of these technical specifications.

Pavement cuts shall be held to the minimum width required by the work and shall present uniform

lines. T-cut needed before permanent paving per WSDOT's or the County's specification requirements whichever jurisdiction is applicable.

If the District's Inspector deems the trench bottom to be unsuitable for supporting the pipe, the unsuitable material shall be removed and disposed of and Control Density Fill (CDF) and gravel or crushed rock placed for pipe bedding as directed by the Inspector.

Excavation at pipe joints shall be of ample size to permit inspection of all joints.

Pipe laying operations in certain areas may necessitate temporary removal of mail boxes, private driveways, drains, service lines, conduits, etc., to facilitate construction. In the event that the Contractor finds it necessary to remove the above mentioned items, it is to be particularly understood that it will be his/her responsibility to restore these items in a manner equal to their original condition and satisfactory to the Inspector. The Contractor shall maintain adequate temporary provisions for domestic deliveries, utility service and access to firefighting equipment.

The preceding requirement will be the same for any temporary removal of road culverts, whether under State, County, City, or private jurisdiction.

The Contractor shall keep the dust from his operations under control at all times to prevent a nuisance.

All stumps within four feet of the pipe shall be entirely removed.

Boulders and rocks shall be entirely removed or cut to full trench width and twelve inches below grade.

Where pipe is to be laid on fill, all topsoil and debris shall be removed from the existing ground and the fill made of suitable material thoroughly compacted to pipe grade by methods approved by the Inspector.

The Contractor shall provide all necessary bridges for the proper handling of traffic over the trench and shall provide access to private property where required.
The Contractor shall provide adequate cross drainage and prevent flooding of the trench.

27. MATERIALS

All materials shall be new, free from defects, of current approved manufacture, and of the quality specified or shown below.

DISTRICT FURNISHED MATERIALS (if applicable)

Materials supplied by the District will be furnished to the Contractor and will be picked up by the Contractor at the District's office or, if approved by Manager, the District shall make arrangements to have materials delivered. The Contractor will be required to sign a receipt for all materials supplied to him/her by the District.

Once the Contractor has received the materials, he/she will be fully responsible for control and security of the materials until formal final acceptance of the contract.

A. PIPE

All ductile iron pipe shall conform to the latest revision of the ANSI/AWWA C151 and ANSI/AWWA C104 Specifications, Class 50 (CL52 for fire hydrant and fire line), except as these Specifications may be modified in the Special Provisions.

Only ductile iron pipe manufactured by U.S. Pipe and Foundry Company, Pacific States Cast Iron Pipe Company, Griffin Pipe Company, or American Pipe Company are acceptable. SPECIAL NOTE: All gaskets furnished with pipe shall be styrene butadiene rubbers (SBR), unless specified otherwise by the Manager. When necessary, "Nitrile" (NBR) gaskets deemed will be required. When NBR gaskets are required they must be color-coded and/or marked in color so as to be easily identifiable as nitrile. All gaskets must conform to ANSI/AWWA C111-72 or the latest revision thereof. The gasket requirements for the specific project will be indicated on the face of the plan for the project.

B. DOMESTIC DUCTILE OR EPOXY-COATED DUCTILE IRON FITTINGS:

All domestic (USA-made only) ductile iron fittings shall conform to the latest ANSI/AWWA C110 Specifications or ANSI/AWWA C153 for Mechanical Joint Compact Ductile Iron Class 350 fittings. All fittings shall be epoxy-coated ductile iron or have cement-mortar lining conforming to ANSI/AWWA C104. Mechanical joint glands supplied with the above domestic "ductile iron" fittings shall be ductile iron in accordance with the above specifications

SPECIAL NOTE:
See note above under subsection A.

The end flanges of flanged gate valves shall conform in dimensions and drilling to the Standard ANSI B16.1 for cast iron flanges and flanged fittings, Class 125 unless specifically provided otherwise in plans or supplementary specifications. The bolt holes shall straddle the vertical centerline.

Gate boxes, manhole rings and covers and special castings shall be in accordance with drawings attached or as specified herein.
Fire hydrants and other restrained joints will be restrained by the use of "Megalugs" as manufactured by EBAA Iron, Inc., or approved equal, or where installation calls for FIELD LOK gaskets for 4" to 12" pipe as approved by District's Inspector.

C. GATE VALVES

All gate valves shall conform to ANSI/AWWA Standard C509 or latest revision, Gate Valves for Ordinary Water Service, as manufactured by Mueller or AVK only with the following Modifications:

1. All gate valves shall be AWWA approved resilient wedge gate valves.

2. All gate valves shall be non-rising stems, furnished with O-Ring stem seals. Number, size and design shall conform to Section 3.12 of the AWWA Standards for gate valves.

3. All gates shall have square operating nut which operates left (counter clockwise) to open.

4. All gates, 20-inch or larger, shall be horizontal stem, equipped with machine cut cast

steel gears, extended type grease case, position indicators and bypass, all in accordance with the AWWA Specifications.

D. BUTTERFLY VALVES

All butterfly valves shall conform to AWWA C504-80 for Rubber Seated Butterfly Valves, Class 150B. The butterfly valves shall be Mueller or AVK "Lineseal III". Butterfly valve installation must be approved for use on project by the District.

E. VALVE BOXES AND COVERS

Cast iron valve boxes and lids shall be as indicated on the attached Water District drawing. USA—Seattle/Tacoma style. All buried valves shall be provided with a valve box and lid with a PVC pipe as necessary. The Contractor shall maintain the location and provide access to all valves within the project. No valve shall remain buried during construction. The fire lines require a locking valve box type Tyler 6855.

F. TAPPING SLEEVES

Tapping sleeves shall be mechanical joint type or stainless steel (Romac, Smith Blair or Ford is acceptable), whichever type is specified on the plan.

The cast iron, mechanical joint sleeves shall be Model H-615 or H-619 manufactured by Mueller Company, or approved equal, and only when approved by District Manager to be used if the above cannot be used.

G. MECHANICAL JOINT RESTRAINT

Mechanical joint restraint shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A536-80. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53 of the latest revision. Twist-off nuts, sized same as tee-head bolts, shall be used to insure proper actuating of restraining devices. The mechanical joint restraint device shall have a working pressure of at least 250-PSI with a minimum safety factor of 2:1 and shall be EBAA Iron, Inc., MEGALUG or approved equal.

H. T-HEAD BOLTS

Unless specified otherwise, all T-head bolts and nuts supplied for mechanical joint fittings, valves, sleeves, couplings, hydrants, tapping sleeves, etc., shall be made of high-strength, low alloy steel, conforming to ANSI/AWWA C111 Corrosion-resistant steel ("Cor-Ten"), or ductile iron of ASTM A536 specially alloyed and heat treated conforming to ANSI/AWWA Standard C111/A21.11.

I. TIE RODS

Tie rods and nuts for hydrant laterals, etc., shall be made of high strength, low alloy steel conforming to ANSI/AWWA C111 ("Cor-Ten"), unless specified otherwise in the Drawings or Special Provisions.

J.CONCRETE WORK

All work shall be completely "formed" except where otherwise noted on the Drawings, and all concrete shall have a strength of not less than 1800 PSI at seven days and 3000 PSI in 28 days. No concrete shall contain less than six sacks of cement per cubic yard.
The size of concrete thrust anchors will depend upon existing soil conditions and shall be as determined by the Water District Inspector. Concrete for anchoring up to 8-inch pipe fittings and valves shall be thoroughly mixed in clean containers at the job site or mixed at a batch plant. Concrete for anchoring fittings and valves 12 inches and greater shall be supplied from an acceptable batch plant.

All thrust anchors shall be supported by bearing satisfactory to the Inspector before any concrete is poured. Follow AWWA standard detail.

28. CONNECTIONS

The contractor shall furnish temporary bracing material and incidental material as well as labor for trenching, backfilling and making connections to existing pipe lines.

The Contractor shall provide written documentation that 1) flushing has occurred and samples taken are satisfactory, 2) disinfection has been performed and bacteriological samples are negative, 3) a pressure test has been completed and accepted by the District's inspector, and 4) any other requirement by the District's Inspector prior to District's allowing the Contractor to make connection to the public water system under the observation of the District's Inspector.

Where the connection to an existing water main requires interruption of service to the area, the customers affected shall have a minimum of ***72 hours advance notice, no connection shall commence after 12:00 p.m.*** The Contractor and District's Inspector shall set the connection date. All fittings and materials necessary to complete the connection must be available at the job site for inspection and approval prior to setting the connection date.

The Contractor shall have all material and equipment required on the site of the work and crews organized to carry each connection through as a continuous operation before shutting down any pipe in service.

Should the Contractor cancel or fail to show for a mutually agreed upon scheduled work, he/she shall pay the District for cost incurred resulting from preparation and response for that work.

In all cases, operations of valves on mains in service and notification of customers will be done by the District or as directed by the District's Inspector.

Where connections are made to existing asbestos cement (transite) mains, sand shall be placed under the A.C. main before backfilling the trench. The connecting ductile iron pipe shall be properly supported to prevent settlement.

The Contractor shall notify affected customers of any water shut-downs.

29. INSTALLATION INSTRUCTIONS FOR PUSH-ON JOINT PIPE

Any foreign matter in the gasket seat shall be removed; the gasket shall be wiped clean, flexed and then inserted in the socket in accordance with the manufacturer's recommendations.

As the gasket fits snugly in the gasket seat, it may be necessary to smooth out the entire circumference to remove any bulges, which would interfere with the proper entry of the spigot end. A thin film of food grade lubricant shall be applied to the surface of the gasket after it is in place, and to the spigot end of the pipe to be joined. Excess lubricant shall not be used beyond where the pipe will contact the gasket and only lubricant, as supplied and labeled for potable use by the pipe manufacturer, shall be used. The lubricant shall be stored in a container with a tight fitting cover and shall be applied to the gasket with a small sponge or brush. The container shall be kept closed and if the lubricant becomes contaminated with foreign material, it shall be discarded.

The spigot end of the pipe shall be clearly marked to indicate the depth of the bell socket and wiped clean, lubed and placed in approximate alignment with the bell of the pipe to which it is joined. The pipe shall then be inserted into the bell until the spigot end is in contact with the bottom of the bell socket.

Field cut pipe may be used; however, the outside of the cut end should be tapered back about 1/4-inch at an angle of 30 degrees with the center line of the pipe, care being used to remove any sharp edges which might injure or roll the gasket. All pipe must have a minimum of 36" of cover and a maximum of 48" of cover.

30. LAYING OF PIPE

The Contractor shall provide all tools and equipment required in quantity and capacity sufficient to carry out the work promptly and safely.
The interior of all pipe, fittings, valves, and hydrants shall be cleaned of all foreign matter before they are laid in place and special attention be given to spigot ends and bells to see that no matter that will adversely affect the jointing is present.

The work shall be so arranged that bells are laid in the direction of progress, and on any appreciable slope, bells shall face up grade.

Pipe in and out of fittings shall be at least 10 feet long unless shown otherwise on the drawings or as required by the Inspector.

The interior of the pipe shall be protected from the entrance of trench water at all times, maintaining pumps at the bell holes if necessary until the joints are made up.

At all times when no laying is in progress, or other conditions warrant as determined by the District Inspector, open ends of pipe and fittings shall be plugged watertight to prevent the entrance of foreign matter or water into the pipe.

31. TESTING

As each valved section is completed, all points where pressure reaction and movement may occur, shall be properly anchored, braced or shackled prior to pressure testing.

The Contractor shall furnish and assemble all testing equipment including measuring devices and shall furnish all labor required for testing. The District will not furnish test gages.

Upon completion of construction, the line shall be filled slowly by the District's Inspector, allowing an adequate amount of time for the disinfection of the newly constructed main. The pressure test shall be conducted a minimum of 24 hours after the filling of the pipe. The test pressure shall be 100 PSI over static (150 PSI minimum) shall be for a duration of one hour unless specified otherwise in the Special Provisions. There shall not be an appreciable or abrupt loss in pressure during the test period. The allowable leakage shall be specified in A Guide for the Installation of Ductile Iron Pipe published by the Ductile Iron Pipe Research Association.

While under test pressure, the entire installation shall be carefully examined for defective material and joint leaks.

Following the pressure test, flushing and residual test will be conducted. Then a purity test will be administered. Purity samples shall be collected and submitted to the testing lab by the District at the developer/contractors cost.

Local distribution pressure or test pressure shall not be applied to the newly installed water main unless the Inspector is present.

Defective material furnished by the Contractor or furnished in good condition by the District and damaged after acceptance by the Contractor shall be replaced by the Contractor at his own expense.

Defective material furnished by the District and discovered before final acceptance will be replaced with sound material by the District, but the Contractor shall remove the defective material and install the new material at his own expense.

If it is necessary to replace defective material, the pressure test shall be rerun after such replacement.

After the steps listed above have been completed, if applicable the District will schedule a fire flow test at its convenience.

32. DISINFECTION

In laying of distribution pipelines, care shall be taken to insure that the interior of the pipe is kept free of foreign matter or trench water. As the pipe is laid in the trench, dry calcium hypochlorite shall be placed in each length of pipe in quantity sufficient to produce a chlorine residual of no less than 10 PPM in the filled line after the required 24-hour retention period.

The Inspector may require the Contractor to swab the inside of each pipe length with a chlorine solution prior to laying the pipe. This requirement will depend on the time of year, usually May through September, or condition of piping interior.

Upon completion of construction, the line shall be filled slowly by the Inspector and a pressure test conducted. The chlorinated water resulting from the initial filling shall be retained in the line for a period of not less than 24-hours, after which the contractor, under the direction of the District's Inspector, will remove the chlorinated water, de- chlorinate the water by approved methods, and thoroughly flush the line. The first set of bacterial test samples will be taken 24-hours after the initial flushing. A second set of bacterial test samples may be taken after a minimum of 48-hour retention period of the water remaining in the pipe after the initial flushing.

Should the samples not test free of coliform bacteria, the line shall be disinfected again and re-flushed, at the expense of the Contractor, until two successive satisfactory samples are obtained.

Forty-eight (48) hours is the minimum time required by the bacteriological laboratory to process samples.

33. SALVAGED MATERIAL

By the request of the District, Contractor may be required to deliver to the District yard those materials requested, at no expense to the District.

34. SERVICES AND SAMPLE STATIONS

Corporation stops with brass pipe stubs will be installed by District crews at selected points along the mains for use as sample stations, air release, and points to apply test pressure. The sample stations will be removed by District crews after bacterial tests and pressure tests are completed unless the stations can be used for new water service laterals.

The water main Contractor shall provide the necessary excavating required for removal of all the corporations and stubs not designated for services.

Where existing services are to be transferred from old to new mains, the work of the Contractor shall be so planned and coordinated with the District's work such that customers will be shut off as briefly as possible. Contractor is also required to notify customers ***72 hours in advance*** of water outage.

Where water service lines are installed by the Contractor, the lines shall include all work from the tap on the water main to and including the connection to existing property side service pipe. If existing property side service exists, the service line shall terminate at the tail of the meter setter. The work includes the service corp, pipe, fittings, meter, meter riser and meter box. If any adjustments are required to the service installation because of surface grade changes or other conflicts, the work shall be performed by the Contractor at no cost to the District.

35. TRENCH BACKFILL

General

Prior to backfilling all form lumber and debris shall be removed from the trench.

Backfill shall be selected excavated material free of rocks over six inches, wood, trash, concrete, asphalt or other unsuitable material.

Excavated material, which will not readily compact to form solid, dense backfill, will be rejected

by the Inspector.

Surplus suitable material from other parts of the job can be used as backfill when available.

CDF and gravel shall be furnished to make up any deficiency in the available excavated material. CDF and gravel shall be specified by Section 9-03.12(2) of the 1988 WSDOT/SPWA Standard Specifications, or as approved by the Inspector.

Backfill between bell holes or joints may be started as soon as the joints are made up, but all joints shall be left exposed until after the inspection and pressure test or approved by Inspector. The District's Inspector or Director of Field Operations will determine if Native Backfill is not approved for anything over 6 inches.

Under Private Improvements

Private driveways, road entrances, etc., shall immediately be backfilled and compacted as required herein to provide access to residents at all times.

Backfill materials to be placed where private roads, shoulders, driveways, parking lots, sidewalks, etc., will be constructed or reconstructed over the trench shall be full depth bank run sand and gravel or crushed rock, as specified by the most recent WSDOT/APWA Standard Specifications, Section 7.09.3.Inside State, City or County Right-of-Way

The Contractor shall inform himself/herself of the requirements of the State, City or County with respect to backfill material under roadway surfaces, shoulders, etc.

36. COMPACTION OF TRENCH BACKFILL

The Contractor shall compact the backfill by use of approved methods. Water main trenches backfill may be compacted in successive layers of loose materials not more than 24 inches in depth by use of a tractor mounted compactor such as a "Hopak" or the equivalent. When portable, hand operated air or gasoline driven compactors are used, the backfill shall be placed in successive horizontal layers of loose material not more than 6-inches in depth and regardless of the method used by compacted to at least 95 percent of maximum density. Maximum density shall be determined by The Washington Densometer Method or as required by the Inspector.

The Contractor shall provide the District with compaction test results for all trench backfill at points along the construction as designated by the Inspector. The compaction tests shall be performed by the Washington State Certified Testing Laboratory.

The Contractor shall inform himself/herself of the additional or different methods of compaction inside State, County or City dedicated rights-of-way.

Hand operated mechanical tampers shall be impact type air or gasoline driven as approved by the District's Inspector. The Contractor will be required to adjust gate valve boxes to the finished paving grade upon completion of the paving. These will include existing boxes affected by the water main construction and/or new paving and new boxes installed by the Contractor or the District which lie within the water main construction and/or new paving. Where gate valve boxes are located in the unpaved areas of the project, the Contractor will be required to adjust the boxes to the final contour of the ground. Meters, yokes and boxes shall be adjusted by the District at the

expense of the developer or as directed by the Inspector with the District Manager's approval.

Where hydrants do not conform to final paving grades or ground contours in accordance with District Drawings, the developer will be required to have his Contractor remove said hydrants and install the proper bury hydrants or extensions, as determined by the District's Inspector.

37. OFF-SITE CLEAN UP

All loose surface-stones two inches in diameter or larger shall be removed from the top of the trench and roadway after the backfill has been firmly compacted.

Shrubbery, fences, private improvements, lawns and surfaces disturbed shall be restored to a condition equal to or better than its original condition.

Surplus excavation, pipe line material, tools, temporary structures, and rubbish shall be removed and disposed of by the Contractor, and the construction area shall be left clean at the end of each day to the satisfaction of the District's Inspector.

All the off-site clean up and repair work shall be completed prior to placing the new water mains into service.

38. ROADWAY REPAIR

No pavement shall be cut unless shown on the prints. A copy of the right-of-way permit from County or the City will be available per contractor's request. Any cutting of the pavement will only be permitted when granted permission by the local authority.

After backfilling, a temporary patch of cold mix asphalt shall be placed on road or street crossings and driveways until the permanent paving patch can be placed.

All roadway or traveled surfaces shall be restored to their original condition or better to the extent required by local authority. Videos or pictures must be taken before work begins.

The Contractor shall inform himself of the requirements for street surface repairs in public roadways and shall make all necessary arrangements with the proper authority for such repairs all public and private roadways shall be permanently repaired prior to placing the new water mains into service. Pavement restoration will include alligator cracking, etc., not ditch line of new water main only.

If a jurisdiction has a 5-year moratorium of no cuts into new roadway pavement, the Owner/Developer shall be responsible for any penalty cost if it is required for road cuts prior to 5 years.

39. USE OF PORTION OF IMPROVEMENT

The District reserves the right to use for service and distribution purposes, any portion of this improvement which has been sufficiently completed. Such use shall not be construed as acceptance of any part of the work or as a waiver of any claim the District may have against the Contractor.

40. GENERAL SERVICE INSTALLATION REQUIREMENT FOR NEW PLATS

No service installations shall be started until the bacteriological samples are approved. The heavily chlorinated water from the new main(s) shall be de-chlorinated by the Developer.

The Developer shall complete grading of the right of ways to within 6" of the sub-grade, prior to service installation. All roadways and easements required for access to the service locations shall be maintained to be passable by automobile traffic.

Disposal of all soils removed from service & meter trenches is the responsibility of the Developer. They are to be left on site, at a location to be coordinated by the District and the Developer.

The Developer is responsible for **marking** underground utility lines and conduits on the project. The Developer is responsible for **repairing** any unmarked underground utility structures damaged in the course of installing services or meters.

When excavating around, or exposing any District structure in a new plat, the District Inspector in charge of the project shall be notified, to ensure that the integrity of the installations are maintained.

The Developer shall, upon request by the District, excavate the sample station locations for removal by District personnel.

The Developer shall coordinate with the District Manager or the District's Inspector to determine appropriate service stub locations.

41. WATER SERVICE LOCATIONS

Service locations shall be marked with the following staking plan:

A hub & stake at the meter location, marked with the letters W-MTR, the lot number it will serve, and the finished grade. The top of the stake shall be painted blue, or marked with a blue ribbon.

A hub & stake, offset no less than 5 feet and no more than 10 feet behind the water meter location, marked with the letters W-MTR, the finished grade at the meter and the lot number it will serve.

Lot lines shall be indicated with a lot corner stake, and a 10 foot offset stake, marked with the lot numbers.

Radius hubs shall be installed for all Cul-de-sacs, and left in place until service installations are complete.

42. PLACEMENT OF METERS

Water meters shall be located in the right of way, in front of the lot being served. Meter locations that cannot meet this requirement must be approved by the District Manager.

All meters installed on adjacent lots shall be positioned the same distance from the edge of the pavement.

If property corners are used by other utilities, the service may be located in the center of the lot.

Meter line-setter service splitters, whenever possible, shall be used at property corners in order to be able to serve two properties. When a fire hydrant is set at a property corner, water service shall have five-feet of separation.
Meters shall be laterally offset a minimum of 2 feet from the lot corners and 5 feet from Fire Hydrants.
Where possible, the meter shall be located between the road and the sidewalk. When the sidewalk meets the curb or roadway, meters shall be located behind the sidewalk.

Whenever possible, to reduce the amount of trenching, services shall be installed in common trenches that serve adjacent lots.

Avoid locating meters in proposed driveways, or other paved areas.

Water service pipes shall not be located parallel with and within 10 feet of any existing or proposed sanitary sewer line, manhole, transformer, vault, or utility pedestal. Water service pipes shall not be located parallel with and within 5 feet of any existing or proposed electrical conduits, cables, street lighting poles, gas pipes, or communication cables.

Meter locations shall be placed no closer than 3 feet to any other utility trench running perpendicular to the water service line.

Developers are responsible for mis-marked lots, incorrect grades, incorrect meter locations, and **will be charged for** any changes made after installation is complete. Developers are also responsible for changes in grade made by landscaping contractors or any other sub-contractor.

Developers are responsible for damages to property by Contractor or subcontractors after installation.

43. LANDSCAPING AND CLEARANCE REQUIREMENTS

GENERAL

- No improvements (building, wall, fence, rockery, tree, bush, structure, etc.) will be allowed that block, restrict or impede access to the water facilities.
- The ground around the water facilities needs to remain at the original grade unless approved by the District.
- No trees can be planted over or within 5 feet of water mains. Large trees at full growth need to be planted over 8 feet away from water mains.
- Where trees will be large (over 20 feet tall) at full growth and are planted near water facilities as described below, vertical root barriers need to be placed.

WATER METERS

- Meter box is to be placed at the property line.
- Meter box is to be set level at final grade.
- Keep grass, gravel, beauty bark or other landscape materials off of the meter box.
- Low growing shrubs need to be planted and kept trimmed to allow a minimum of 3 feet of clearance from the meter box.
- Larger shrubs and trees need to be planted no closer than 8 feet from the meter box.

- All structures, plants, fences, etc. need to be installed or trimmed to allow a minimum of 6 feet of overhead clearance in a 3-foot radius around the meter box.
- Fences near the meter box may only be adjacent to one side of the box. The remaining 3 sides need to maintain a minimum 3-foot clearance.
- Keep objects such as trash cans, flower pots, bird baths, etc. off of and away from the meter box.
- Any change to customer grade or landscaping at the meter box may require District inspection and approval.

FIRE HYDRANTS

- Fire hydrants are to be placed in accordance with the Fire Marshal's requirements.
- Fire hydrants need to be set with the breakaway flange at or slightly above final grade.
- Landscaping around hydrants must maintain a minimum of 18 inches between the discharge ports and ground level.
- All structures, plants, fences, etc. need to be installed or trimmed to allow a minimum clearance of 3 feet around the hydrant, and larger plants or trees need to be planted at least 8 feet away.
- All structures, plants, fences, etc. need to be installed or trimmed to allow a minimum of 6 feet of overhead clearance in a 3-foot radius around the hydrant.
- No shrubs, trees, fences or obstructions can be on the street side of the hydrant.
- There is to be no parking or obstructions within 10 feet of the hydrant on the street edge.

VALVE BOXES

- Valve box is to be set level at final grade with "ears" facing in the same direction as the water main.
- Keep grass, gravel, beauty bark or other landscape material off of the valve box.
- Low growing shrubs need to be planted and kept trimmed to allow a minimum of 3 feet of clearance from the valve box.
- Larger shrubs and trees need to be planted no closer than 6 to 8 feet from the valve box depending on the anticipated full growth size.
- All structures, plants, fences, etc. need to be installed or trimmed to allow a minimum clearance of 3 feet around the valve box.
- All structures, plants, fences, etc. need to be installed or trimmed to allow a minimum of 6 feet of overhead clearance in a 3-foot radius around the valve box.
- Keep objects such as trash cans, flower pots, bird baths, etc. off of and away from the valve box.
- Do not landscape in a manner that will block the view of the valve box from the street.

Public Utility District No. 1 of Thurston County

DESIGN AND CONSTRUCTION SPECIFICATIONS FOR DEVELOPERS & CONTRACTORS

2019

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Public Utility District No. 1 of Thurston County
DESIGN AND CONSTRUCTION SPECIFICATIONS
FOR DEVELOPERS & CONTRACTORS

1. DEVELOPER PLANS

The Public Utility District No 1 of Thurston County (District) General Manager has the right to require, add, modify, or delete any requirements he deems necessary.

PLANS MUST BE PRESENTED FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK

A) Right-of-way lines and widths for proposed road and side streets.

B) Label all streets, adjoining subdivisions, and easements with dimensions.

C) Water main line locations shall clearly show dimensions from street center lines or from property lines.

D) Show existing and proposed fire hydrants. The Fire Marshall shall designate the location of all new and relocated fire hydrants. Final design drawings shall have the Fire Marshall's signature of approval before construction can start.

E) Include size, type, and pipe classification for each run of pipe.

F) All pertinent fixtures shall be identified with size and type.

G) All blow-offs for sampling will be charged to the Contractor. It will be the Contractor's responsibility to disconnect.

2. INSPECTION & INSPECTORS

A) The cost of all District Inspectors will be at a current hourly rate. The Inspector shall be present during all phases of the installation of the water system; any overtime shall be at a two-hour minimum.

B) A **Pre-Construction Meeting** will be required prior to the commencement of the work. This meeting will include introduction of District project staff including the Inspector, discussion with the project staff, contractor, utility companies and permitting agencies of any concerns, and a general walk through of the proposed job. Written meeting minutes must be taken.

C) The District's Inspector is not a safety inspector, however, if he determines that inspection is needed in any areas, he can make the contractor meet safety requirements.

D) A 72-hour notice shall be given to the District before a District Inspector is needed on- site of the project. If a District Inspector is scheduled to the project site by the developer or contractor and a last minute cancellation for his services is made, a $100 charge will be applied to the developer or contractor, whichever is appropriate.

E) As-built measurements must be taken daily and a copy given to the District's Inspector.

3. SURVEYING

Survey control and field staking shall be established by the Developer/Contractor or the District's Engineer depending on whether the water system work is under a Developer or District contract. Water main alignment offset stakes or marks shall be set at no more than 50-foot intervals. Water main grades may be required to be shown on the offset stakes/marks, and intermediate stakes as needed, for large water main installations or where known utility line conflicts exist.

The Contractor shall provide all other intermediate measurements; horizontal, vertical and construction or control staking as needed for his operation.

4. WATER MAIN DESIGN

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Capacity: Minimum design capacity for water mains serving single family residential areas shall be 1,000 GPM over and above average maximum demands at the farthest point of the installation.

Policy to eliminate dead end water mains: During new construction main extensions, whenever possible, all water mains must be looped or tied together from at least two directions to provide equal flow of water. This will increase the gallons per minute needed for fire flow and help eliminate chlorine residual problems, improving water quality and provide reliability to the water system infrastructure. If a new dead end main is installed where a loop is not possible then a flushing station must be installed at the end of the main, this installation must include adequate drainage. See standard drawings for drawings.

Minimum design capacity for fire flows serving buildings other than single family dwellings shall be determined by the fire marshal.

Minimum pipe size is 8-inch. Pipe shall be ductile iron of domestic manufacture, Class 50 pursuant to ANSI A21.50 and AWWA C-150 or C900 PVC.

Maximum design velocity during fire flows shall not exceed 7.5 feet per second during peak day demand.

Whenever possible, maximum deflection by fitting is 45°. Successive bends shall be separated by straight runs not less than ten (10) diameters in length.

5. CONNECTION TO THE EXISTING WATER SYSTEM & SYSTEM MATERIALS

All connections to the existing water system shall be accomplished by District unless approved otherwise by the District

(a) Water Mains: Water mains shall be constructed and tested in accordance with Section 7-11.1 through 7-11.5 (02) of the Standard Specifications. Bacteriological test samples will be taken by the District, but at the Contractor's expense. Purity samples shall be determined as acceptable by the testing lab before connections are made to the existing water system. All of the following will be inspected by District Inspectors after the successful installations are completed.

(b) Pipe for Water Mains: Pipe for water mains 6-inch and larger shall be ductile iron and shall be thickness Class 50 or greater, with Tyton or approval equal joints or C900 PVC. Pipe shall be cement lined in accordance with A.S.A. Specification A 21.4-1964. All fire lines and fire hydrant pipe shall be Class 52.

(c) Pipe Fittings for Water Mains: Pipe fittings for water mains shall be short body, ductile iron, for 150 PSI working pressure. They shall be mechanical joint conforming to AWWA Specifications C153.

(d) Valves: Gate valves shall be the standard used in this District. A by pass line may be required in certain instances on valves larger than 8-inch.

(e) Sufficient valves shall be provided on water mains so that inconvenience and sanitary hazards will be minimized during repairs. Valves should be located at not more than 300- foot intervals in commercial areas and at approximately 600-foot intervals in other areas.

(f) Approvals for purity sample tests shall be delivered to the District before any connection to the water system is made.

6. GATE VALVES

Gate valves shall conform to the latest AWWA standards.. Rated for cold water, 200 P.S.I. working pressure. They shall be non-rising stem, counter clockwise opening, mechanical joint ends (except 6-inch valves on fire hydrant lines, which shall be M.J. joint by flange) valve stems shall be provided with o-ring seals and shall be AWWA approved. District requires that all valves smaller than 12-inch shall be R.S.G.V. Twelve inch and larger will be R.S.G.V. or Butterfly R.S.V. B3211. Approval of materials must be obtained from the District for each job before commencing work.

7. VALVE BOXES

Valve boxes shall be installed over valve operators. Boxes shall be two piece, adjustable, cast iron (with extension pieces, if necessary). Top Section 045/046 lid. Commonly called Seattle or Tacoma top and lid.

The letters “ww” shall be cast in relief in the top. Valve operating nut deeper than 40 inches must use valve nut extension.

Fire Systems must have locking top & lid (Tyler) 6855.

8. VALVE MARKERS

Shall be placed on the pavement curbing where valves are located outside of the surfaced area.

9. WATER SERVICES

Installation shall be the sole responsibility of District and charged at the current established rates. Exception to this being a certified contractor who must be approved by District.

Where possible, water services shall not exceed one-hundred (100) feet in length between the water main and the structure or appliance receiving water. Water service lengths greater than 100 feet shall require approval of the Director of Field Operations or General Manager. Additionally, service lengths between 150 and 225 feet shall require permitting and installation of a RPBA (reduced pressure bypass assembly) and annual testing; service lengths over 225 feet shall require a main line extension and installation of the RPBA and automatic flushing system with drainage system; service lengths greater than 350 feet shall require installation of a looped water main (minimum 8-inch ductile iron or C900 PVC) adequate for future fire flows, an automatic flushing system, and a water sample station on all dead end mains longer than 225 feet. All water services over 150 feet in length shall require a Temporary Service Agreement between the owner and the District prior to installation of the water service. All required private easements shall be the responsibility of the property owner not the District.

Water services shall be 1-inch IPS, SIDR 7, 200 PSI, ASTM D2239 polyethylene pipe with a meter riser installed per the District standard single water service detail drawing. 1-1/2 inch and 2-inch water services shall be CTS, SDR9, 200 PSI, ASTM D2737 polyethylene pipe with a meter riser as shown on the

District's standard water service detail drawing.
The water service piping shall be one continuous piece, without joints, between corporation stop to meter riser assembly. All connections to plastic tubing type services shall be made by using ¾" and 1" compression fittings or Ford brass fittings. The 1½ inch and 2-inch service connections shall be made with compression fittings or Ford Brass fittings. All service material shall be brass.

Water services shall be installed a minimum of three (3) feet below finished grade. Service pipe shall be wrapped with 12 gauge copper tracing wire, extending from the main to the meter box. Tracer wire shall be attached to the saddle and extend a minimum of 12 inches into the meter box. Water Services shall extend to the property line, and be fitted at that point with a meter setter and vault. Connections to existing water mains shall be wet taps through a tapping saddle and tapping valve and shall be made by the District:

10. CONCRETE THRUST BLOCKING AND MECHANICAL JOINT RESTRAINTS

Mechanical joint restraints ("megalugs" by EBBA Iron or equivalent) shall be used in lieu of thrust blocks on all mechanical joint fittings (bends, tees, crosses, pipe ends). However, when connecting to existing water mains, thrust blocks will likely be required because lock joint gaskets may not be installed in the joints of the connected water main.
The District's engineer or inspector will make the determination if thrust blocks are required and the blocking will normally be shown on the project plans.

Concrete thrust blocking shall be in accordance with the details shown on the Plans. Place 4 mil plastic between concrete blocking and fittings. No concrete is to get on bolt threads. Concrete shall be cured for at least two days prior to any pressure test of the pipe.

For pipe adjoining the mechanically restrained fittings, field lock gaskets shall be installed in pipe joints in accordance with the District's Standard Details 1 through 4.

Full sized concrete ecology blocks are acceptable where temporary thrust blocking is required.

11. FIRE HYDRANTS

General: All hydrant lateral pipe shall be Class 52 or greater ductile iron with mega lugs on the valve follower and hydrant follower. Place one-inch washed rock around hydrant weep hole, then place 6 mil plastic sheeting over the washed rock before placing the backfill around the hydrant. All fire hydrants shall be buried to grade within three (3) inches of the marked bury line on the hydrant.

Fire hydrants shall comply in all respects with latest A.W.W.A. (502), UL (246), & FM (1510) specification [removed "C-502."] Having a working pressure of 250 pounds P.S.I. and a hydrostatic test pressure of 500 pounds P.S.I. Hydrants shall be – 5-1/2 inch main valve opening, two 2-1/2 inch N.S.T. Hose Nozzles, one 4-1/2 inch N.S.T. Pumper Nozzle, fitted with Storz adapter, 4 foot bury, 6 inch M.J. Bottom Connections or flange connection, 1-1/4 inch operating nut. Open left, painted X-3472 CASE YELLOW (high grade alkyd-type, high gloss enamel intended for use on primed exterior and interior wood or metal). Repainting of hydrants may be required by the District Inspector.

They shall be of a compression type design with the main valve opening against the pressure and closing with the pressure. Hydrants shall be of dry top design complete with weather seal on one piece bronze operating nut, self-lubricating sealed oil reservoir to provide positive continuous lubrication. Reservoir to be factory pre-filled with the proper type and amount of oil. All threaded and bearing parts metal to metal, metal to rubber in the bonnet section shall be automatically and fully lubricated each time the hydrant is cycled, full opened to full closed. The bonnet casting of the fire hydrant shall be a one- piece casting forming an integral lubricant reservoir with a minimum of two "O-RING" seals at the base of the

bonnet. Lubrication of the hydrant shall be through a filler plug located in the bonnet of the hydrant, through which level of the lubricant can be checked. Lubrication shall not be through a fitting in the Operating Nut. All hydrants shall be of the traffic type, and shall be provided with a Two piece breakable Flange and with a Breakable Stem Coupling.

The Breakable Stem Coupling shall be made of stainless steel and shall be of the Torque- Diverting Type. Breakable flanges shall be of the 8-bolt design. Breakable bolts or Breakable Lugs are NOT ACCEPTABLE. Breakable stem couplings made of CAST IRON or of ALUMINUM are NOT ACCEPTABLE. A main valve Travel Stop shall be provided in the Shoe as an integral part of the Shoe. The internal ferrous surfaces of the Shoe shall be epoxy lined with a two part Thermo setting epoxy. All hydrants shall be furnished with a minimum of two drain valves and the drain valve facings shall made of either rubber or a polyethylene material.

The drain valve facings shall be retained in position by stainless steel screws. The Seat Ring shall thread into a bronze drain ring forming an all-bronze drainway. All pressure seals shall be rubber "O-Rings". The area of the lower stem, which is reduced in a diameter, shall be sealed away from moisture by means of compression of the rubber main valve "O-Rings". All barrel flanges shall be an integrally cast part of the upper and lower barrels with the exception of those breakable flanges which are designed to break on traffic impact. All lower Bury castings shall be one piece up to and including a 6-foot Bury Fire Hydrant. The operating nut, Thrust collar, and Treaded Stem drive shall be one piece bronze. A friction reduction agent shall be located between the Thrust collar and hold down nut in the Bonnet section. All internal bronze parts shall contain less than 16% ZINC. All bolting material below ground shall be of full ¾ inch diameter. If the bolt is less than ¾ it shall be made of Silicon Bronze or 303 Stainless steel. If the lower barrel is made of Ductile Iron, then all below ground connecting parts, including the shoe, shall be of Ductile Iron. A raised bury line shall be integrally cast on the lower barrel to indicate ground line for proper hydrant setting.

There shall be no springs used in the internal construction of the hydrant.

For all Fire Hydrants, the finished landscaping must match the bury line just below the flange as indicated on fire hydrants. All hydrants must be cleaned and painted if necessary.

District will perform hydrant flow tests unless otherwise agreed to by the District. The District shall designate the hydrant(s) that will be tested.

Fire hydrants shall comply in all respects with latest A.W.W.A. (502), UL (246), & FM (1510) specification [removed "C-502."] Having a working pressure of 250 pounds P.S.I. and a hydrostatic test pressure of 500 pounds P.S.I. Hydrants shall be – 5-1/2 inch main valve opening, two 2-1/2 inch N.S.T. Hose Nozzles, one 4-1/2 inch N.S.T. Pumper Nozzle, fitted with Storz adapter, 4 foot bury, 6 inch M.J. Bottom Connections or flange connection, 1-1/4 inch operating nut. Open left, painted Sherwin Williams PPG-95-8002. Repainting of hydrants may be required by the District Inspector.

Stainless Steel Stem—The stem is made of stainless steel, having optimum elongation and tensile resistance capabilities.

The stainless steel stem threads are rolled in a separate cold pressing process in order to maintain the stainless steel structure and increase its strength. Furthermore, this method ensures smooth thread edges and consequently low operating torques.

The Stainless Steel stem is 100% lead free.

Body and Bonnet Assembly—The effective assembly of the valve body and bonnet ensures a durable tightness. A round rubber bonnet gasket fits into a recess in the valve bonnet preventing it from being blown out by pressure surges.

Stainless steel (304) bonnet bolts are countersunk into the valve bonnet and body of the valve. Encircled by the bonnet gasket and sealed with hot melt. Thus there is no risk of corrosion, as the bolts are not exposed to the medium or soil. Furthermore the bonnet bolts do not require re-torquing to ensure a proper seal of the bonnet and valve assembly.

Warranty--Ten-year warrant that covers both the cost of the defective valve and the reasonable cost to either repair or replace the defective valve.

12. SINGLE FAMILY RESIDENTIAL

All new single family dwellings shall have a public fire hydrant within three hundred fifty feet of its normal access from public right-of-way; maximum spacing shall be six hundred feet.

13. RESIDENTIAL ESTATES

Residential estate zone, which shall have a public hydrant within three hundred feet of its normal access from public right-of-way maximum spacing, shall be six hundred feet.

14. BUILDINGS

All new building in commercial, industrial and apartment (including duplex) shall have a public hydrant within two hundred feet of its normal access from public right-of-way.

15. LATERAL SPACING

Lateral spacing of fire hydrants shall be approved by the fire marshal, and predicated on hydrants being located at street intersections.

16. SPECIAL REQUIREMENTS

All buildings other than single family dwellings, which are located such that any portion is more than one hundred fifty feet in vehicular travel from a street property line, shall provide fire hydrants connected to the water system. The lead from the service main to the hydrant shall be no less than six inches in diameter. Any hydrant leads over fifty feet in length from water main to hydrant shall be no less than eight inches in diameter. Provisions shall be made wherever appropriate in any project for looping all dead end or temporarily dead end mains.

17. WATER METERS

All primary meters will be provided by the District as part of the GFC fees and Service Connection charges. All meter installations larger than 3” will require an isolation valve to be installed immediately downstream of the meter, and enclosed in the meter enclosure.

18. WATER METER YOKES

Yokes with check valve assembly, for 5/8 x ¾ inch meter shall be the standard. 1 inch meters shall be fitted with angle stops and angle checks. 1-1/2 and 2 inch, fitted with angle stops and angle checks. Mueller manufactured. The meter box shall be made of concrete or plastic and shall be of sufficient depth to expose the bottom pipe and allow a minimum of 10 inches from the top of the meter to the bottom of the lid.

19. VAULT COVERS

Valve box and vault covers shall be designed to carry the appropriate traffic loadings. When located in the street section, they shall be designed to carry H-20 loading.

20. BLOW OFF ASSEMBLY

Blow off assembly shall be installed as per the District standard 2-inch blow off-assembly detail drawing. No assembly shall be installed closer than 18 inches from or further than three feet from the end of the pipe.

21. BEDDING

Bedding material shall be placed a minimum of four inches under, around and to a level of six inches above the top of the pipe. Where in the opinion of the District existing backfill material may be used. Where the excavation is required below the normal grade line because of poor soil conditions, the base shall be course sand or crushed rock. Bedding material shall be course sand. Compaction of the trench backfill must be by mechanical tamping to a density of 95% as required by the District. All road crossings must conform to County specifications.

22. UNDERMINING OF ASBESTOS CEMENT WATER MAIN

District requires that when an existing asbestos cement (A.C.) water main is undermined by more than 3 lineal feet, one full stick of A. C. pipe from joint to joint must be replaced with ductile iron or C900 PVC pipe with Smith Blair or Romac compression couplings.

A District Inspector shall be on-site when an AC main is exposed and during any AC main replacement. When AC main is undermined and not replaced with ductile iron or PVC pipe, the backfill shall be controlled density fill (CDF); otherwise, sand or crushed rock backfill can be used. All new water main has to be disinfected before it is placed in service.

When the work is being done by the District, any costs associated with replacing the disturbed AC pipe shall be estimated by the District and collected as a deposit prior to commencement of construction. Any difference between actual costs and the deposit shall be collected or refunded.

When other utilities are replacing their existing utilities, District requires a minimum of two feet of vertical clearance from its facilities.

23. GENERAL REQUIREMENTS & PROJECT COMPLETION

Finishing and cleanup shall be accomplished without additional compensation. All manholes and catch basins shall be kept clean during the entire period of construction. The contractor shall provide dust control at all times.

Upon completion, the District will make a final walk through inspection after all the landscaping and paving has been completed. Checks will be made to see that all the valves are open, properly placed to final grade with operating nuts within 40 inches of the surface. (Note on As-built the length of extensions used). Finishing and cleanup shall be accomplished without additional compensation.

All fire hydrants set to bury line grade. All services set to grade, boxes intact and to grade. Pressure test and purity samples have passed and the hydrant flow test completed. District will need a total of six copies of the final As-built.
Existing asphalt, concrete payments, or bituminous surfacing disturbed by the work shall be replaced as

per appropriate jurisdiction specifications.
The District will not accept new water facilities as having been completed until final inspection and acceptance by the District.

24. MINIMUM UTILITY LINE SEPARATION REQUIREMENTS

Minimum Utility Separation Requirements

	Separation (feet)*							
	Electric U/G	Gas	Water Main	WW Force	WW Gravity	Storm Sewer	Structure	Major Vegetatio
District Water Main	5	3	2 to 3	7 to 10	10	4	10	10

* Horizontal distance from District water main for parallel utility lines or objects
WW = waste water

Vertical separation from all utilities shall be not less than 12 inches unless approved by the District.

25. FIRE SYSTEMS

The District General Manager has the right to require, add, modify, or delete any requirements he deems necessary.

The District allows two types of fire protection systems.

- Separate dedicated fire system connected independently to the water system and detached from any other water service.
- Residential fire sprinkler systems (single-family homes and duplexes only).

A. Dedicated Fire Systems

All fire suppression water systems are required to have:

1. A separate connection and service to the distribution system
a. Each fire suppression system shall be connected to the public water system with service lines the same size as the system feed line;
b. Fire connections are dedicated to suppressing fire only and no other use is authorized and violators penalized;
c. Valves shall be provided at the tap onto the supplying water main which shall have a complete valve box providing access to operate the valve with a lockable lid.

2. A backflow assembly commensurate with the degree of hazard
a. All fire suppression water system connections to the District mains shall be protected with a backflow assembly. Fire protective systems shall be protected with a Double Check Detector Assemblies (DCDA) or with a Reduced Pressure Detector Assemblies (RPDA) based on the degree of hazard at the discretion of District, who's decision is final;
b. Backflow assemblies protecting fire systems shall be installed in a meter box (2" or less in size) or concrete vault (larger than 2") at the property line or easement line;
c. Fire sprinkler systems shall have a pipe-length distance of one hundred (100) feet or less between the supplying water main and the (Christmas tree) riser

distribution point;

d. Backflow assemblies shall be placed on private property and are owned and maintained by the owner of said property;
e. It is the responsibility of the property owners to properly maintain the backflow assembly and comply with the State of Washington and District standards.

3. Protection of the Backflow Assembly

a. Fire suppression service line meters 2" and smaller shall be in a meter box providing minimum clearances specified herein;
b. Fire suppression service line meters larger than 2" shall be enclosed in an approved enclosure providing minimum clearances specified herein. Vault installations shall conform to District standards;
c. Vented assemblies (RPBA's & SRPVB's) require drains below the assembly piped or mechanical pumped to atmosphere with pipe capable of exceeding 120% of the maximum flow available through the service line without flooding or affecting the assembly;
d. Backflow assemblies larger than 2" shall be firmly supported from a stable floor;
e. Backflow assemblies located higher than five feet from level ground surface shall have a platform constructed to L&I standards with an applicable building permit for purposes of testing and maintenance of the valve;
f. All enclosures of backflow assemblies shall have access through doors that swing away from the valve and are wider than the assembly is long.

4. Use Meters

a. Fire suppression systems 2" and smaller shall have a meter on the service line before and within 18" of the backflow assembly;
b. The meter shall be located at or as near as possible to the property line or easement line;
c. Meters shall be Sensus© SR II® Radio-Read meters that reads in cubic feet with the capability to easily transmit the reading to the public street;
d. Systems over 3" may use approved proportional detection meters for fire suppression only. These proportionate meters shall be a part of the assembly;
e. Proportionate meters shall be the nominal size as the bypass and mounted on and within the bypass;
f. Where radio reads are not possible, such as within buildings, accessible meter touch pads shall be provided at an elevation of 5 feet above the floor.

5. Permits and Inspection during installation

a. A permit to install a fire suppression system and/or a fire suppression system is required by and obtainable from the front counter of the corporate offices of the District;
b. District will provide an inspector at the owner's expense to observe the fire suppression system installation up to and including the Post Indicator Valve (PIV). The PIV is to be located as directed and approved by the Fire Marshal of the appropriate jurisdiction.

6. General requirements

a. Post indicator valve (P.I. valve) shall be at least 20-feet away from a flammable building. Non-flammable building P.I. valve may be installed in wall. Note: Contractor must obtain approval from fire district or department. The installations must have a valve off the water main flanged to the tee; also all fire systems must use approved backflow protection, commensurate with the degree of the hazard. This should be taken into consideration when designing fire sprinkler systems. All pipe shall be Class 52.
b. Fire line responsibility:
   - All 1"-3" fire lines with District meters—maintenance responsibility ends at the meter.
   - All 4"-12" fire line connections maintenance responsibility ends 10' from main line tee or at right-of-way property line. If P.I. valve is located nearer than 10' to tee, then maintenance responsibility ends District side of P.I. valve.
   - All gate valves must have a valve box with locking lid (Tyler 6855 spec).

c. Fire systems are to be protected with double check detector assemblies or with reduced pressure detector assemblies, both are required to have a bypass meter -- Sensus Iperl meter with one cubic foot increments and approved radio read. The touch pad is required to be installed in the vault lid. If the system is in a building the pad must be installed in an outside wall no higher than 5'.

B. **Residential Fire Sprinkler Systems**

Voluntary residential (single-family homes and duplexes) fire sprinklers systems were encouraged through House Bill 1295 effective in 2011. The District prefers installation of a multipurpose, flow-through system for residential customers but will consider variations to the concept of a dedicated fire sprinkler system (Refer to *Washington Water Utilities Council, Guide for Water Utility Managers and Governing Bodies on Residential Fire Sprinkler Systems, October 2008*).

The District favors the use of a multipurpose, flow-through system that uses the same water service and household plumbing to supply the fire sprinklers and the various domestic water uses in the home. The District will have final approval of what system and configuration is allowed. Minimum requirements for a flow-through system are:

Flow-Through System

1. The standard service will involve a 1-inch service line and a full ¾-inch meter. The service and meter size will be determined by the fire flow demand as provided to the District and other factors such as system pressure, length of the service line, elevation change from water main to the home and available fire meters.
2. All in-home fire sprinkler piping must terminate at a fixture getting regular domestic use to insure flow through all parts of the in-home system.
3. Backflow prevention will not be required except in special circumstances.
4. All system components must be UL and NSF approved.
5. District staff must have access to the residence to verify that these requirements are met and confirm that all system inspection fees are paid.

All applicable provisions under Dedicated Fire Systems above, such as meter, meter box and permit requirements, still apply to these flow-through systems.

26. HYDRANT METER REQUIREMENTS

1 Temporary Water Service

At the District's discretion, temporary water service may be provided to accommodate special needs for water at a fixed site on a short-term basis (e.g. on-site needs for construction activities). Temporary water service may be provided from a District main or from a fire hydrant specifically designated for this purpose by the District (see Section 2.9.2). Only District personnel are authorized to install a connection to a District main or fire hydrant for this purpose.

Temporary service may be authorized for a period not exceeding six months at a time. Upon expiration of the initial six-month period, a customer may request an extension of temporary service for one additional six-month period. No more than one extension will be granted, unless authorized by the General Manager.

A customer obtaining temporary water service will not be required to pay a SCC, or SDF. However, a customer obtaining temporary water service will be required to pay a deposit for the estimated costs of installation and removal of the equipment required for temporary service, as well as a damage or security deposit. In addition, temporary service will be metered and the customer shall be required to

pay both a meter-reading charge and a charge for water usage in accordance with the appropriate rate schedule (see Appendix B, Tables B-6 to B-8). Arrangements for metering and billing will be established on a case-by-case basis.

Upon termination of temporary service, the District will disconnect the temporary water service and take possession of the associated District equipment, or, if appropriate, convert the temporary service to permanent water service. Following disconnection or conversion, and payment of all outstanding charges for water usage, the District shall return any surplus of installation and removal charges that exceed the actual costs incurred by the District. In addition, the District shall refund any damage or security deposits, less the amount needed to replace or repair District equipment. However, in the event the customer fails to pay outstanding charges for water usage, the District may retain an amount equal to such outstanding charges.

2 Hydrant Use

A hydrant meter deposit is per PUD rates ($1500.00 in 2020) and consumption based rates will be paid.

No person shall operate or tamper with a fire hydrant connected to the District's water system, without the express written approval of the District or, in the case of an emergency threatening life or property, the approval of an authorized representative of the appropriate fire department. In addition to the penalty established in Section 2.7.1, any person violating this provision shall pay for the amount of water used, as estimated by the District and based on the applicable rate schedule.

At the District's discretion, authorization may be granted to take water from a fire hydrant connected to the District's water system. Procedures for authorizing use of fire hydrants shall be as follows:

(a) When a customer desires to use a fire hydrant for Temporary Water Service (short-term water service at a fixed site) the procedures in Section 2.9.1 shall be followed. The customer shall utilize only the hydrant specifically designated by the District for this purpose, and will obtain water through a separate valve installed by the District on that hydrant.

27. CROSS CONNECTION CONTROL

A. *BACKFLOW PREVENTION*

1. GENERAL

Backflow Prevention, or Cross Connection Control is for protection of water quality and is regulated by WAC 246-240-290 and administrated and enforced by the District. The policies, procedures, and criteria for determining appropriate minimum levels or protection shall be in accordance with the Accepted Procedure and Practice in Cross Connection Control Manual – Pacific Northwest Section American Waterworks Association, Seventh Edition or any superseding edition.

All irrigation systems, new commercial water services, commercial services for building remodels and special residential services must have approved backflow assembly protection, commensurate with the degree of the hazard.

Fire sprinkler systems shall have backflow protection commensurate with the degree of the hazard, but a minimum of a Double Check Detector Check Assembly is required on all new fire systems.

NOTE: All Backflow protection must be checked for flow as needed for sprinkler system designs.

The District's General Manager has the right to require, add, modify, or delete any backflow protection requirements (s)he deems necessary.

4. INSPECTIONS

1) All Backflow Assemblies installed are to be inspected by District.

5. TESTING

1) All backflow assembly installations will be the customer's responsibility to have the assembly tested by a Backflow Assembly Tester (BAT) certified in Washington by the state Department of Health.

2) All backflow assemblies require testing within a twelve month period conducted by a current and valid Backflow Assembly Tester (BAT) certified in the State of Washington by the Washington State Department of Health using proper equipment calibrated within the last twelve months of test date.

3) Waivers signed by the customer and on record with the District only allows for thirty (30) days for test reports to be submitted to the District. After the thirty-(30)-day deadline, all testers with outstanding waivers will be notified and have seven (7) days after the date of notification to turn in any outstanding test reports. After that time, the District will pull the waiver on the account and notify the customer directly. If a company or tester is continually submitting test reports late with "waiver tests" they run the risk of removal from the Districts tester list.

6. REPAIRS

1) All Backflow assemblies failing a Backflow Assembly Tester's (BAT) exam shall be repaired by a certified plumber with a backflow assembly endorsement by Washington State Labor and Industries.

B. ***BACKFLOW ASSEMBLIES***

R*educed Pressure Backflow Assembly (RPBA) and Reduced Pressure Detector Assembly (RPDA)*

1. Shall be installed in a horizontal configuration; unless approved for alternate configuration by State of Washington Department of Health.

2. Shall be installed a minimum of twelve (12) inches above atmospherically drainable grade.

3. An assembly installed more than five (5) feet above floor or ground level must have a permanent platform under it for the tester and/or the maintenance person to stand on. The platform must comply with all applicable safety standards and codes in effect and be covered by a properly executed building permit.

4. These valves do drip or spit from time to time. Adequate air gapped drain basket shall be installed and properly directed to a daylight drain or pumped drain capable of flows equal to the capacity of the service.

5. If anchoring to wall is necessary, there must be that at least six (6) inches of clearance between the wall and the assembly unless the testers or maintenance position is designated on that side, when a minimum 36" is required with clear access to and from the designated position.

6. All backflow assemblies shall be accessible for testing and maintenance.

Double Check Valve Assembly (DCVA) and Double Check Detector Assembly (DCDA)

1. Shall be installed in a horizontal configuration unless approved for alternate configuration by State of Washington Department of Health and the approval of the Cross Connection Control Department of the District.

2. Isolation valves and test cocks shall be accessible for testing and maintenance.

3. On fire systems double check detector assemblies or reduced pressure detector assemblies are required. Please check with the cross connection control department before installing.

Spill Resistant Pressure Vacuum Breakers (SRPVB)

1. Installation shall be approved by the Cross Connection Control Department.

2. Shall be installed in the approved orientation only.

3. Isolation valves and test cocks shall be accessible for testing and maintenance.

Atmospheric Vacuum Breaker (AVB)

1. AVB's are an approved assembly for backflow prevention except in specific applications which must be reviewed and approved by the Cross Connection Control Department prior to installation. Only for non-pressure backflow.

C. ***INSTALLATION REQUIREMENTS FOR BACKFLOW ASSEMBLIES***

1. Landscape Irrigation systems using Double Check Valve Assemblies (DCVA) in- ground for irrigation systems or Spill-Resistant Vacuum Breaker Assembly (SRVBA)/ irrigation systems

   a. Shall be installed in an approved configuration;

   b. Adequate space is required for DCVA's installed in a box below ground. Adequate room for both testing and maintenance shall be provided;

   c. The following are the recommended minimum sizes for a box for below-ground DCVA installation:

      i. ¾" to 1" Assemblies 10"x13"
      ii. 1¼" to 2" Assemblies 14"x20"

   d. The DCVA shall be installed with the test cocks facing up or to the most available side;

   e. DCVA's shall have six (6) inches of clearance below the valve. There shall be adequate drainage material below the valve (drain rock, gravel, pea gravel);

   f. DCVA shall not be more than twelve (12) inches from the top of the box;

   g. Three (3) inches of room shall be provided on the ends of the valve so that shut off ball valve can be accessed.

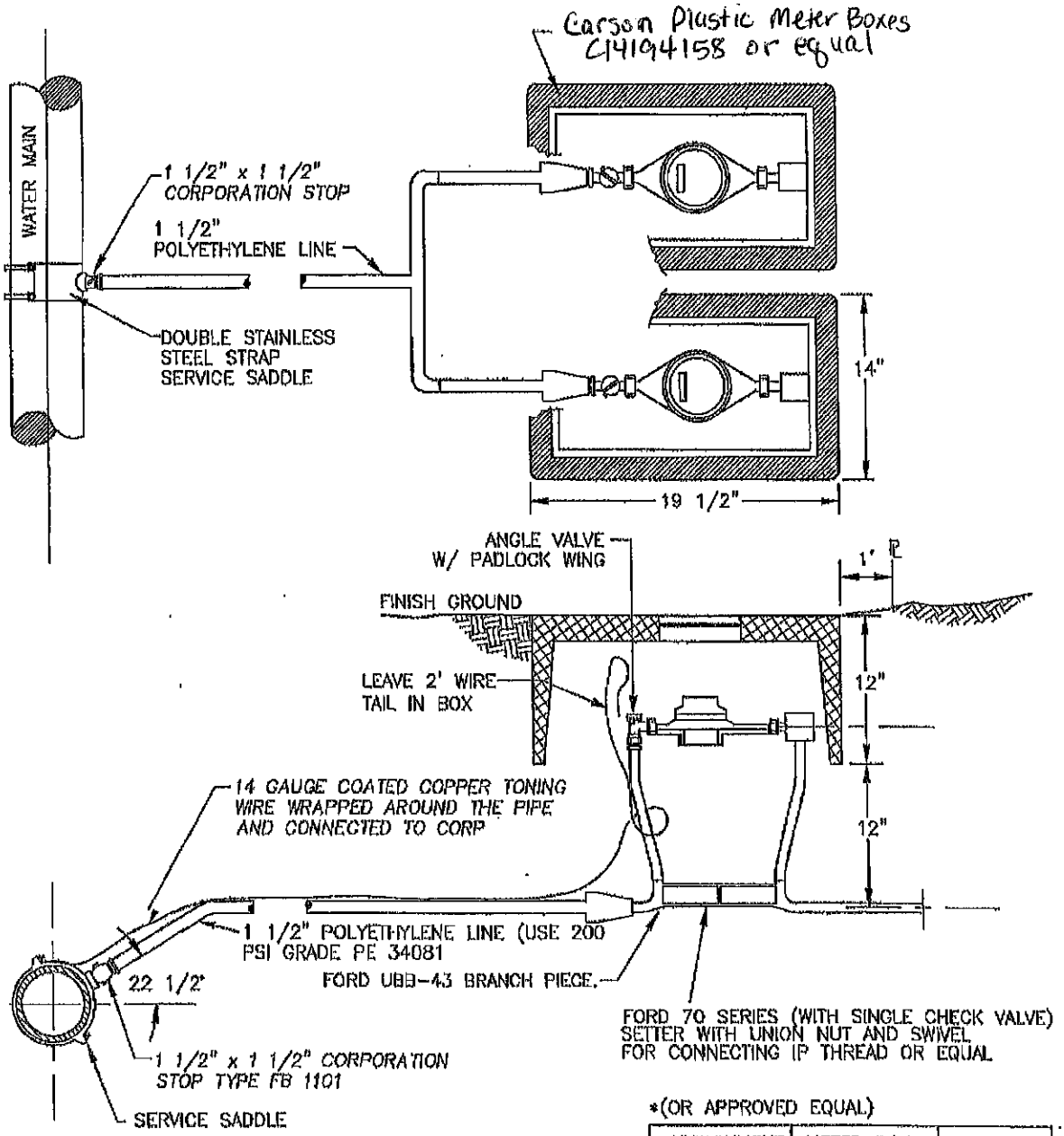
2. Pressure Vacuum Breaker Assemblies (PVBA)

   a. A PVBA shall only be installed in a vertical configuration a minimum of twelve (12) inches above the highest downstream piping

3. Atmospheric Vacuum Breaker (AVB) – special approval required

   a. An AVB shall be installed only in a vertical configuration, at least six (6) inches above all downstream piping (highest point of use);

   b. No control valve shall be installed on the downstream side of an AVB. The AVB shall be pressurized for no more than twelve (12) hours in any twenty- four (24) hour period.



*(OR APPROVED EQUAL)

ENVIRONMENT	METER BOX	LID TYPE
CONCRETE SIDEWALK	*BROOKS SERIES 375 CONCRETE OR CHRISTY 99X	CONCRETE
CONCRETE DRIVEWAY & OTHER TRAFFIC AREAS	*BROOKS SERIES 375 CONCRETE OR CHRISTY 99X	CAST IRON TRAFFIC COVER

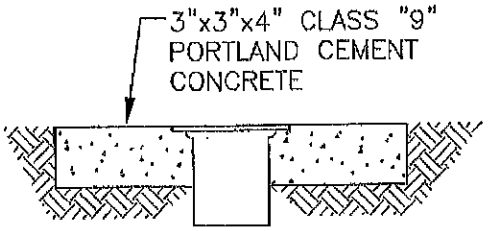
NOTES:

1. STAINLESS STEEL INSERTS REQUIRED FOR ALL PACK JOINTS.
2. ALL SERVICE SADDLES SHALL HAVE RUBBER GASKET AND I.P. THREADS.
3. WATER METER SHALL BE SUPPLIED & INSTALLED BY THE WATER SYSTEM OWNER.

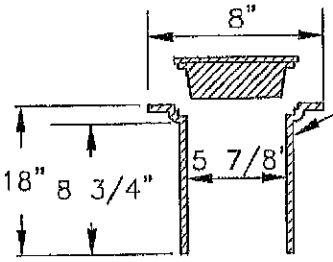
3/4" – 1" DUAL METER SERVICE

THURSTON PUD STANDARD DETAIL

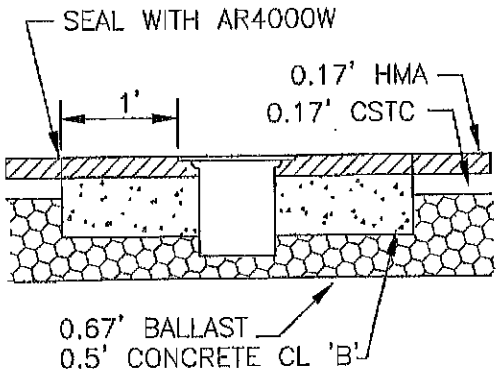
DOUBLE SERVICE CONNECTION



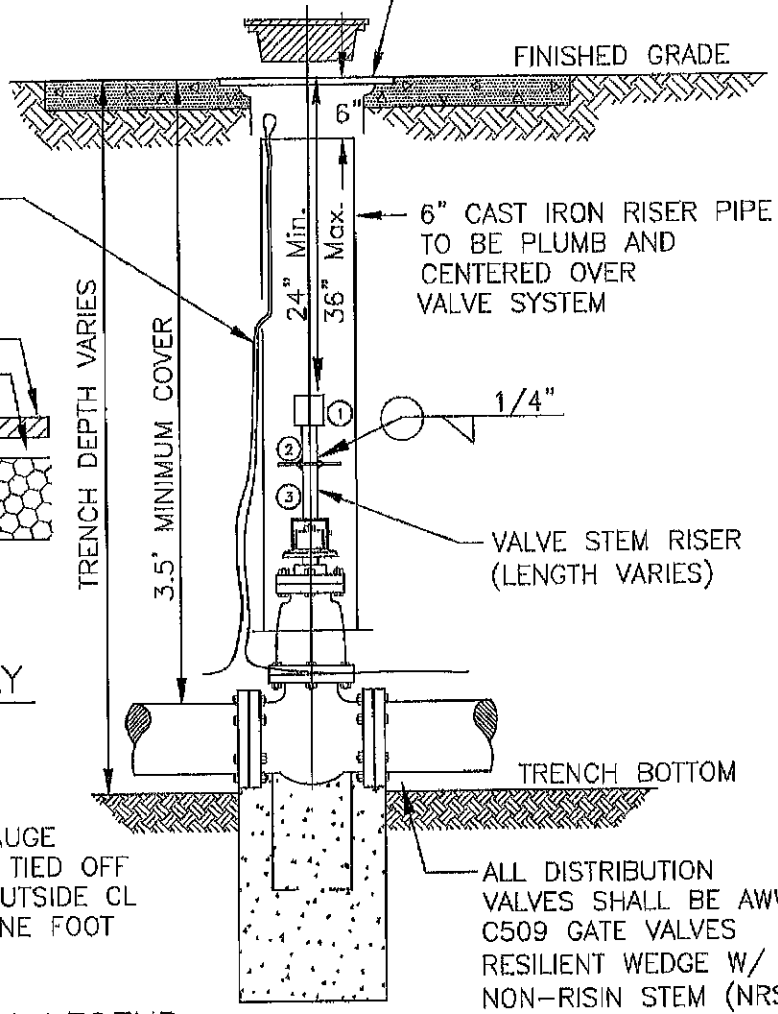
OUTSIDE PAVED AREA



SECTION



INSIDE PAVED ROADWAY



NOTE:

ALL VALVES MUST HAVE 14 GAUGE COATED COPPER TRACER WIRE TIED OFF AT VALVE BODY. EXTENDED OUTSIDE CL RISER PIPE THEN EXTENDED ONE FOOT TOP OF VALVE BOX.

VALVE STEM EXTENSION LEGEND

① VALVE OPERATING NUT OR 1 7/8" X 1 7/8" X 2" HIGH GRADE STEEL WELDED TO GUIDE PLATE.

② 3/16" THICK X 5 1/5" DIA STEEL GUIDE PLATE WELDED TO RISER SHAFT.

③ 2"X2"X 3/16" SQUARE STRUCTURAL STEEL TUBING TO FIT OPERATING NUT. LENGTH AS REQUIRED.

GATE VALVE SHOWN-SIMILAR INSTALLATION REQUIRED FOR BUTTERFLY VALVES.

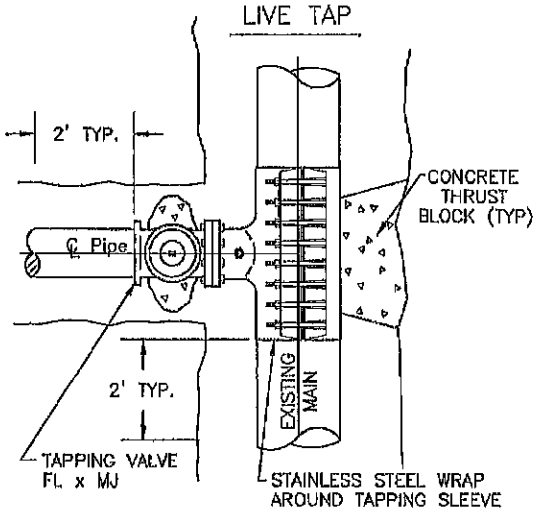
NOTE:

WELD ALL AROUND, AS SPECIFIED ABOVE

THURSTON PUD STANDARD DETAIL

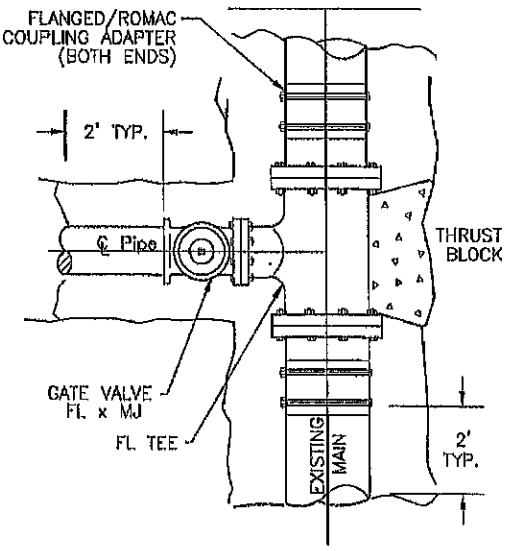
DISTRIBUTION SYSTEM VALVE ASSEMBLY

LIVE TAP



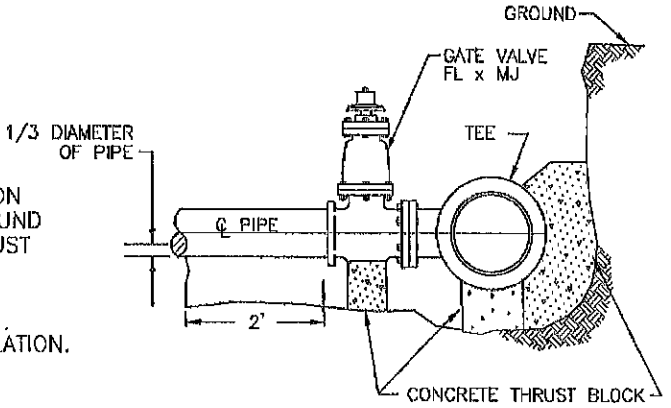
VALVE AND SLEEVE SHALL BE SUPPORTED AND BACKFILLED AS SHOWN BELOW-RIGHT.

CUT-IN-TEE



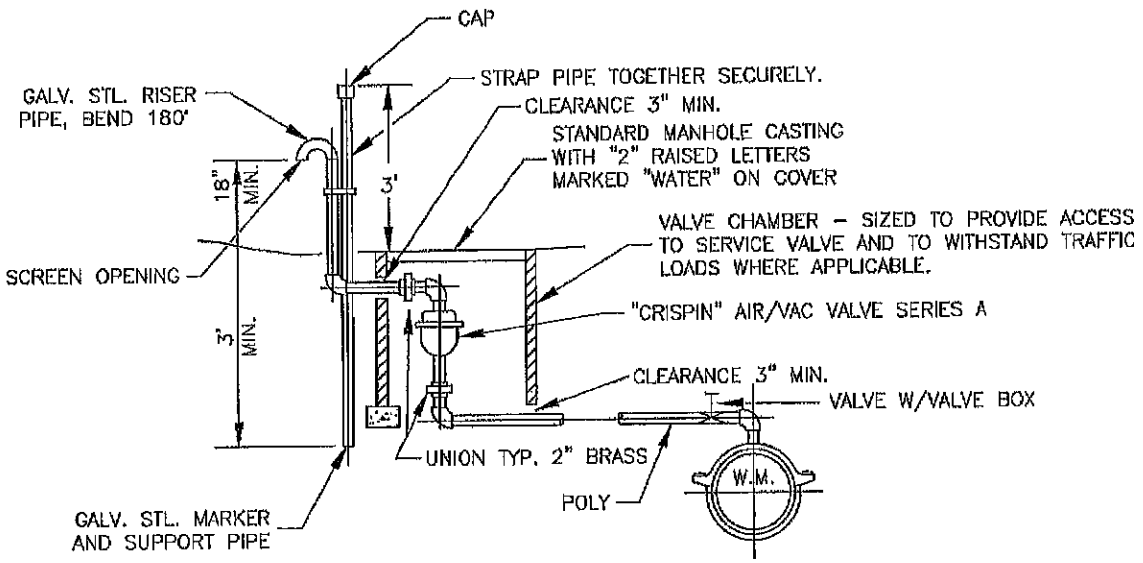
NOTES:

1. 11 MIL PLASTIC OR CONSTRUCTION FABRIC SHALL BE WRAPPED AROUND PIPE AND FITTINGS BEFORE THRUST BLOCKS ARE POURED.
2. SUPPORT VALVE AND SLEEVE CONTINUOUSLY THROUGH INSTALLATION.



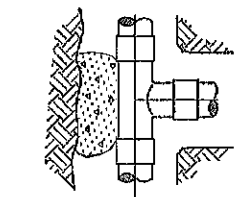
THURSTON PUD STANDARD DETAIL

CONNECTING TO EXISTING MAIN

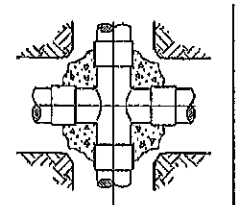


THURSTON PUD STANDARD DETAIL

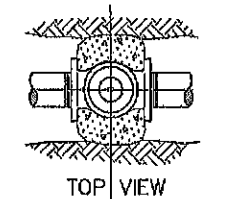
AIR VACUUM RELEASE ASSEMBLY



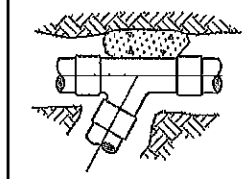
TEE



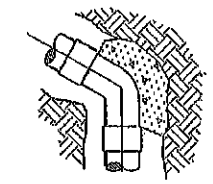
CROSS



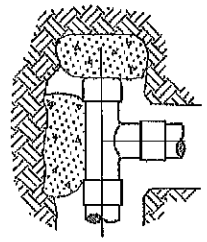
GATE VALVE



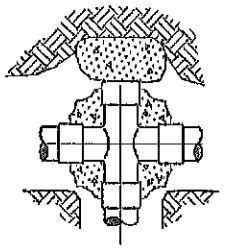
WYE



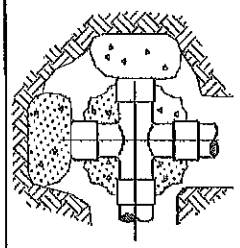
HORIZ. BEND



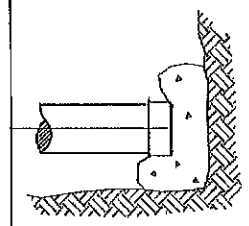
TEE WITH PLUG



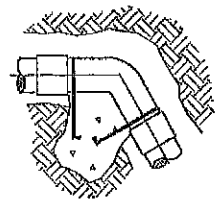
CROSS WITH PLUG



CROSS WITH PLUGS



PLUG OR CAP



45° – 90° VERTICAL BEND

NOTES:

1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. PLASTIC BARRIER SHALL BE PLACED BE-- TWEEN ALL THRUST BLOCKS & FITTINGS.
3. ANCHOR REBAR SHALL BE #5 ON 12" DIA. AND LESS WITH 30" IMBEDMENT, #5 ON 16"--24" DIAMETER WITH 36" IMBEDMENT.
4. PLUGS TO BE MINIMUM OF 5' FROM TEE, WYE CROSS ON VALVE.

THURSTON PUD STANDARD DETAIL

THRUST BLOCKING

THRUST LOADS

THRUST AT FITTINGS IN POUNDS AT 200 POUNDS PER SQUARE INCH OF WATER PRESSURE

PIPE DIAMETER	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	DEAD END OR TEE
4"	3,600	2,000	1,000	500	2,600
6"	8,000	4,400	2,300	1,200	5,700
8"	14,300	7,700	4,000	2,000	10,100
10"	22,300	12,100	6,200	3,100	15,800
12"	32,000	17,400	8,900	4,500	22,700
14"	43,600	23,600	12,100	6,100	30,800
16"	57,000	30,800	15,700	7,900	40,300

NOTES:

1. BLOCKING SHALL BE CEMENT CONCRETE CLASS "B" POURED IN PLACE AGAINST UNDISTURBED EARTH. FITTING SHALL BE ISOLATED FROM CONCRETE THRUST BLOCK WITH PLASTIC OR SIMILAR MATERIAL.

2. TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (S.F.):

   EXAMPLE : 12" – 90° BEND IN SAND AND GRAVEL
   32,000 LBS ÷ 3000 LB/S.F. = 10.7 S.F. OF AREA

3. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZE, PRESSURES AND SOIL CONDITIONS.

4. BLOCKING SHALL BE ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

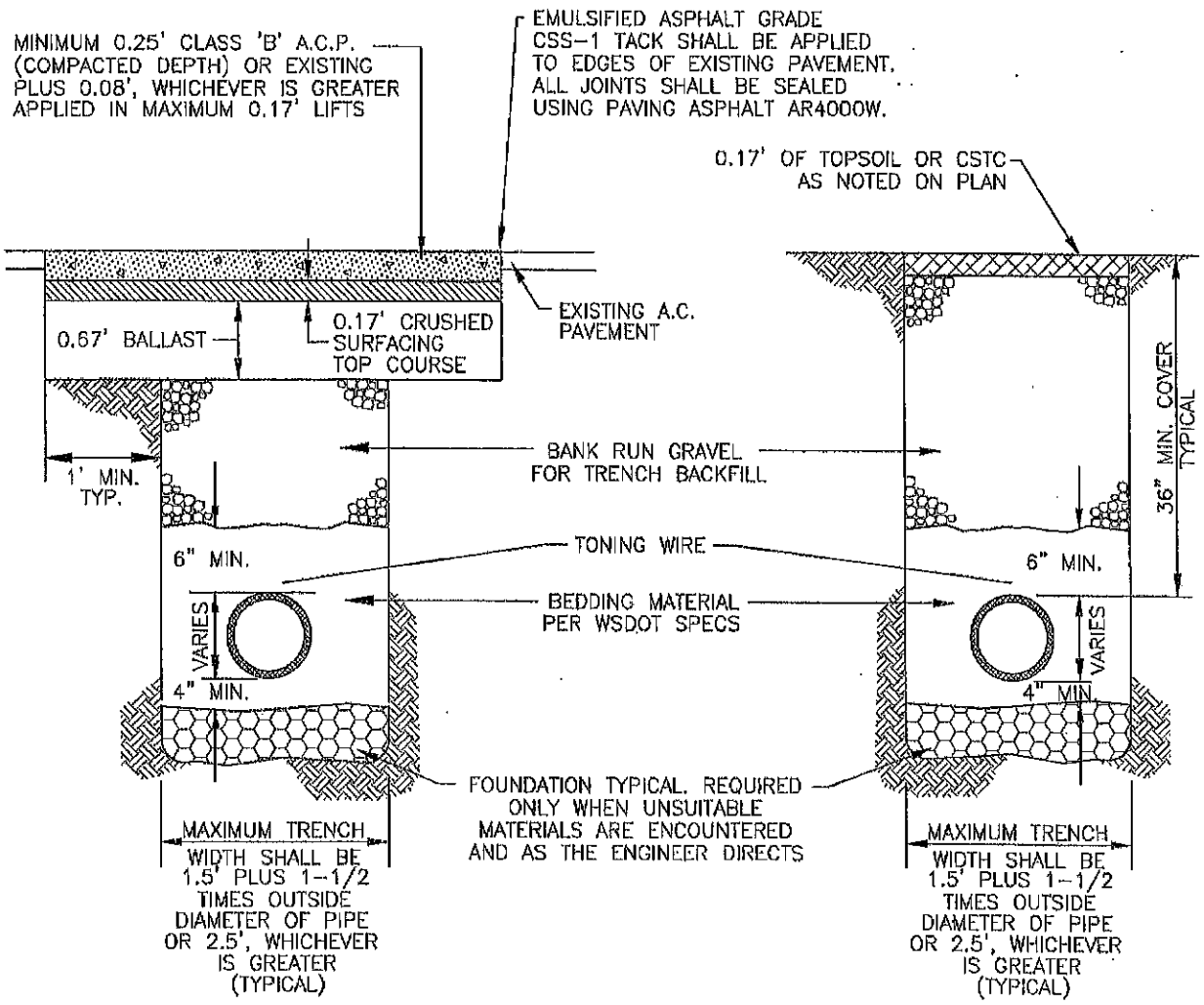
SAFE SOIL BEARING LOADS

FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET

SOIL	POUNDS PER SQUARE FOOT
MUCK, PEAT	0
SOFT CLAY	1,000
SAND	2,000
SAND & GRAVEL	3,000
SAND & GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

THURSTON PUD STANDARD DETAIL

THRUST BLOCKING ALLOWABLE LOADS

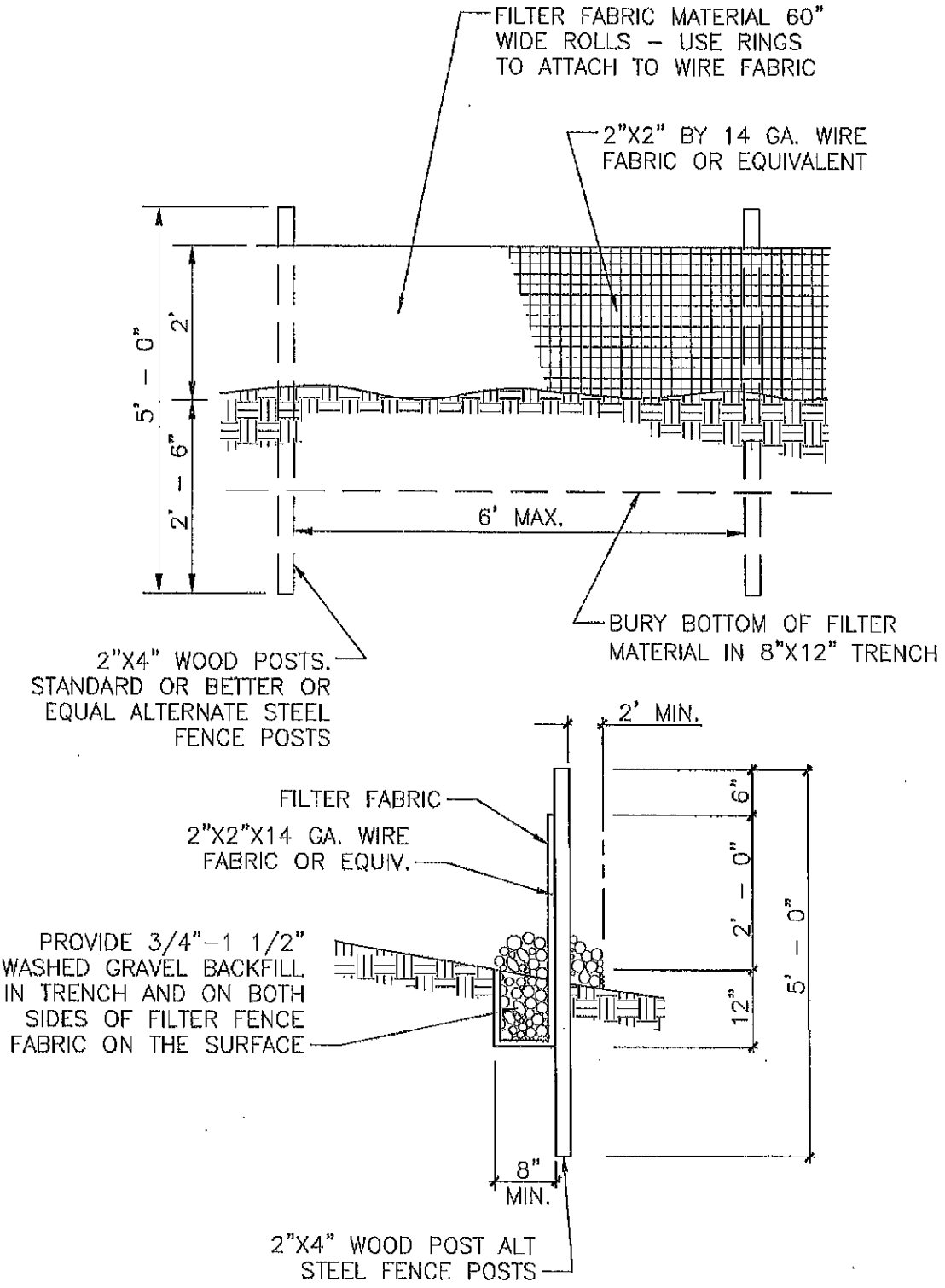


NOTES:

1. ALL MATERIALS EXCEPT A.C.P. AND BEDDING MATERIAL SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY.
2. BEDDING SHALL CONFORM TO SECTION 9-03.15 OR 9-03.16 OF THE STD. SPECS.
3. COMPACTION: BEDDING SHALL BE COMPACTED TO 95% MAX. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 85% IN UNPAVED AREA AND 95% IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.
4. ALL MATERIALS WORKMANSHIP AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION LATEST EDITION THEREOF.
5. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS WILL BE ALLOWED TO SUPPORT PIPE TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

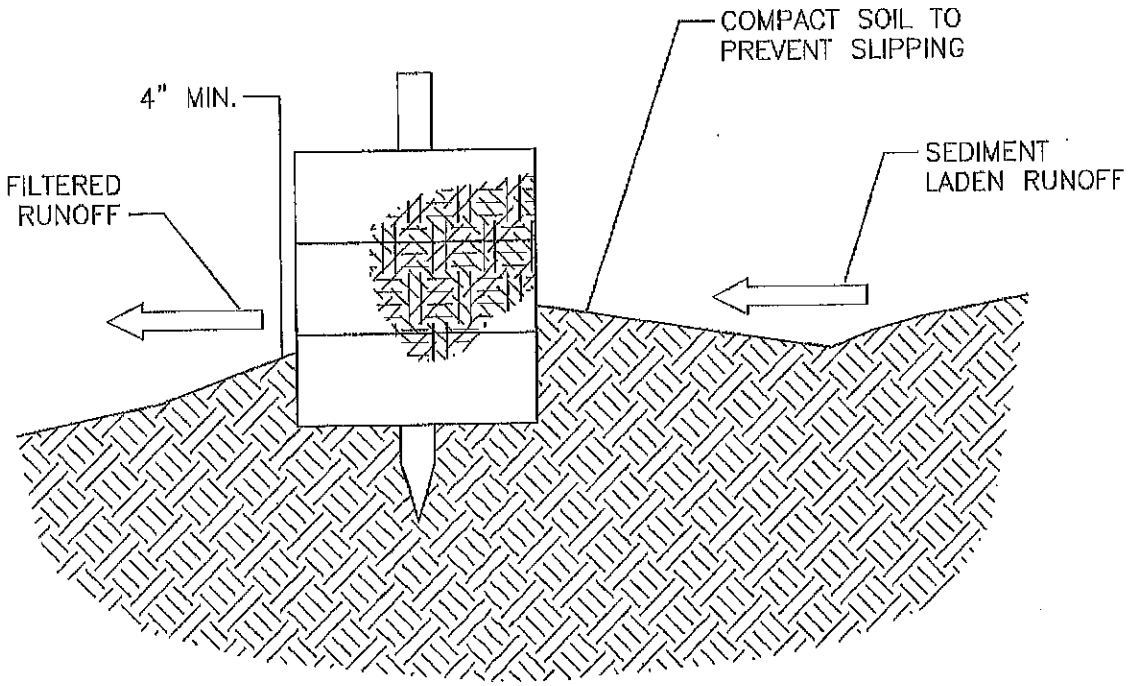
THURSTON PUD STANDARD DETAIL

TRENCH AND PAVEMENT RESTORATION



THURSTON PUD STANDARD DETAIL

FILTER FABRIC FENCE



THURSTON PUD STANDARD DETAIL

STRAW BALE BARRIER

Appendix V

STANDARD SYMBOLS FOR AWRI SYSTEM PLANS

M — STANDARD METER BOX WITH STANDARD METER

SHUT–OFF VALVE

BLOW OFF ASSY

H — HYDRANT

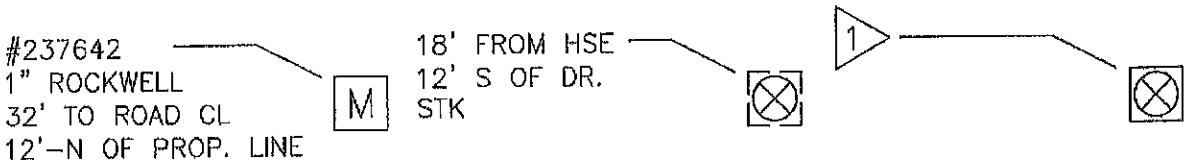
STANDARD METER BOX WITH SHUT–OFF VALVE (NO METER)

SERVICE SHUT–OFF VALVE WITH NO METER OR METER BOX

PH — PUMP HOUSE

M — AIR VACUUM RELEASE

WHERE POSSIBLE DIMENSIONS LOCATING METERS RELATIVE TO ROAD CENTER LINE OR PROPERTY LINES ARE SHOWN ON SYSTEM PLANS.
EXAMPLE:



EXAMPLE 1

SERVICE IS METERED
METER IS 32' FROM THE CENTER LINE OF THE ROAD AND IS 12' FROM THE NORTH PROPERTY LINE OF PROPERTY BEING SERVED.
METER NUMBER IS 237642

EXAMPLE 2

SERVICE IS NOT METERED & HAS SHUT–OFF VALVE ONLY LOCATED 18' FROM THE HOUSE SERVED AND IS 12' SOUTH OF THE EDGE OF THE DRIVEWAY METER LOCATION IS STAKED

EXAMPLE 3

SERVICE HAS A METER BOX BUT IS NOT METERED

NOTE 1 GIVES A DETAILED LOCATION OF THE SHUT–OFF VALVE

NOTE: WHENEVER POSSIBLE METER NUMBERS SHOULD BE INDICATED ON WATER SERVICE PLAN INDICATING SIZE AND TYPE OF METER.
WHERE APPROPRIATE METER LOCATIONS ARE MARKED BY A 2X2 STAKE PAINTED BLUE.

THURSTON PUD STANDARD DETAIL

STANDARD SYMBOLS FOR AWRI SYSTEM PLANS

Thurston PUD

Providing Safe, Reliable, Affordable & Sustainable Utility Service to Our Customers

STANDARD DRAWINGS

OCTOBER 26, 2020

SIGNED: _____

DATE: 10-26-2020

Thurston PUD

Providing Safe, Reliable, Affordable & Sustainable Utility Service to Our Customers

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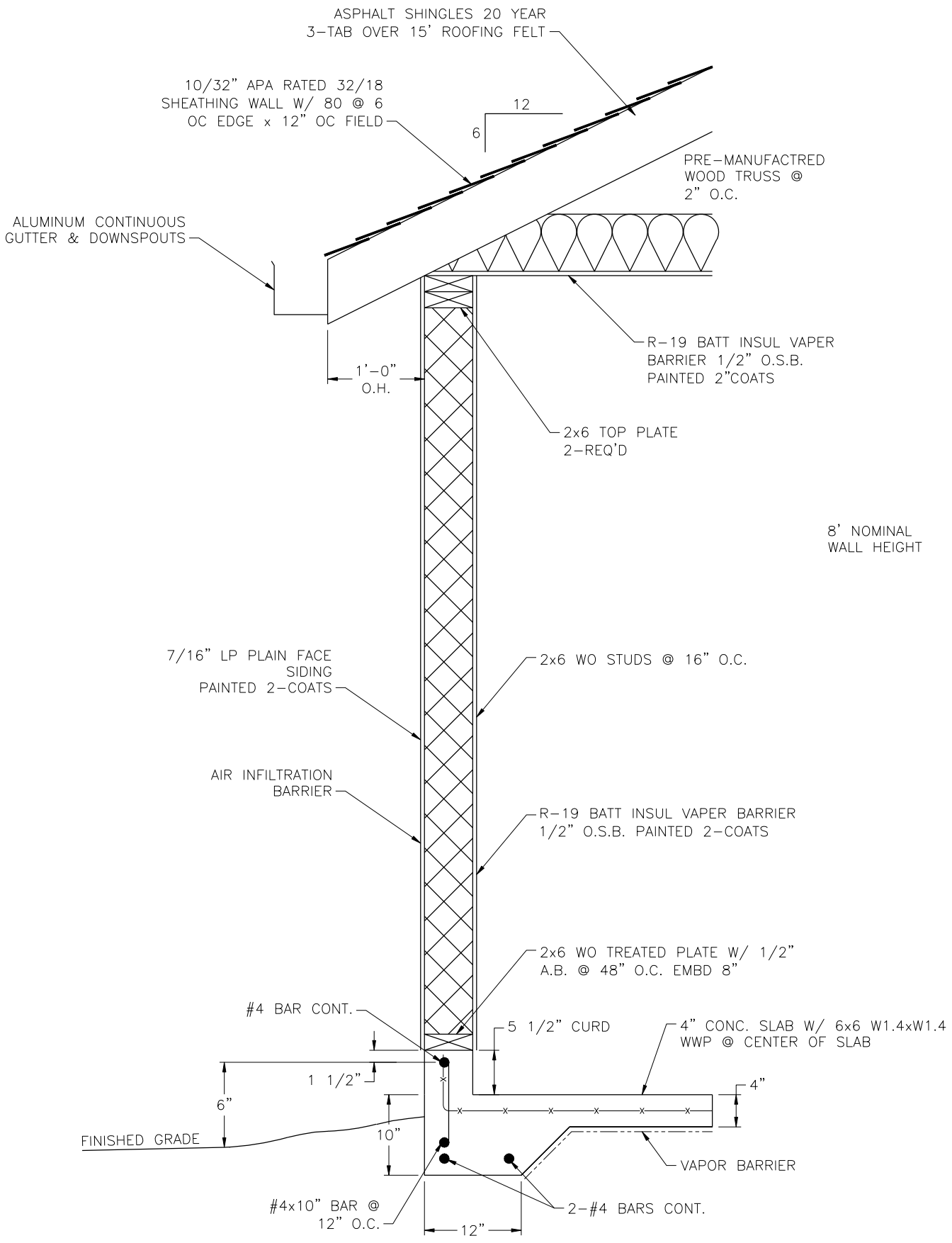
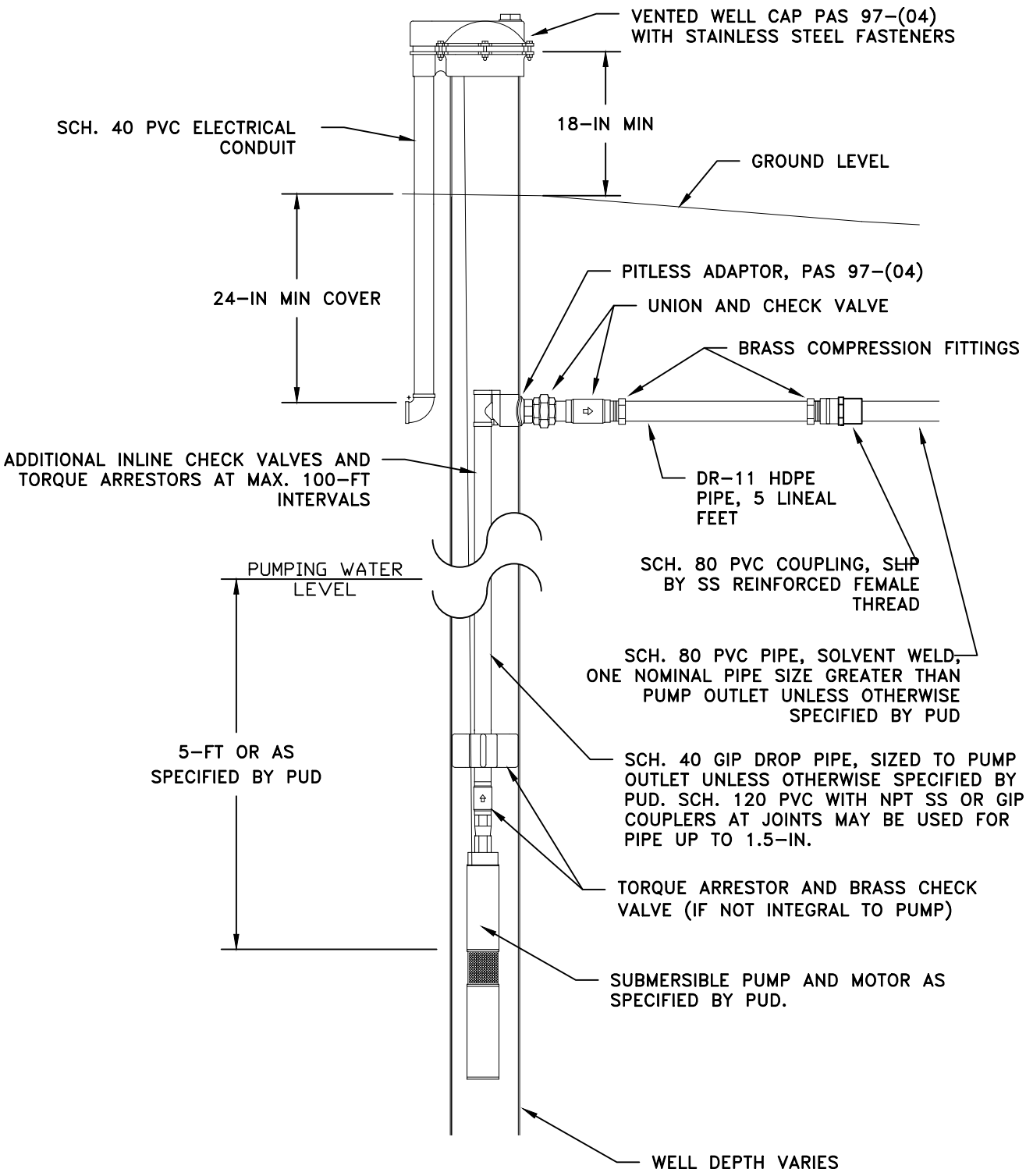


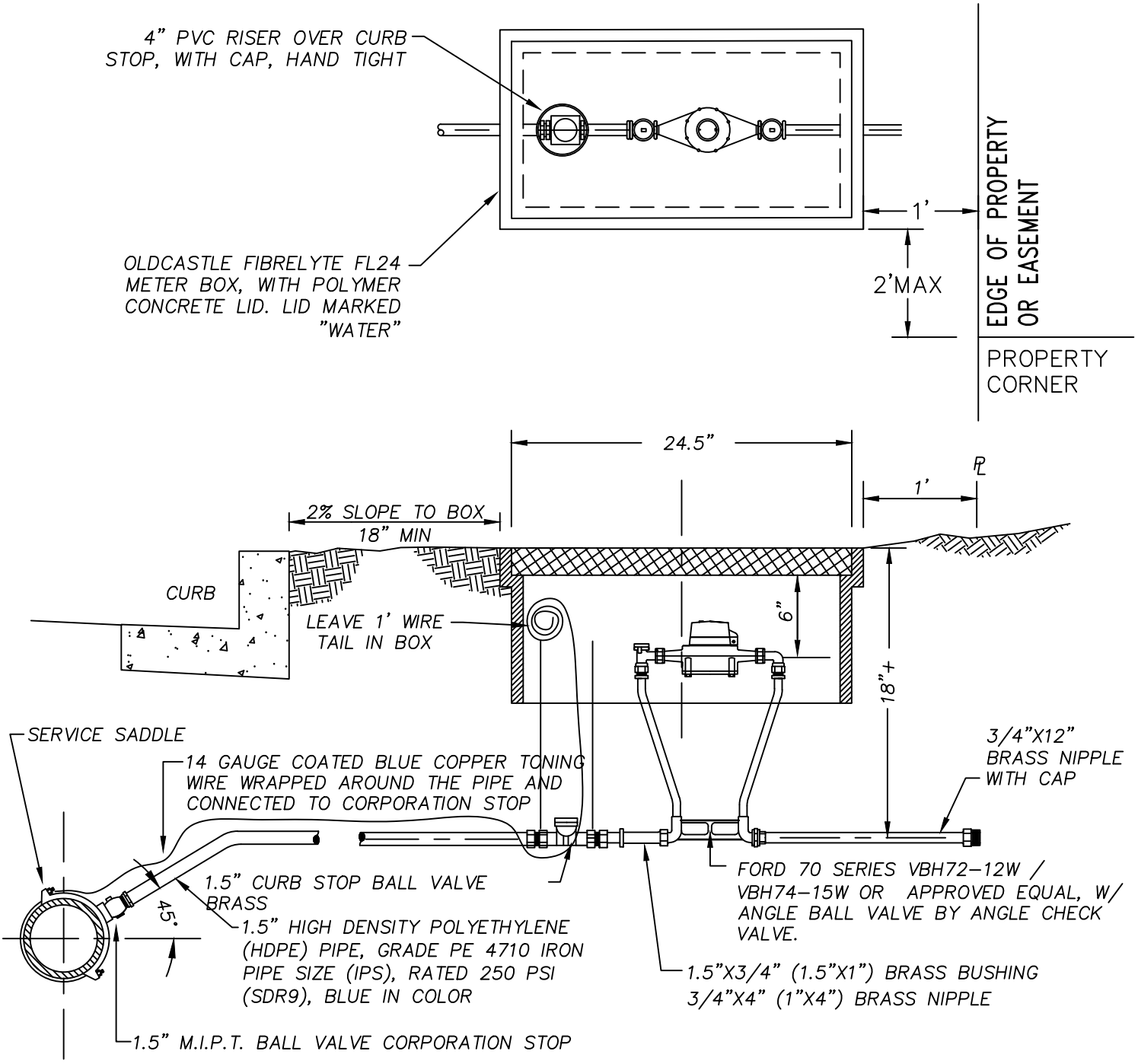
THURSTON PUD STANDARD DETAIL

FIGURE 1 - PUMP HOUSE CROSS SECTION



THURSTON PUD STANDARD DETAIL

FIGURE 2 – WELL HEAD DETAIL FOR PITLESS ADAPTOR



NOTES:

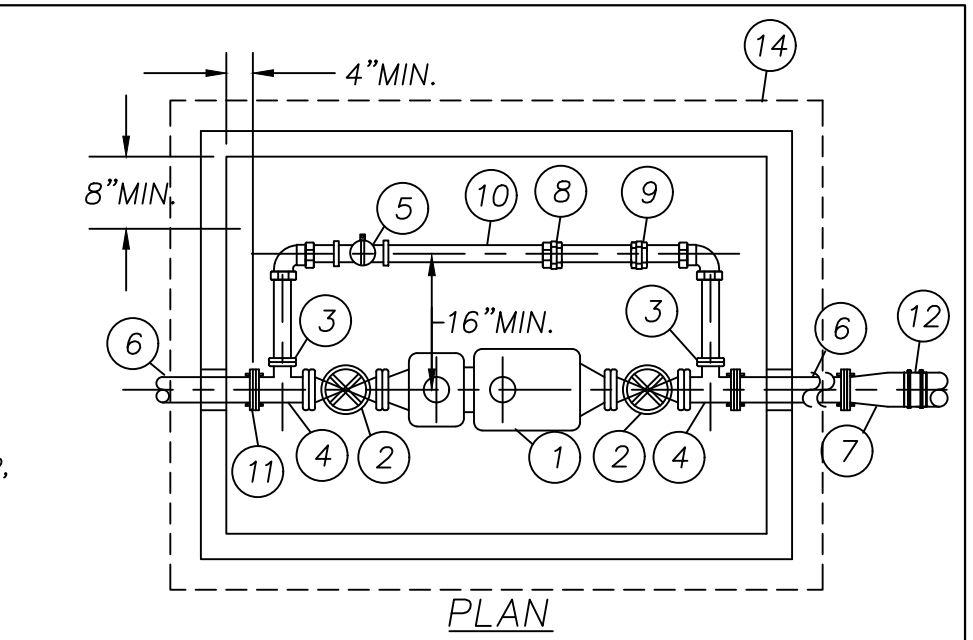
1. METER BOXES SHALL NOT BE INSTALLED IN CONCRETE OR CONCRETE DRIVEWAYS. WHEN NECESSARY CREATE PLANTER BOX FOR INSTALLATION.
2. STAINLESS STEEL INSERTS ARE REQUIRED FOR ALL PACK JOINT FITTINGS.
3. THE SETTER ANGLE STOP SHALL BE A MINIMUM OF 1" ABOVE BOTTOM OF METER BOX. INSIDE OF BAX SHALL BE CLEAN OF EXCESS SAND OR DEBRIS.
4. FILL THE AREA AROUND AND UNDER METER BOX WITH A MINIMUM 1' OF SAND OR WASHED PEA GRAVEL.
5. ALL BRASS AND COPPER SHALL BE LEAD-FREE COMPLIANT.
6. SETTER SHALL BE CENTERED IN THE BOX.
7. ALL SERVICE SADDLES SHALL HAVE RUBBER GASKET, I.P. THREADS, AND STAINLESS STEEL DOUBLE STRAPS. TORQUE TO MANUFACTURES SPECIFICATIONS.
8. LATERAL SHALL BE SLEEVED UNDER PAVED ROADWAYS UNLESS WAVED BY DISTRICT'S ENGINEER. SLEEVE SHALL EXCEED SERVICE LATERAL BY MIN. 1 NOMINAL SIZE AND SHALL EXTEND 1-FT BEYOND EDGE OF PAVEMENT.

THURSTON PUD STANDARD DETAIL

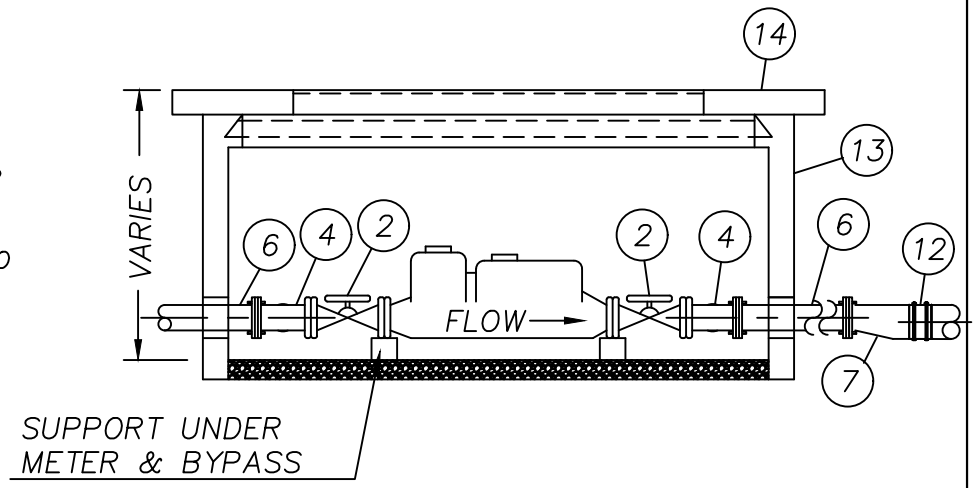
FIGURE 3 – 5/8" AND (1") SINGLE SERVICE CONNECTION

3 INCH METER INSTALLATION

1. 3" COMPOUND METER – BADGER RECORDALL OR APPROVED EQUAL WITH SENSUS SR II RADIO–READ, OUTPUT IN CF.
2. 3" FLANGED BRASS GATE VALVE WITH HAND WHEEL OR VALVE NUT.
3. 2" BRASS THREADED COMPANION FLANGE.
4. 3"X3"X2" BRASS FLANGED TEE
5. 2" BRASS BALL VALVE CURB STOP, LOCKING.
6. 3" CL 150 SPOOL.
7. 4"X3" CL 150 PEXMJSEB REDUCER AND 4" FOSTOR ADAPTOR (MJ RESTRAINED ADAPTOR).
8. 2" BRASS COMPRESSION FITTING.
9. 2" BRASS UNION.
10. 2" BRASS BYPASS PIPING
11. 3" FL X MJ ADAPTER AND RESTRAINING GLAND.
12. 4" HYMAX FLEXIBLE RESTRAINT COUPLING.
13. METER BOX; OLDCASTLE FRP 4872 POLY OR POLY CEMENT BOX
14. METER BOX COVER; OLDCASTLE 64–352P CONCRETE TOP WITH TWO SPRING ASSIST LOCKING GALV. NON–SLIP STEEL DOORS.



PLAN



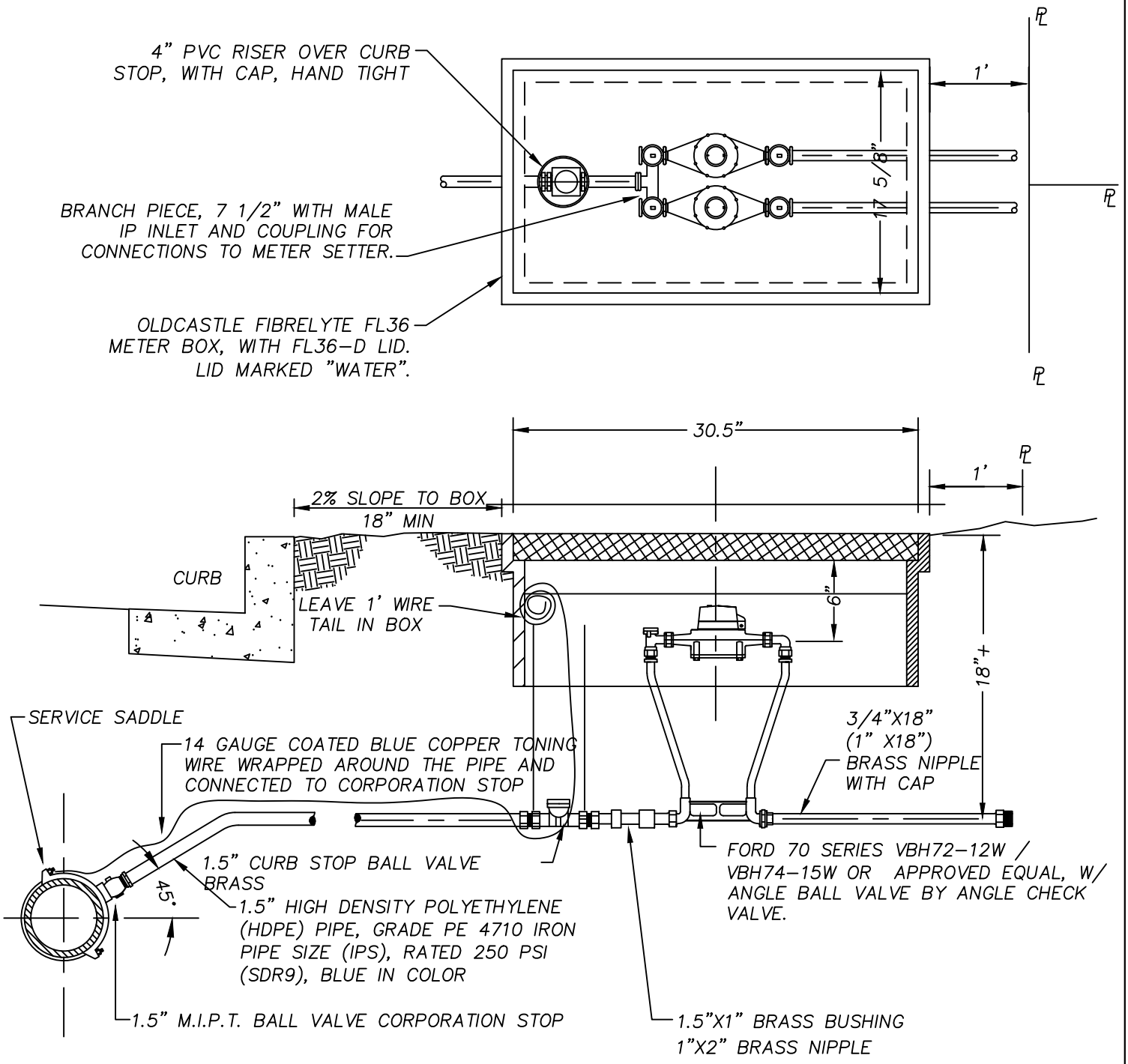
ELEVATION

NOTES:

A. METER BOX SHALL BE OLDCASTLE FRP 4872 OR EQUIVALENT; VAULT DIMENSIONS TO BE BASED ON CONFIGURATION OF METER, BYPASS AND VALVE ASSEMBLY AND MINIMUM CLEARANCES.
B. INSTALL GEOTEXTILE UNDER AND AROUND METER BOX AND PIPE ENTRY POINT. INSTALL MIN 3" OF 3/8" PEA GRAVEL BEDDING UNDER METER ASSEMBLY, BLOCKING METER ASSEMBLY UP 2" ABOVE PEA GRAVEL SURFACE; METER BOX MUST BE FREE DRAINING AND ABOVE WATER TABLE OR DRAINAGE MUST BE PROVIDED FOR.
C. PIPE LENGTHS MAY BE CHANGED DUE TO VARYING LENGTHS IN METERS USED. ALL PIPE ENTERING BOX MUST BE FULLY RESTRAINED. TH MAY BE SUBSTITUTED FOR FL CONNECTIONS WITH APPROVAL OF PUD STAFF.
D. BYPASS PIPING NOT REQUIRED FOR IRRIGATION ONLY INSTALLATIONS.
E. REMOTE SHALL BE LOCATED IN A READILY ACCESSIBLE AREA OUTSIDE THE METER BOX AS APPROVED BY THURSTON PUD.
F. ALL PIPING AND COMPONENTS SHALL BE LEAD–FREE; PIPE SHALL BE NSF–61 RATED.
G. THE METER BOX SHALL NOT BE INSTALLED IN ANY DRIVING SURFACE, AND SHALL BE SEPARATED FROM ANY ADJOINING DRIVING SURFACES BY MEANS OF CURBS, BOLLARDS, OR OTHER PHYSICAL BARRIERS AS APPROVED BY THURSTON PUD.
H. TRACER WIRE SHALL BE USED WITH ALL NEW PIPING INSTALLATION; COIL 5' EXTRA TRACER WIRE INSIDE METER BOX.

THURSTON PUD STANDARD DETAIL

FIGURE 3B – 3" COMPOUND WATER METER WITH BYPASS

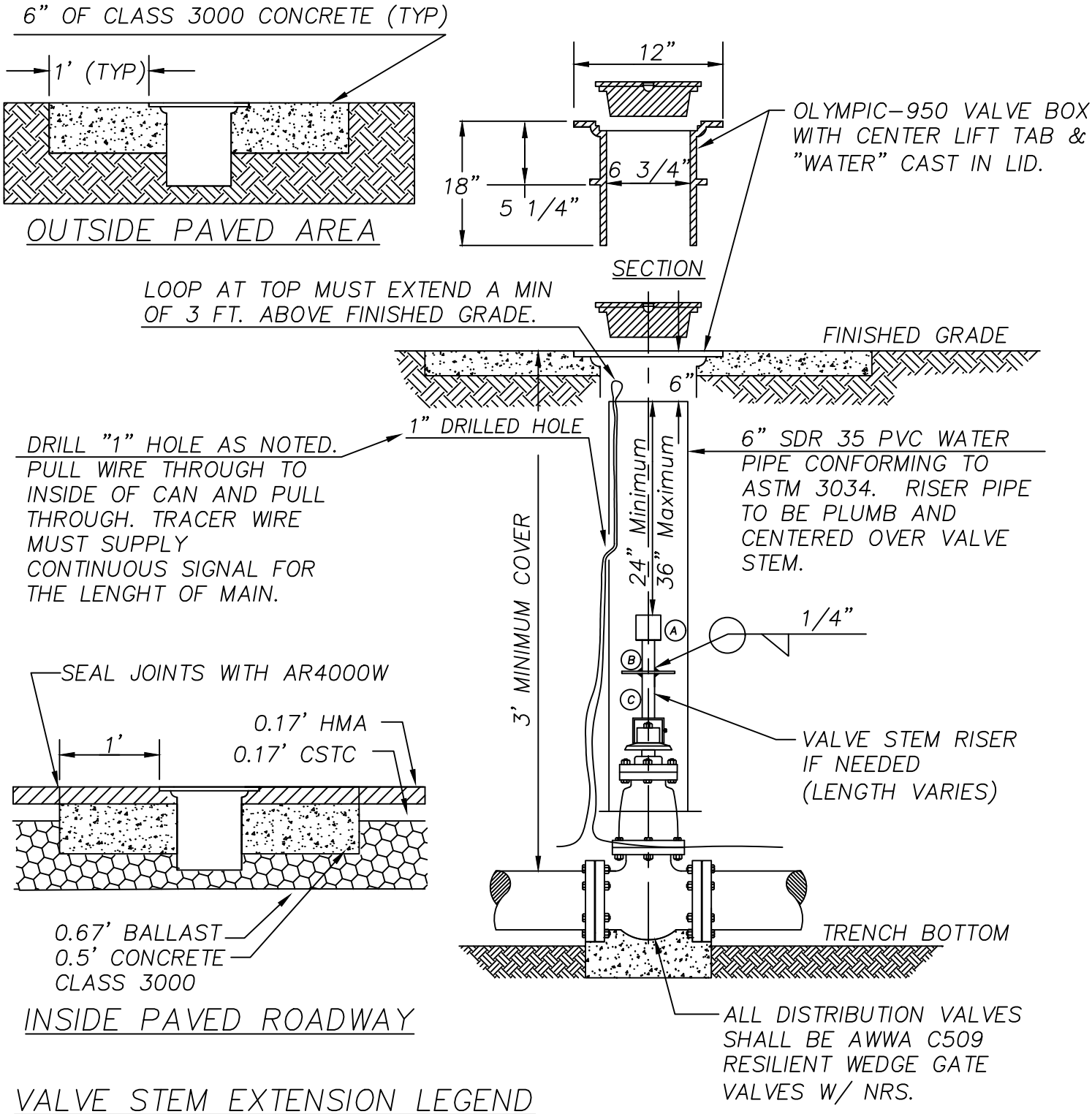


NOTES:

1. METER BOXES SHALL NOT BE INSTALLED IN CONCRETE OR CONCRETE DRIVEWAYS. WHEN NECESSARY CREATE PLANTER BOX FOR INSTALLATION.
2. STAINLESS STEEL INSERTS ARE REQUIRED FOR ALL PACK JOINT FITTINGS.
3. THE SETTER ANGLE STOP SHALL BE A MINIMUM OF 1" ABOVE BOTTOM OF METER BOX. INSIDE OF BAX SHALL BE CLEAN OF EXCESS SAND OR DEBRIS.
4. FILL THE AREA AROUND AND UNDER METER BOX WITH A MINIMUM 1' OF SAND OR WASHED PEA GRAVEL.
5. ALL BRASS AND COPPER SHALL BE LEAD-FREE COMPLIANT.
6. SETTER SHALL BE CENTERED IN THE BOX.
7. ALL SERVICE SADDLES SHALL HAVE RUBBER GASKET, I.P. THREADS, AND STAINLESS STEEL DOUBLE STRAPS. TORQUE TO MANUFACTURES SPECIFICATIONS.
8. LATERAL SHALL BE SLEEVED UNDER PAVED ROADWAYS UNLESS WAVED BY DISTRICT'S ENGINEER. SLEEVE SHALL EXCEED SERVICE LATERAL BY MIN. 1 NOMINAL SIZE AND SHALL EXTEND 1-FT BEYOND EDGE OF PAVEMENT.

THURSTON PUD STANDARD DETAIL

FIGURE 4 – 5/8" AND 1" DOUBLE SERVICE CONNECTION



VALVE STEM EXTENSION LEGEND

A. VALVE OPERATING NUT OR 1 7/8" X 1 7/8" X 2" HIGH GRADE STEEL WELDED TO GUIDE PLATE.

B. 3/16" THICK X 5 1/5" DIA STEEL GUIDE PLATE WELDED TO RISER SHAFT.

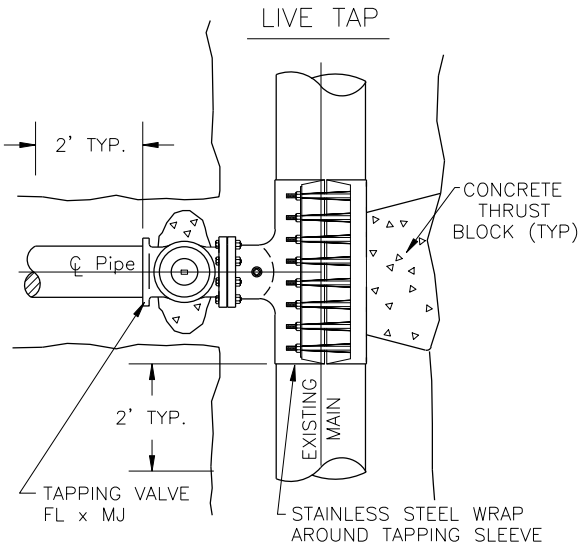
C. 2"X2"X 3/16" SQUARE STRUCTURAL STEEL TUBING TO FIT OPERATING NUT. LENGTH AS REQUIRED.

NOTE:

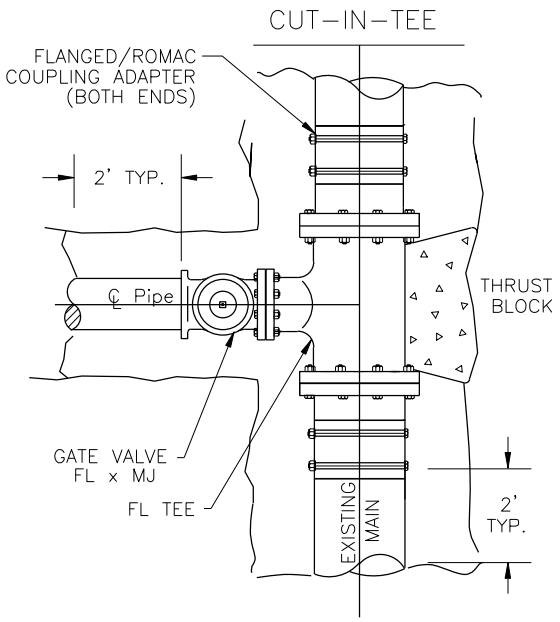
1. ALL WELDS TO SHAFT SHALL BE FILLET WELD ALL AROUND, AS SPECIFIED ABOVE.

THURSTON PUD STANDARD DETAIL

FIGURE 5 – DISTRIBUTION SYSTEM VALVE ASSEMBLY



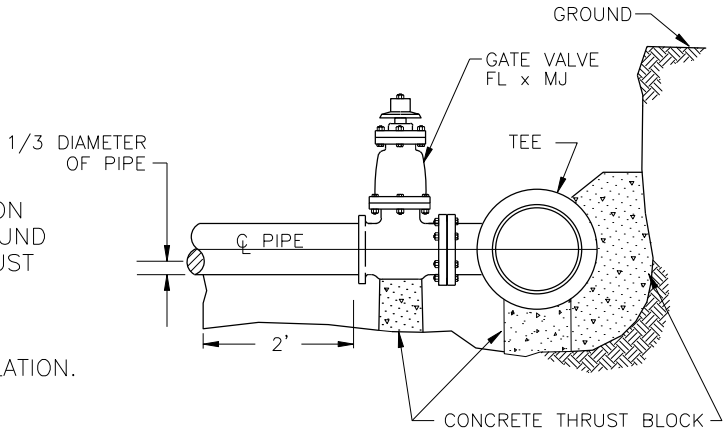
VALVE AND SLEEVE SHALL BE SUPPORTED AND BACKFILLED AS SHOWN BELOW–RIGHT.



NOTES:

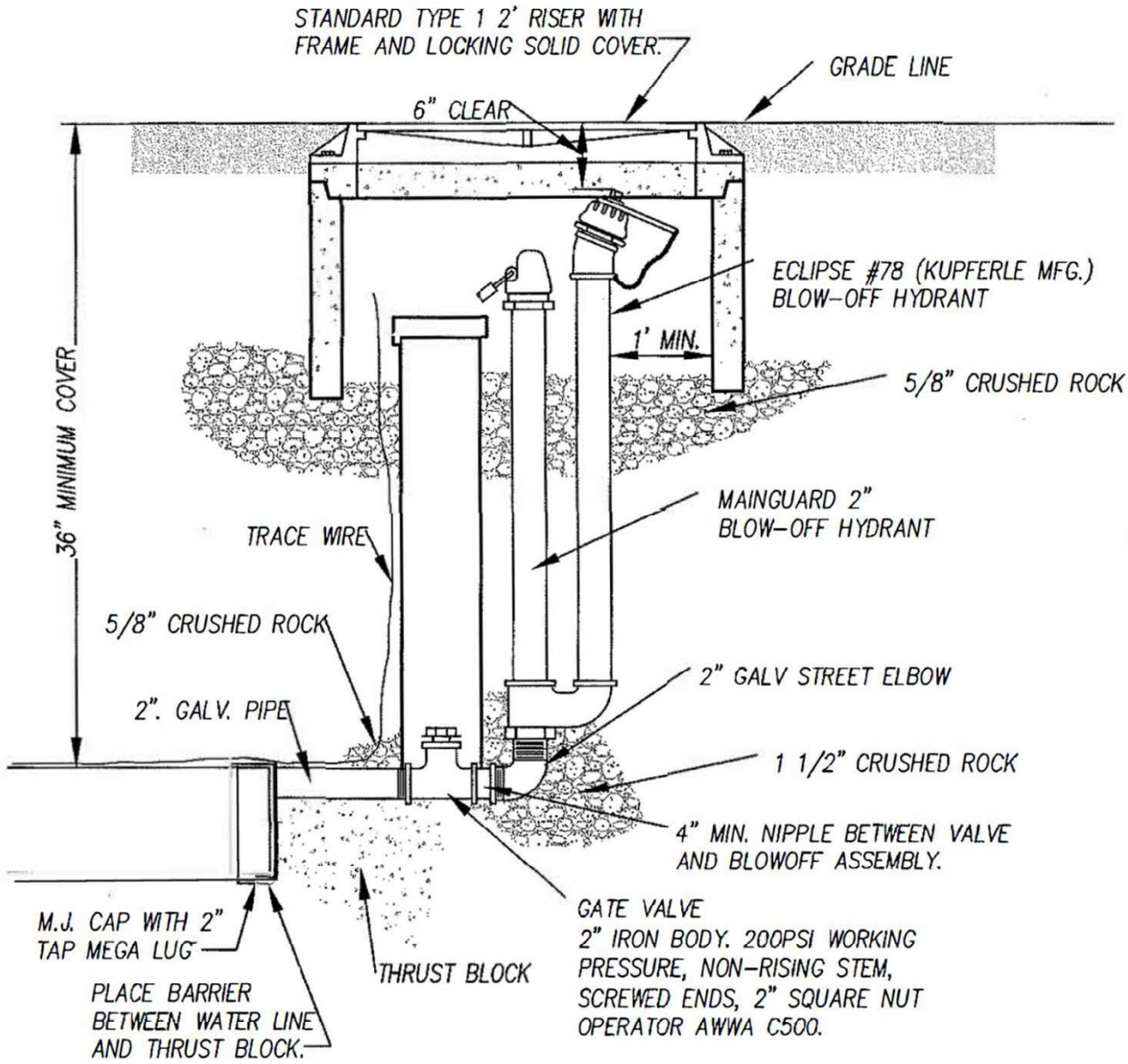
1. 11 MIL PLASTIC OR CONSTRUCTION FABRIC SHALL BE WRAPPED AROUND PIPE AND FITTINGS BEFORE THRUST BLOCKS ARE POURED.

2. SUPPORT VALVE AND SLEEVE CONTINUOUSLY THROUGH INSTALLATION.



THURSTON PUD STANDARD DETAIL

FIGURE 6 - CONNECTING TO EXISTING MAIN

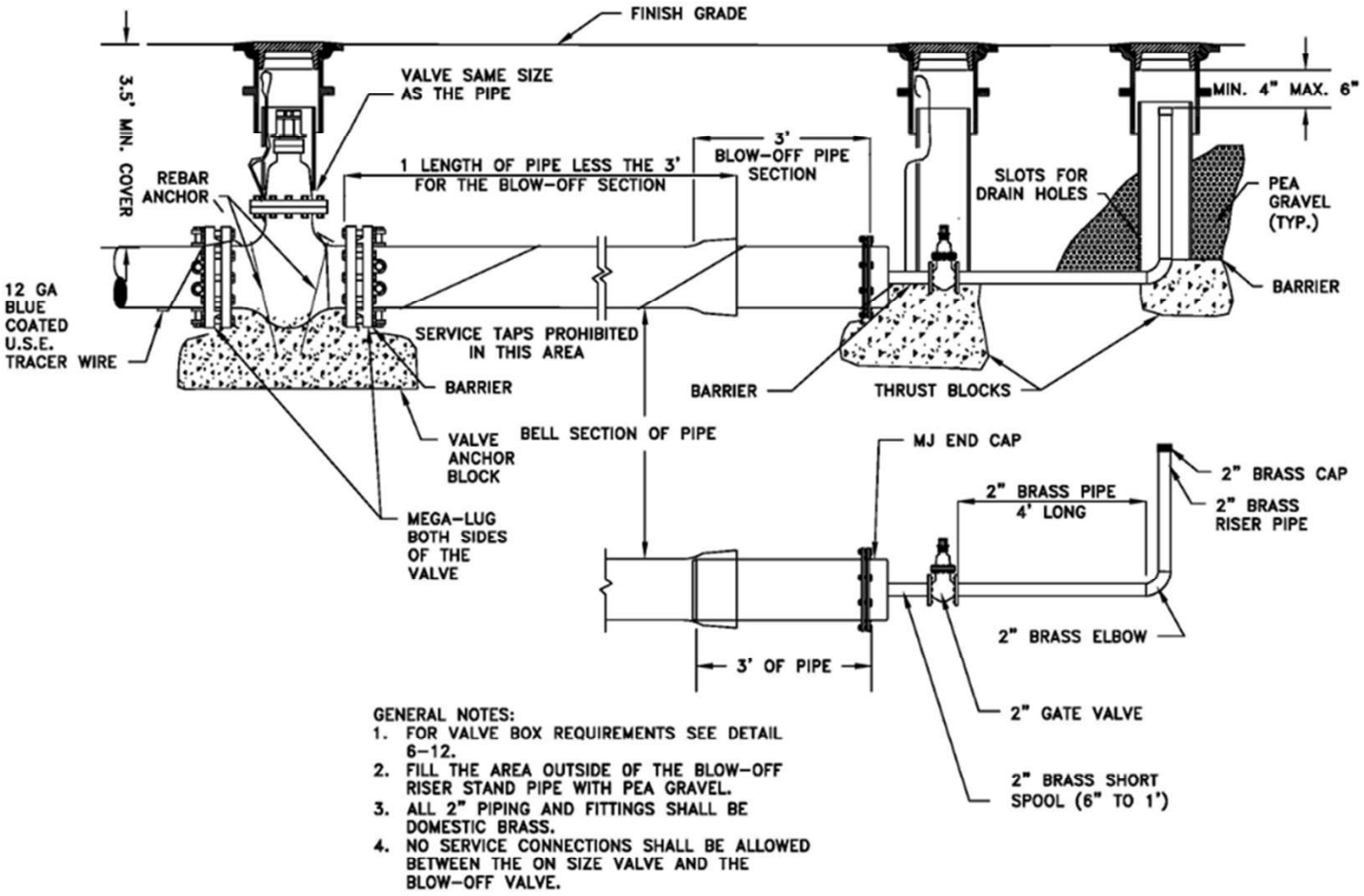


INSTALLATION NOTE:

1. BLOW-OFF WILL EXTEND FORM END OF MAINLINE.
2. THRUST BLOCK WILL BE POURED AS NOT IMPEDE THE DRAINING OF THE STAND PIPE.
3. A MINIMUM OF 18" OF 1 ½" DRAIN ROCK WILL BE PLACED AT THE BOTTOM OF TRENCH WITH THE REMAINDER OF TRENCH BACKFILLED WITH 5/8" CRUSHED ROCK TO THE BASE OF THE BOX.
4. #14 TRACE WIRE WILL BE RUN UP AND INTO THE BLOW-OFF BOX.

THURSTON PUD STANDARD DETAIL

FIGURE 7 - BLOW-OFF ASSEMBLY

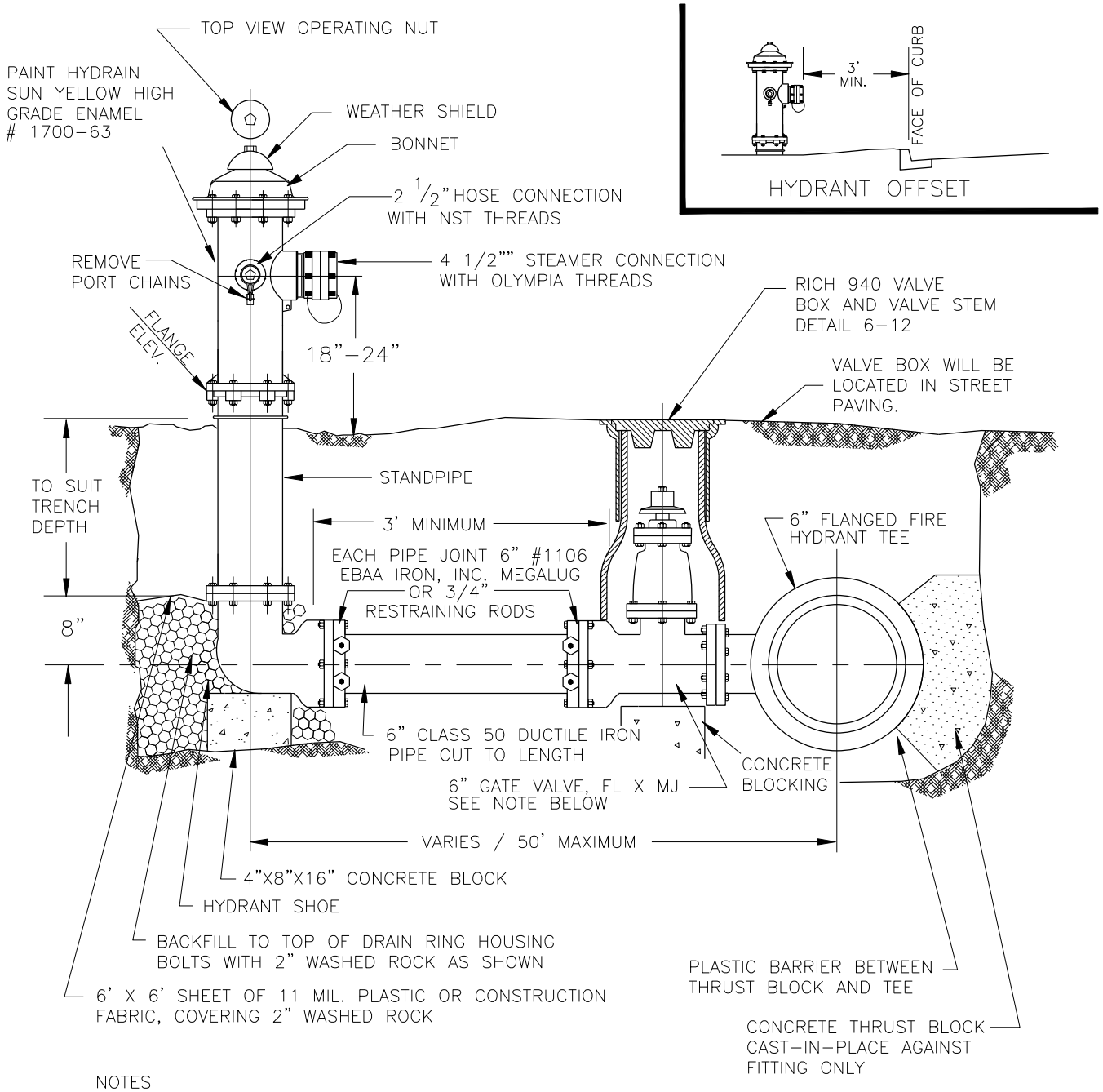


GENERAL NOTES:

1. FOR VALVE BOX REQUIREMENTS SEE DETAIL 6-12.
2. FILL THE AREA OUTSIDE OF THE BLOW-OFF RISER STAND PIPE WITH PEA GRAVEL.
3. ALL 2" PIPING AND FITTINGS SHALL BE DOMESTIC BRASS.
4. NO SERVICE CONNECTIONS SHALL BE ALLOWED BETWEEN THE ON SIZE VALVE AND THE BLOW-OFF VALVE.

THURSTON PUD STANDARD DETAIL

FIGURE 8 - BLOW-OFF ASSEMBLY #2



NOTES

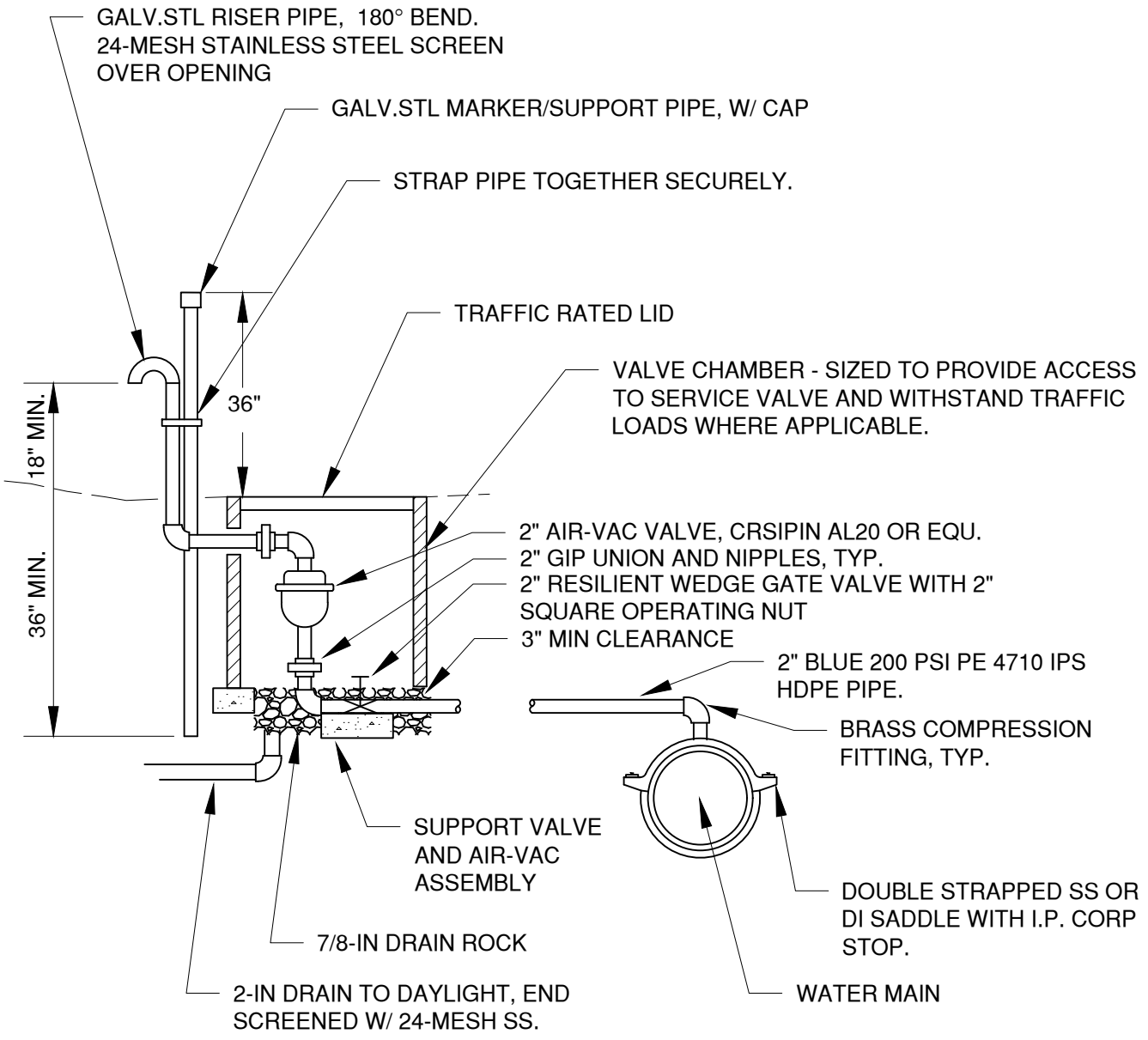
1. HYDRANTS SHALL BE LOCATED WITH A MINIMUM THREE FOOT RADIUS UNOBSTRUCTED WORKING AREA PROVIDED AROUND ALL HYDRANTS, AND IN NO CASE SHALL BE LOCATED IN SIDEWALK.

2. HYDRANT SHALL BE DRESSER M & H RELIANT STYLE 929, MUELLER CENTURION, CLOW MEDALLION OR AVK.

3. GATE VALVES SHALL BE RESILIENT WEDGE NRS WITH O-RING SEALS. VALVE ENDS SHALL BE MECHANICAL JOINT BY ANSI FLANGES. VALVES SHALL CONFORM TO AWWA 509-80. VALVES SHALL BE MUELLER M & H. KENNEDY. CLOW.

THURSTON PUD STANDARD DETAIL

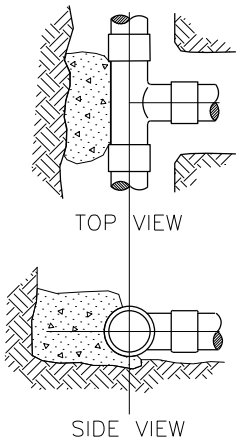
FIGURE 9 - FIRE HYDRANT INSTALLATION



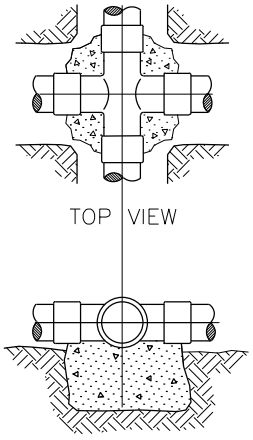
ACTUAL PIPE SIZES ARE NOT DEPENDENT ON VALVE SIZE.
BOTTOM OF VAULT SHALL BE FILLED WITH MIN. 4" OF 7/8" DRAIN ROCK.
VAULT SHALL BE DRAINED TO DAYLIGHT IF FAULT FLOODING IS A CONCERN. DRAINS SHALL BE DAY-LIGHTED AND SCREENED.
OPTIONALLY, GATE VALVE MAY BE LOCATED OUTSIDE OF VAULT, INSTALLED PER GATE VALVE DETAIL DRAWING.

THURSTON PUD STANDARD DETAIL

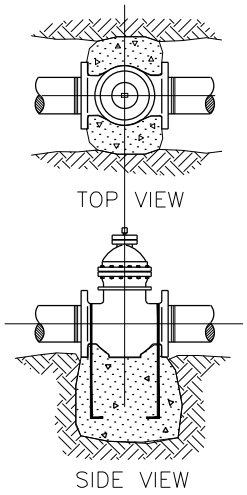
FIGURE 10 - AIR VACUUM RELEASE ASSEMBLY



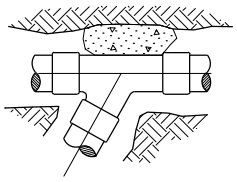
TEE



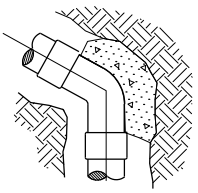
CROSS



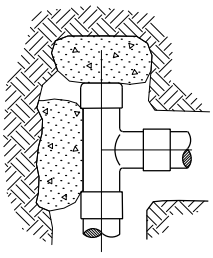
GATE VALVE



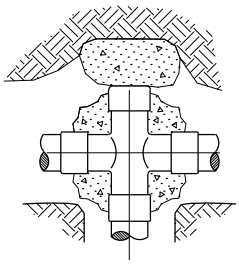
WYE



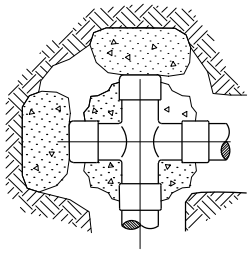
HORIZ. BEND



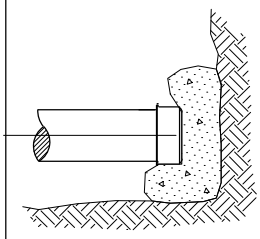
TEE WITH PLUG



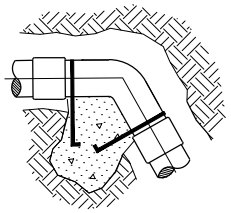
CROSS WITH PLUG



CROSS WITH PLUGS



PLUG OR CAP



45° – 90° VERTICAL BEND

NOTES:

1. CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH.
2. PLASTIC BARRIER SHALL BE PLACED BE– TWEEN ALL THRUST BLOCKS & FITTINGS.
3. ANCHOR REBAR SHALL BE #5 ON 12" DIA. AND LESS WITH 30" IMBEDMENT, #5 ON 16"–24" DIAMETER WITH 36" IMBEDMENT.
4. PLUGS TO BE MINIMUM OF 5' FROM TEE, WYE CROSS ON VALVE.

THURSTON PUD STANDARD DETAIL

FIGURE 11 - THRUST BLOCKING

THRUST LOADS

THRUST AT FITTINGS IN POUNDS AT 200 POUNDS PER SQUARE INCH OF WATER PRESSURE

PIPE DIAMETER	90° BEND	45° BEND	22–1/2° BEND	11–1/4° BEND	DEAD END OR TEE
4"	3,600	2,000	1,000	500	2,600
6"	8,000	4,400	2,300	1,200	5,700
8"	14,300	7,700	4,000	2,000	10,100
10"	22,300	12,100	6,200	3,100	15,800
12"	32,000	17,400	8,900	4,500	22,700
14"	43,600	23,600	12,100	6,100	30,800
16"	57,000	30,800	15,700	7,900	40,300

NOTES:

1. BLOCKING SHALL BE CEMENT CONCRETE CLASS "B" POURED IN PLACE AGAINST UNDISTURBED EARTH. FITTING SHALL BE ISOLATED FROM CONCRETE THRUST BLOCK WITH PLASTIC OR SIMILAR MATERIAL.

2. TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (S.F.):

   EXAMPLE : 12" – 90° BEND IN SAND AND GRAVEL
   32,000 LBS ÷ 3000 LB/S.F. = 10.7 S.F. OF AREA

3. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZE, PRESSURES AND SOIL CONDITIONS.

4. BLOCKING SHALL BE ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

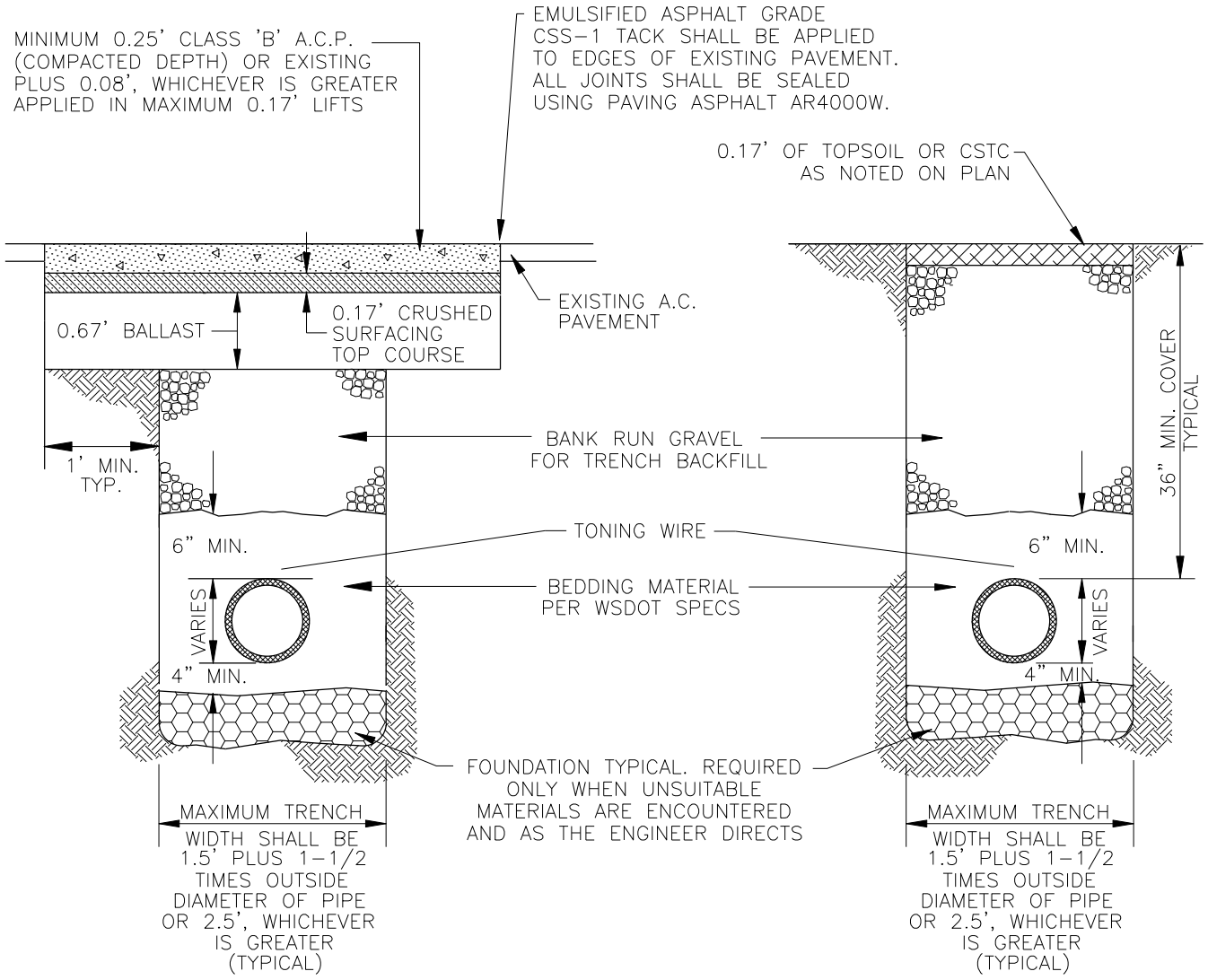
SAFE SOIL BEARING LOADS

FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS 2 FEET

SOIL	POUNDS PER SQUARE FOOT
MUCK, PEAT	0
SOFT CLAY	1,000
SAND	2,000
SAND & GRAVEL	3,000
SAND & GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

THURSTON PUD STANDARD DETAIL

FIGURE 12 - THRUST BLOCKING ALLOWABLE LOADS

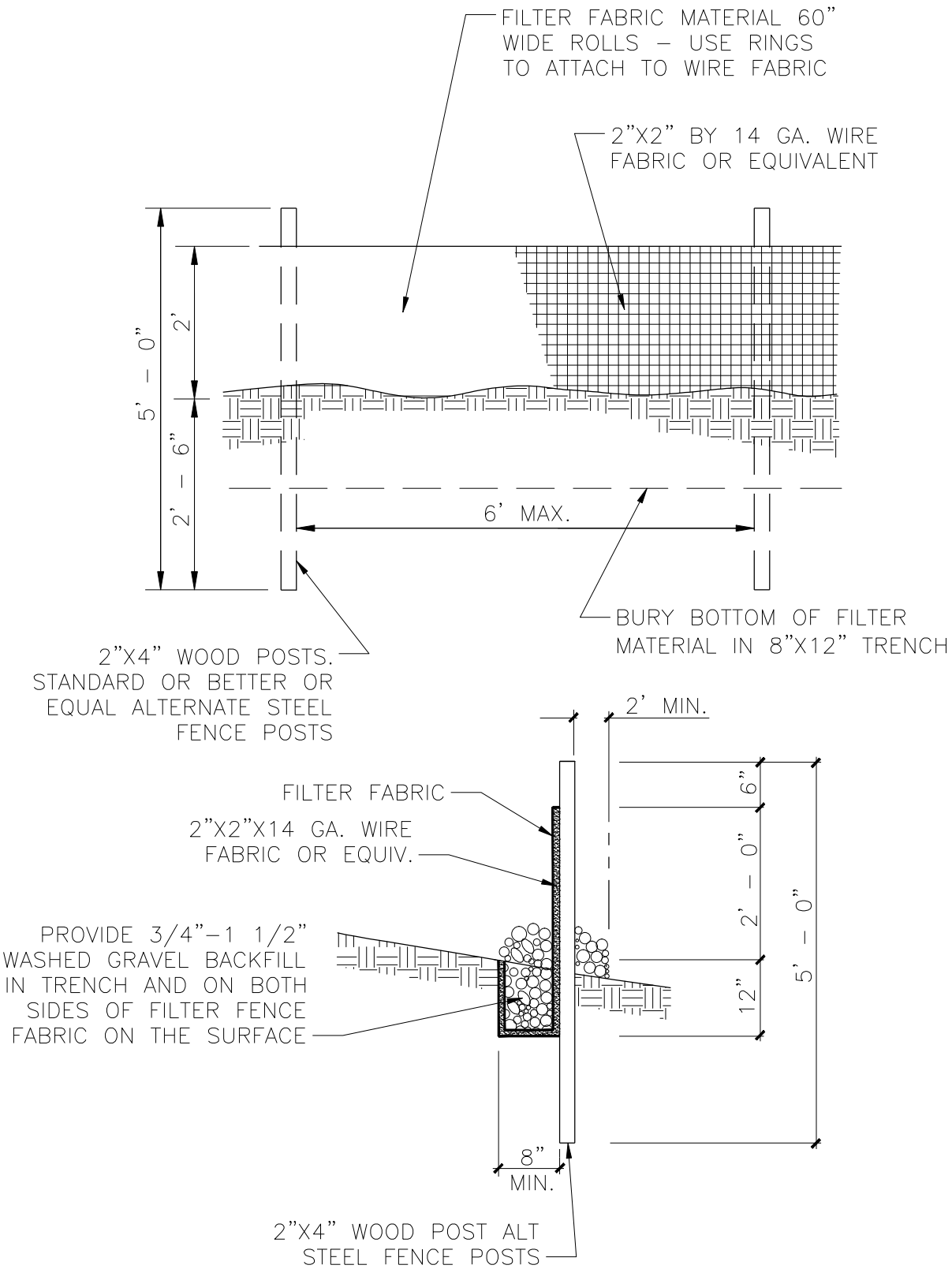


NOTES:

1. ALL MATERIALS EXCEPT A.C.P. AND BEDDING MATERIAL SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY.
2. BEDDING SHALL CONFORM TO SECTION 9-03.15 OR 9-03.16 OF THE STD. SPECS.
3. COMPACTION: BEDDING SHALL BE COMPACTED TO 95% MAX. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 85% IN UNPAVED AREA AND 95% IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.
4. ALL MATERIALS WORKMANSHIP AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION LATEST EDITION THEREOF.
5. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS WILL BE ALLOWED TO SUPPORT PIPE TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

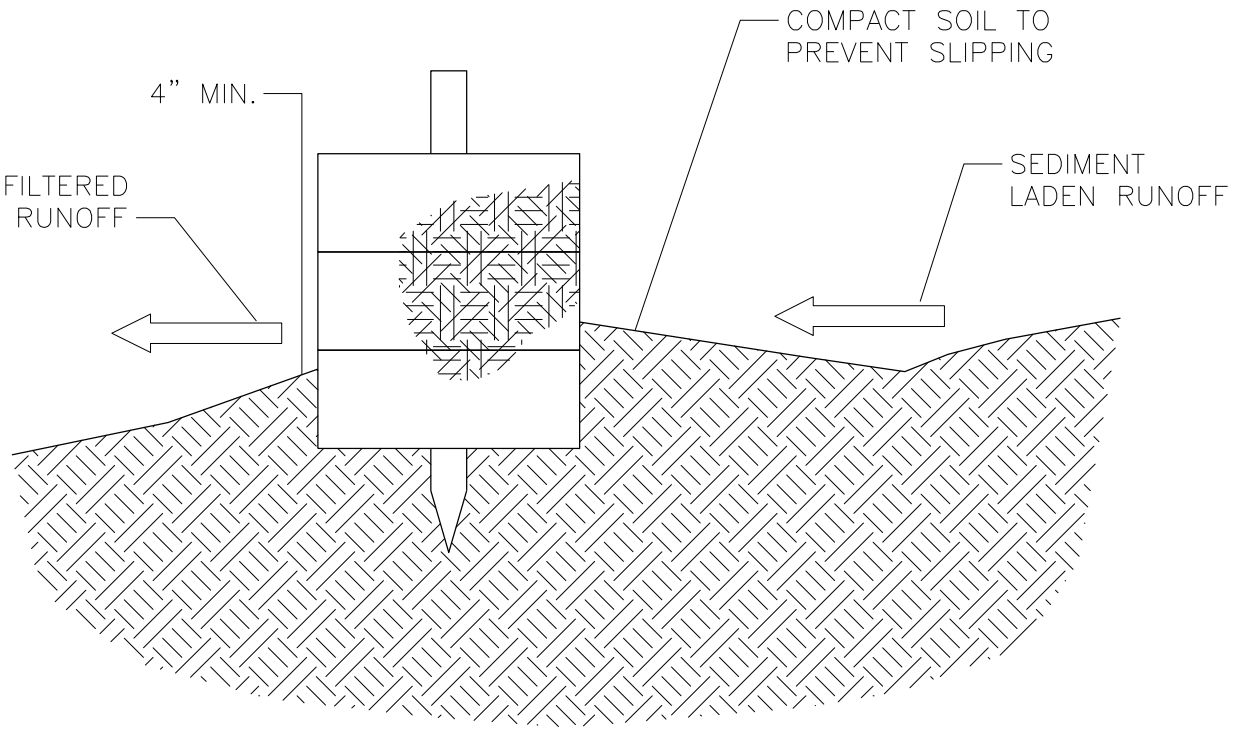
THURSTON PUD STANDARD DETAIL

FIGURE 13 - TRENCH AND PAVEMENT RESTORATION



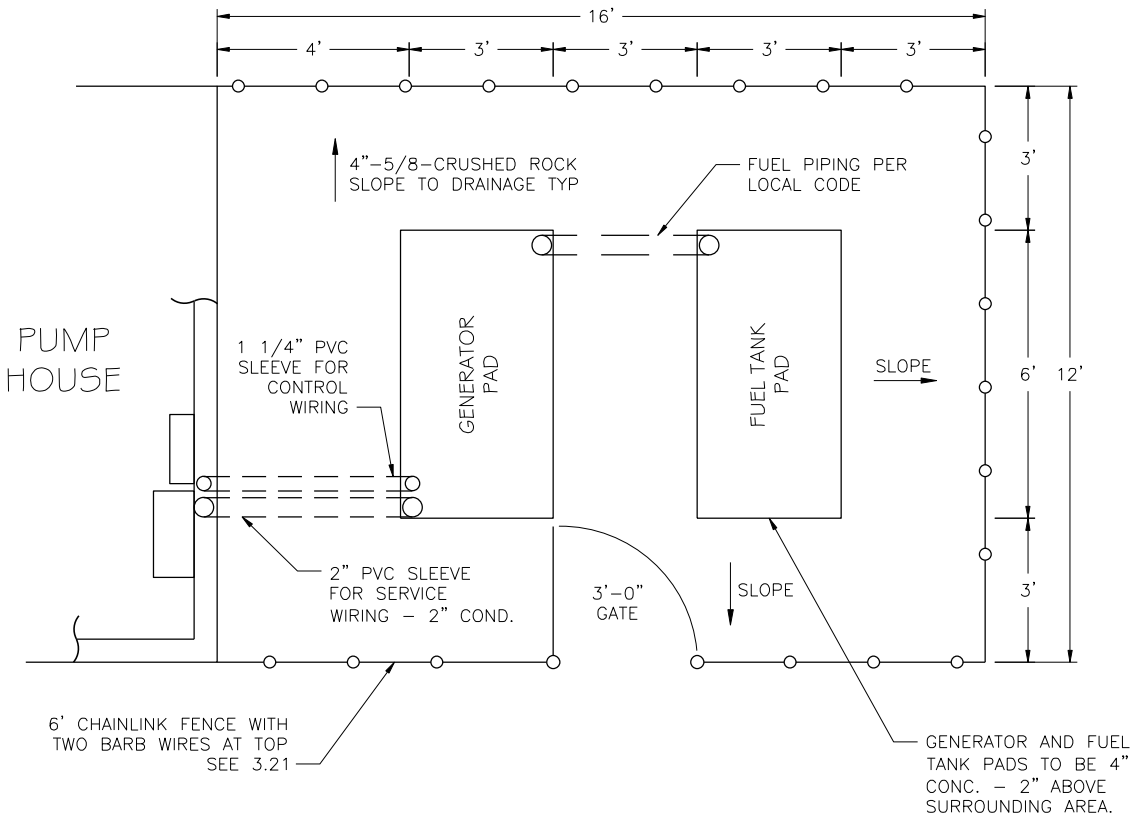
THURSTON PUD STANDARD DETAIL

FIGURE 14 - FILTER FABRIC FENCE



THURSTON PUD STANDARD DETAIL

FIGURE 15 - STRAW BALE BARRIER

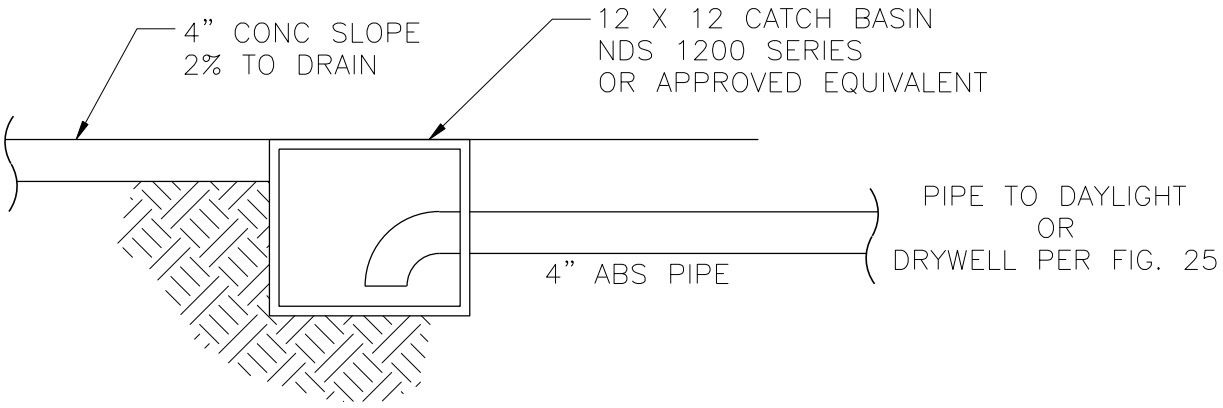


SCALE: 1/4" = 1'

PVC SLEEVES NOT TO SCALE

THURSTON PUD STANDARD DETAIL

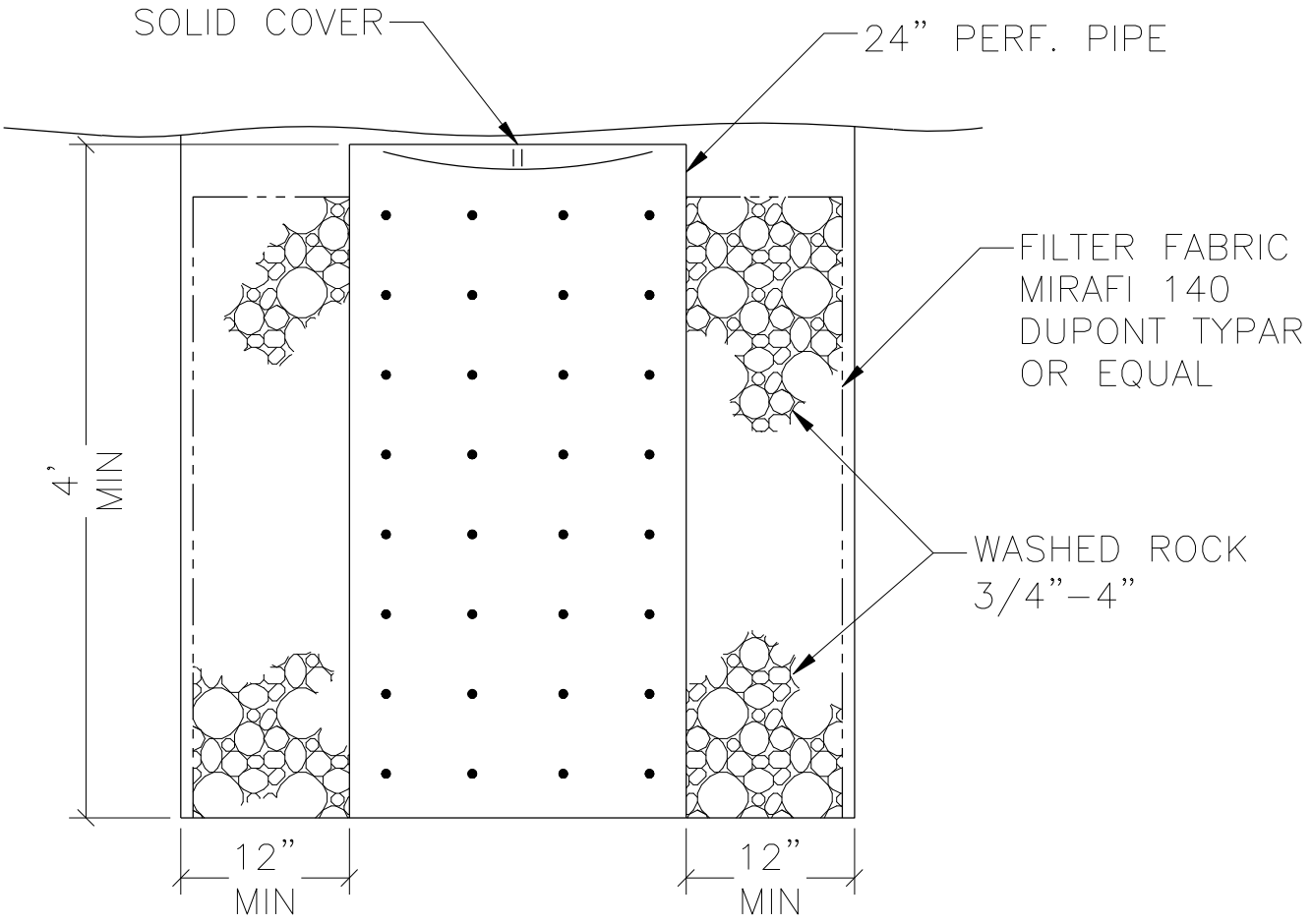
FIGURE 16 - TYPICAL GENERATOR / FUEL TANK INSTALLATION



NO SCALE

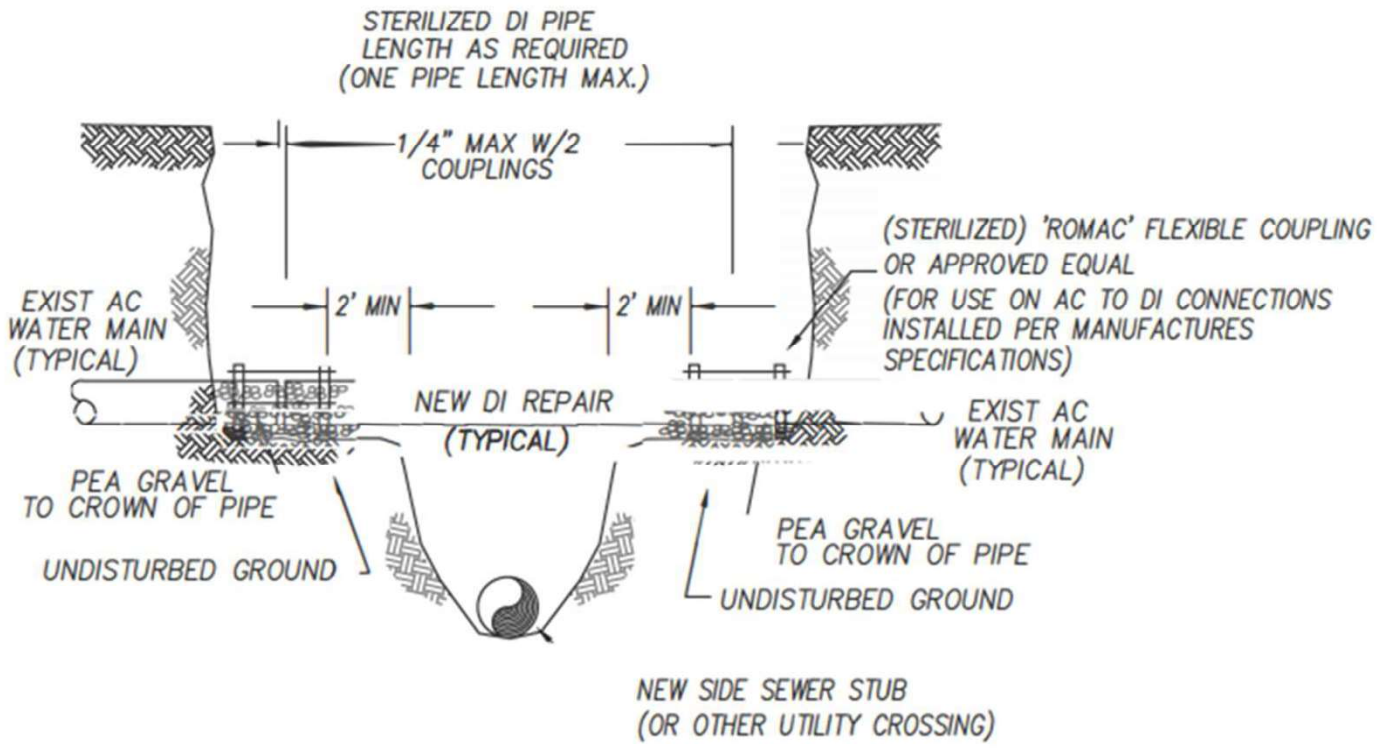
THURSTON PUD STANDARD DETAIL

FIGURE 17 - FLOOR DRAINS



THURSTON PUD STANDARD DETAIL

FIGURE 18 - DRY WELL



NOTES:

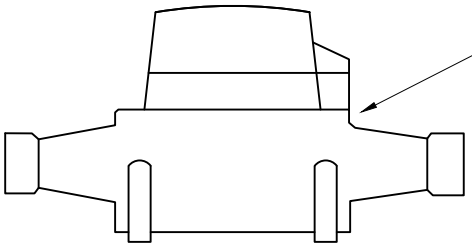
1. ALL EXCAVATED, EXPOSED, OR UNDERMINED AC OR PVC MAINS SHALL BE BED IN PEA GRAVEL OR CDF TO THE CROWN OF THE PIPE (MINIMUM)
2. (STERILIZED) 'ROMAC' FLEXIBLE COUPLING (OR OR APPROVED EQUAL FOR AC TO DI CONNECTIONS)
3. COUPLINGS SHALL BE LOCATED ON UNDISTURBED GROUND A MINIMUM OF 2–FEET PAST THE LIMITS OF THE UNDERMINING UTILITY TRENCH
4. STERILIZED DI PIPE – LENGTH AS NEEDED (ONE PIPE LENGTH MAX.) ALL D.I. PIPE SHALL REST ON FIRM BEARING EARTH
5. CONTRACTOR IS REQUIRED TO MAINTAIN WORKERS EXPOSURE TO ASBESTOS MATERIAL AT OR BELOW THE LIMIT PRESCRIBED IN WAC 296–62–07705

   ASBESTOS CEMENT PIPE SHALL BE CUT WITH A HAND OPERATED CARBIDE BLADE CUTTER WITH CONTROLLED FLOWING WATER

   CONTAMINATED CLOTHING SHALL BE LEFT AND BURIED IN THE TRENCH OR TRANSPORTED IN SEALED IMPERMEABLE BAGS LABLED IN ACCORDANCE WITH WAC 296–62–07721. AC PIPE SHALL BE LEFT AND BURIED IN THE TRENCH

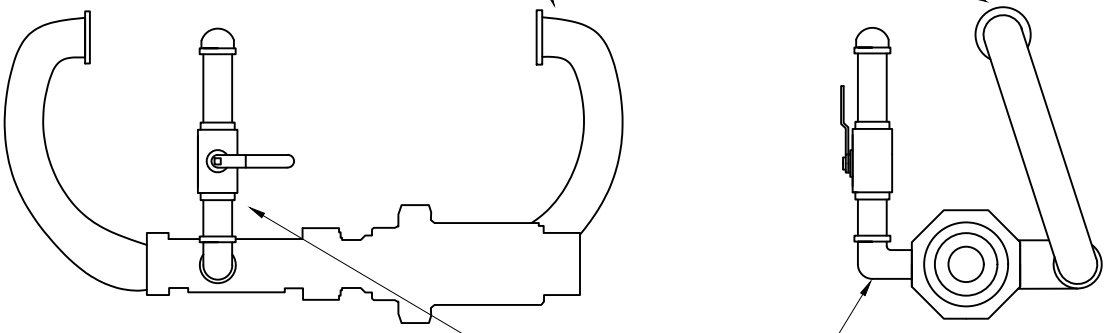
THURSTON PUD STANDARD DETAIL

FIGURE 19 ASBESTOS CEMENT WATER LINE REPAIR



CUSTOMER SERVICE METER

A. Y. MCDONALD MODEL 710-303 3/4-IN X 3/4-IN METER RESETTER WITH METER NUTS AND DOUBLE CHECK VALVE. BRASS COMPONENTS IN CONTACT WITH WATER MUST BE ASTM B584 CERTIFIED LEAD FREE.



SAMPLE ASSEMBLY TO BE 1/2-IN NPT STAINLESS STEEL. STREET 90, BALL VALVE, 3-IN NIPPLES, AND CAP. CAP TO BE HAND TIGHT, ALL OTHER JOINTS TO BE LEAK TIGHT WITH TEFLON TAPE.

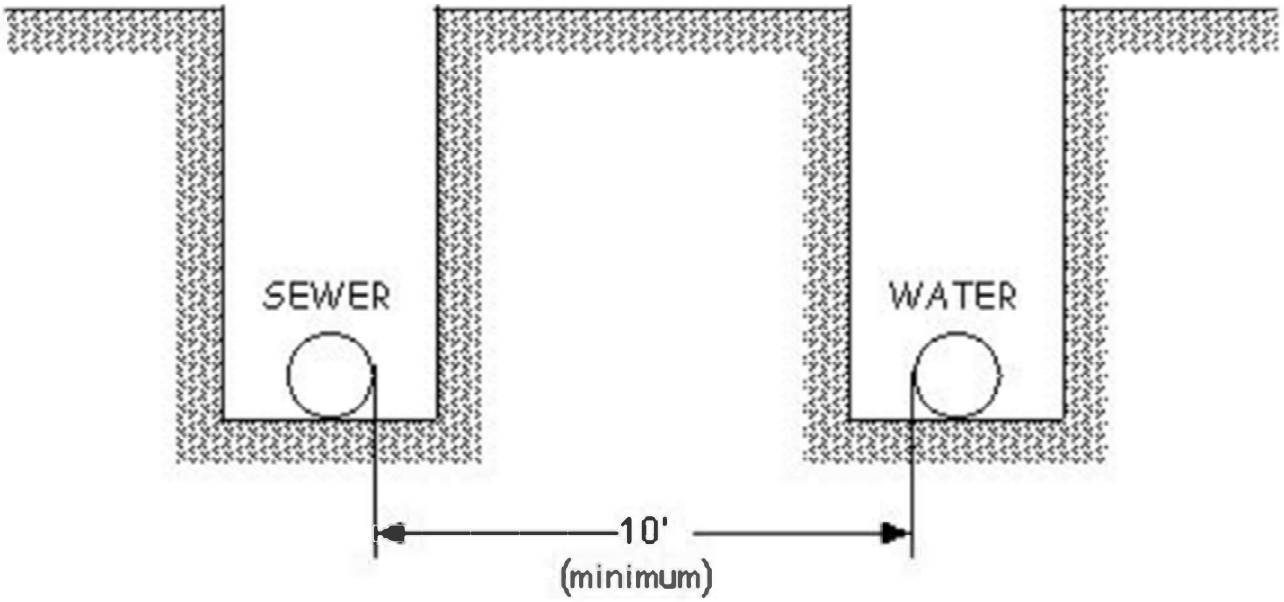
INSTALL AT EXISTING CUSTOMER METER OR IN PUD APPROVED METER BOX PER THURSTON PUD STANDARD DETAIL FIGURES 3 OR 4.

ALL PLUMBING COMPONENTS TO BE NSF 61 CERTIFIED.

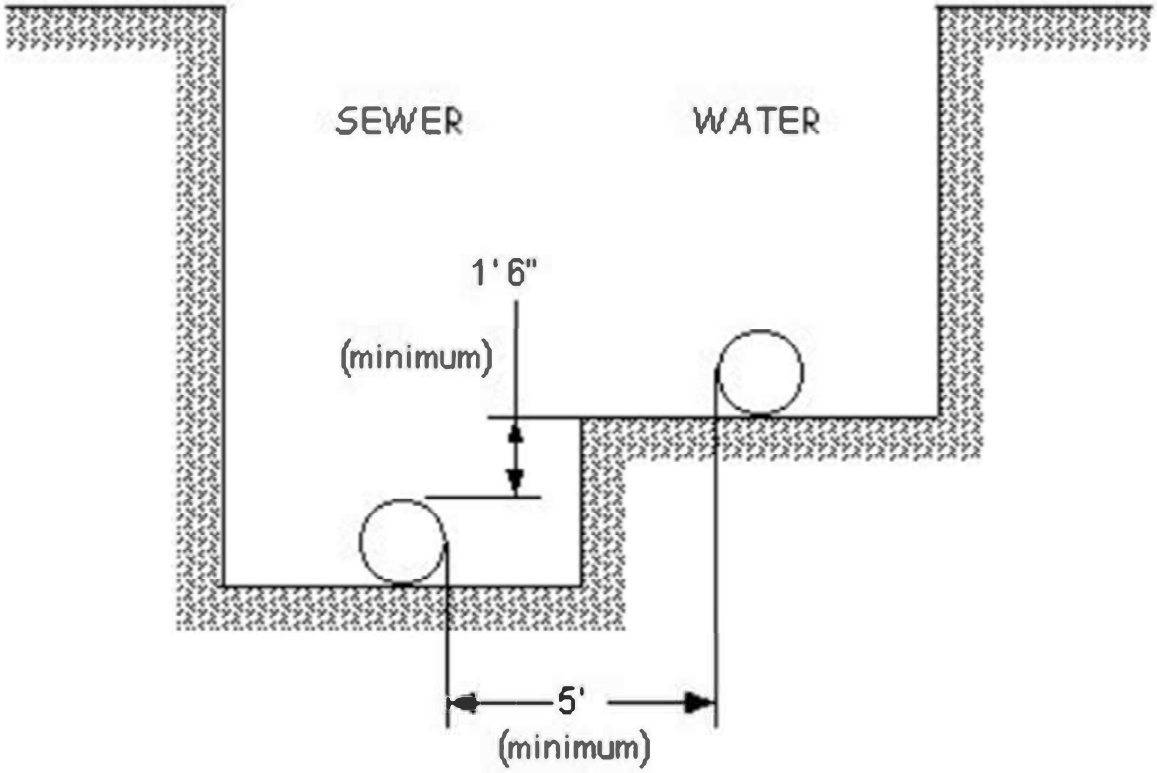
THURSTON PUD STANDARD DETAIL

FIGURE 20 - SAMPLE STATION

NORMAL CONDITIONS



UNUSUAL CONDITIONS

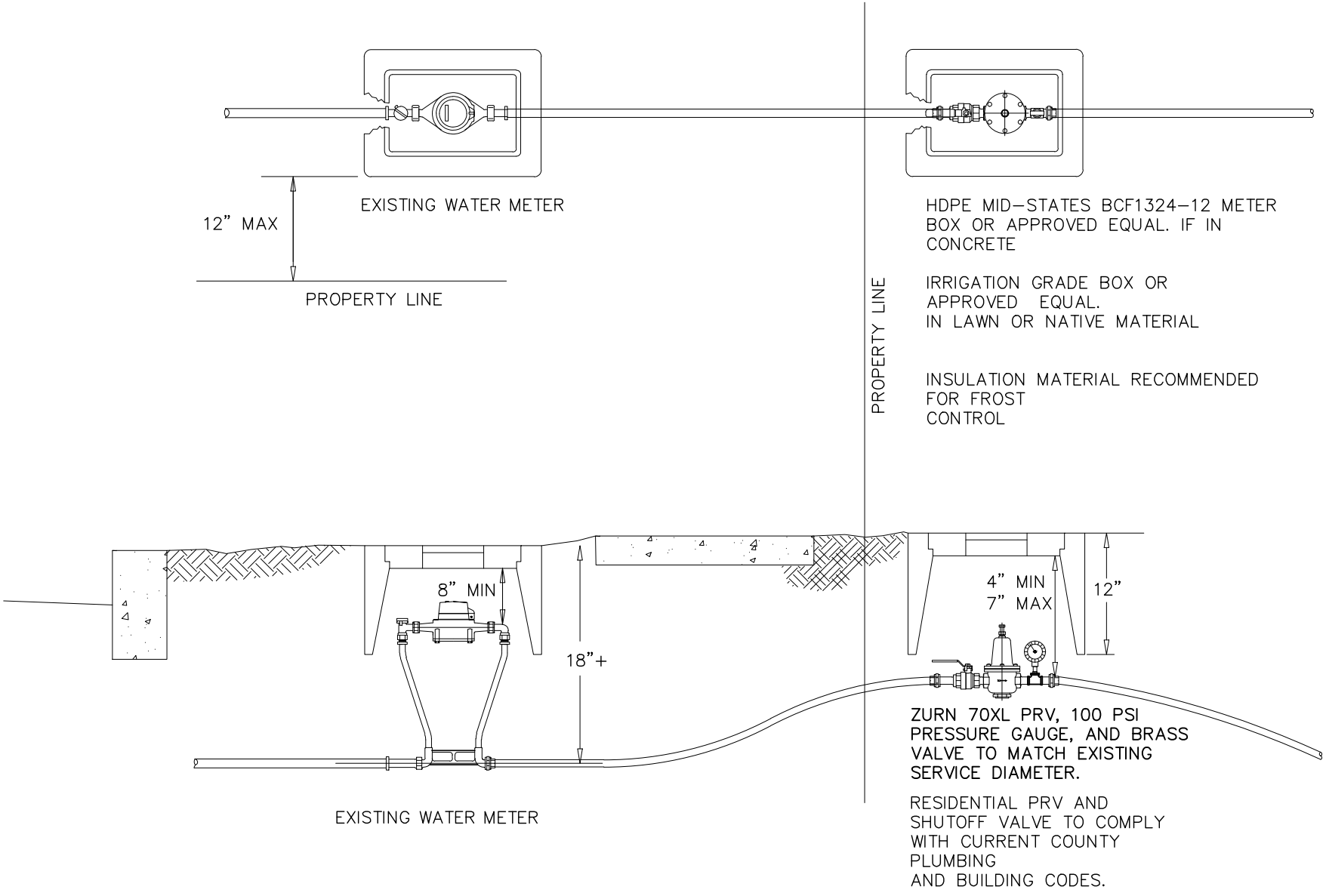


THURSTON PUD STANDARD DETAIL

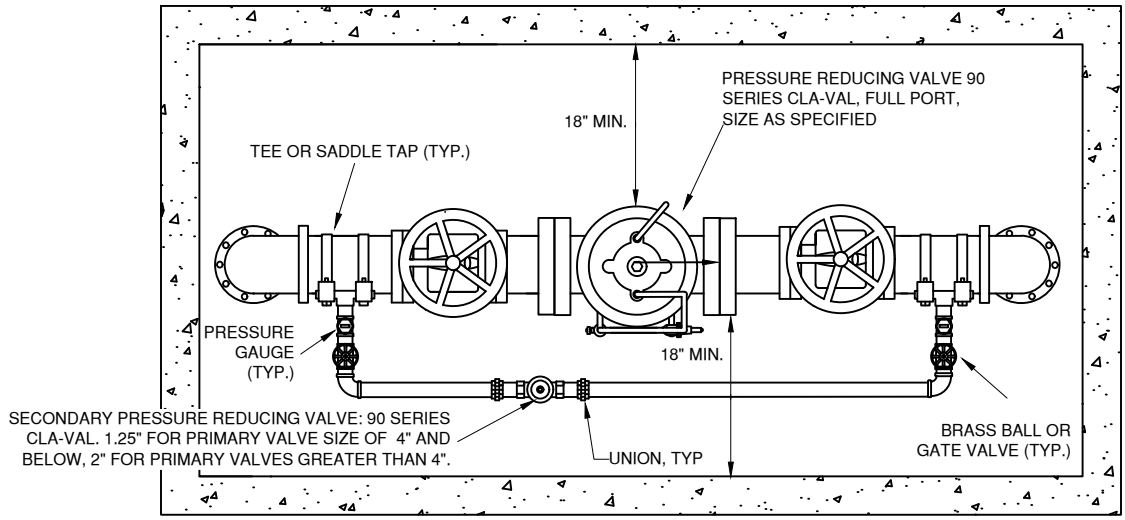
FIGURE 21 – SEPARATION OF WATER AND SEWER LINES

FIGURE 22 - RESIDENTIAL PRV ASSEMBLY

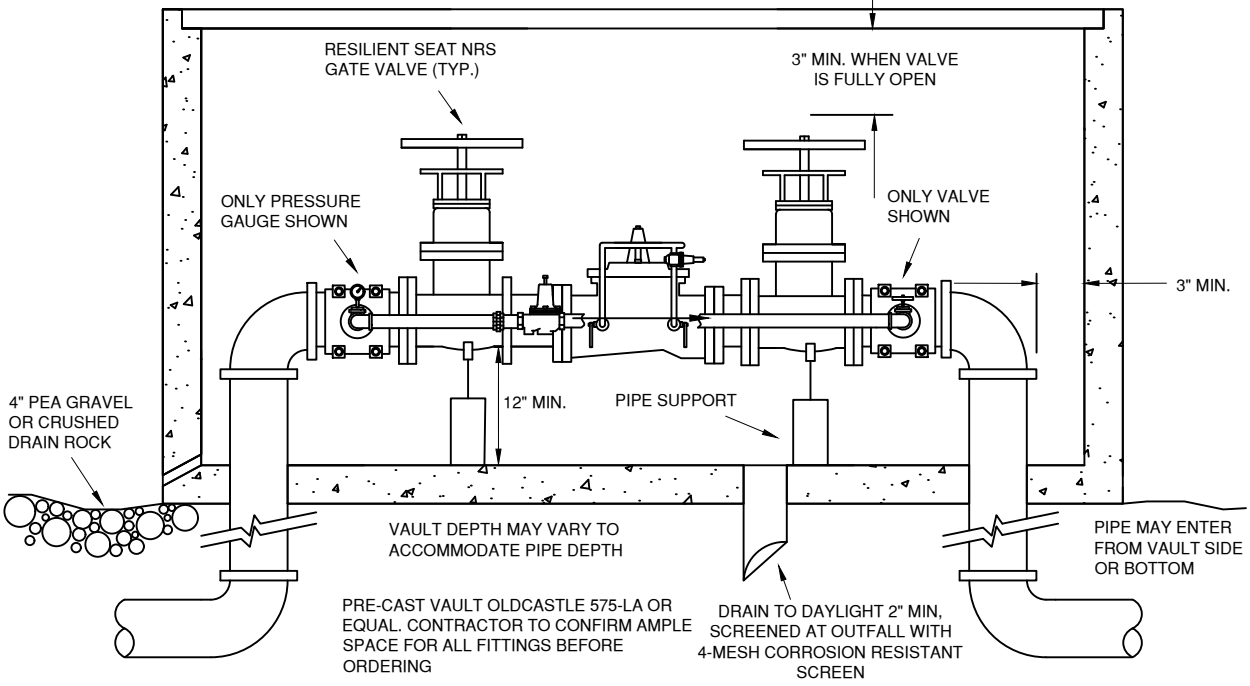
THURSTON PUD STANDARD DETAIL



TOP VIEW



SIDE VIEW



NOTES:
- PRIMARY PRV SHALL BE CLA-VAL 90-01, DUCTILE IRON BODY, BRONZE TRIM, EPOXY LINED AND COATED, 150# FLANGED, W/X101 POSITION INDICATOR AND 20-105# SPRING RANGE.
- SECONDARY PRV SHALL BE CLA-VAL 90-01, DUCTILE IRON BODY, BRONZE TRIM, EPOXY LINED AND COATED, 150# THREAD, W/X101 POSITION INDICATOR AND 20-105# SPRING RANGE.
- ALL PIPING 3" AND ABOVE SHALL BE DUCTILE IRON PIPE. ALL PIPING LESS THAN 3" SHALL BE BRASS.
-ECENTRIC REDUCERS SHALL BE EMPLOYED AS NECESSARY TO ACCOMMODATE MAINLINE PIPE SIZE.
- INSTALLATION SHALL BE DISINFECTED, FLUSHED, AND PRESSURE TESTED PRIOR TO ACTIVATION.
- ALL PIPE VALVE AND FITTING JOINTS, FROM THE SUPPLY MAIN, SHALL BE FLANGED AND RESTRAINED.
- GROUT PIPE ENTRANCE AND EXIT, IN VAULT, WITH WATERTIGHT GROUT.
- ALL VAULTS SHALL BE PRE-APPROVED PRIOR TO INSTALLATION AND NOT REQUIRE CONFINED SPACE ENTRY.
- VAULTS SHALL BE INSTALLED WITH SYSTEM PROPERTY, EASEMENT, OR RIGHT-OF-WAY
- VAULTS SHALL MEET APPLICABLE COUNTY CODES
- ALL COMPONENTS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS
- ALL COMPONENTS SHALL BE INSTALLED USING RESTRAINED JOINTS (FLANGED SHOWN)

THURSTON PUD STANDARD DETAIL

FIGURE 23 - 3" TO 8" PRESSURE REDUCING STATION

Appendix

STANDARD SYMBOLS FOR AWRI SYSTEM PLANS

M — STANDARD METER BOX WITH STANDARD METER

SHUT–OFF VALVE

BLOW OFF ASSY

H — HYDRANT

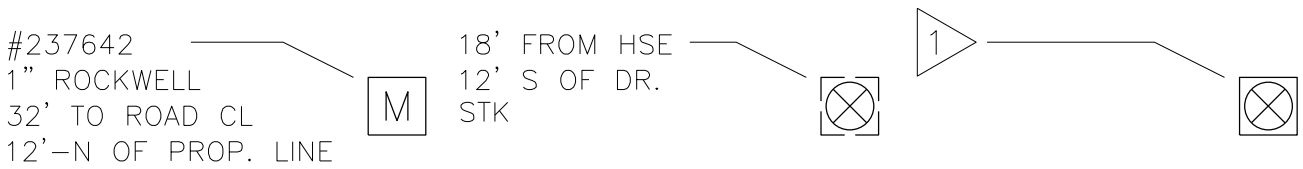
STANDARD METER BOX WITH SHUT–OFF VALVE (NO METER)

SERVICE SHUT–OFF VALVE WITH NO METER OR METER BOX

PH — PUMP HOUSE

M — AIR VACUUM RELEASE

WHERE POSSIBLE DIMENSIONS LOCATING METERS RELATIVE TO ROAD CENTER LINE OR PROPERTY LINES ARE SHOWN ON SYSTEM PLANS.
EXAMPLE:



EXAMPLE 1

SERVICE IS METERED
METER IS 32' FROM THE CENTER LINE OF THE ROAD AND IS 12' FROM THE NORTH PROPERTY LINE OF PROPERTY BEING SERVED.
METER NUMBER IS 237642

EXAMPLE 2

SERVICE IS NOT METERED & HAS SHUT–OFF VALVE ONLY LOCATED 18' FROM THE HOUSE SERVED AND IS 12' SOUTH OF THE EDGE OF THE DRIVEWAY METER LOCATION IS STAKED

EXAMPLE 3

SERVICE HAS A METER BOX BUT IS NOT METERED

NOTE 1 GIVES A DETAILED LOCATION OF THE SHUT–OFF VALVE

NOTE: WHENEVER POSSIBLE METER NUMBERS SHOULD BE INDICATED ON WATER SERVICE PLAN INDICATING SIZE AND TYPE OF METER.
WHERE APPROPRIATE METER LOCATIONS ARE MARKED BY A 2X2 STAKE PAINTED BLUE.

THURSTON PUD STANDARD DETAIL

STANDARD SYMBOLS FOR AWRI SYSTEM PLANS

Appendix B
Rates and Fees

Appendix B
Rates and Fees

A1 Introduction

This Section contains the current Rate Schedules and Fees charged by the District. You can find the District's current Rates, Fees, and Charges on our website at www.thurstonpud.org/our-rates.htm.

INDEX OF RATES AND FEES SCHEDULES

2023 PROPOSED RATES, FEES AND CHARGES

Effective January 1, 2023

Residential Base Rates	Base Rate (per month)				Consumption Charges (per hundred cubic feet)				
	Meter Size	¾"	1"	Flat Rate	0 - 500	501 - 2,100	2,101 - 3,600	3,601 - 7,000	7,000+
	Monthly Rate	$45.20	$75.35	$80.00	$3.25	$5.05	$6.05	$7.10	$7.95

Other Base Rates	Base Rate (per month)							Consumption Charges (per hundred cubic feet)	
	Meter Size	¾"	1"	1 ½"	2"	3"	Flat Rate	Nov-Jun	Jul -Oct
	Commercial and Multifamily	$51.98	$86.65	$173.35	$277.35	$520.00	$55.60	$5.05	$7.10
	Irrigation	$51.98	$86.65	$173.35	$277.35	$520.00		$7.10	$7.10
	Tanglewilde Parks & Recreation	$53.75						$1.65	$2.40

Service Charges	
New Account Service Charge	$35.00
New Account Non-Related Tenant	$5.00 each tenant
Late Payment Fee	$5.00
Return Check Charge	$30.00
General Facility Charge	$5,000.00
Non-compliant Customer First	$50.00
Non-compliant Customer Second	$110.00
Local Taxes & Fees	
Street Light Fee (Conifer, Cooperfield, Quail Run)	$3.15 per month
Scattercreek Ranch Irrigation	$1.25 per cuft
City of Gig Harbor B&O Tax – Quail Run Only	5%
Service Fees	
Water Availability Letter - Residential	$55.00
Water Availability Letter - Non-Residential	$250.00
Water Availability Letter - Accessory Dwelling Unit	$250.00
Lender Letter	$55.00
Hydrant Use Fee	Apply 1 1/2 Metered Rate
Meter Test	$100.00
Cross Connection Survey	$45.00
Back Flow Test	Time and materials
Reconnection Fees	
Business Hours	$50.00
After Hours	$135.00
Holiday/Weekend	$210.00
Meter Tampering Charge	$200.00

Capital Improvement Surcharges (Monthly Per ERU*)	
¾" Meter	$11.00
1" Meter	$18.35
1 ½" Meter	$36.65
2" Meter	$58.65
3" Meter	$110.00
Webster Hill DWSRF	$14.94
Glen Alder DWSRF	$85.78
Country Club Estates DWSRF	$48.35
Country Club Estates Loan	$25.49
Refundable Deposits	
Green Report	$0.00
Yellow Report	$75.00, or highest bill in the last 12 months, whichever is highest
Red Report	$150.00 or 2 times the highest bill in the last 12 months, whichever is highest
Temporary Service Deposit	$1,500.00
Service Connection Charges	
Residential Service Line Performed by PUD Staff	$1,550.00
Residential Service Line Performed by Contract	Costs at 20% markup and time to install
Commercial Service Line	Materials at 20% markup and time to install
¾" Meter Install	$300.00
1" Meter Install	$400.00
1 ½" Meter Install	$650.00
2" Meter Install	$900.00
Fire Meter Install	$1,562.00

*Equivalent Residential Unit (ERU)

Table B-2
ERU Determination

Customer Class	ERU
Single-Family Residential Dwelling Unit	1.000 ERU
Multi-Family Residential Dwelling Unit	0.778 ERU
Commercial/Industrial	
¾ - inch meter	1.000 ERU
1 – inch meter	2.500 ERU
1 ½ - inch meter	5.000 ERU
2 – inch meter	8.000 ERU
4 – inch meter	1.000 ERU*
6 – inch meter	1.000 ERU*
8 – inch meter	1.000 ERU*

* Per 0.550 gallons per minute (gpm) peak day demand

Footnotes:

(1) Estimated demand to be determined by the District, based on comparable facilities and information provided by the Applicant or Customer.

PUBLIC UTILITY DISTRICT NO. 1 OF THURSTON COUNTY
Employee and Equipment Rate Schedule
Effective January 1, 2023

	2023
Equipment & Material Fees	
Freightliner Vactor HXX - hourly with operator	$ 192.50
Well Pump Truck - hourly with operator	$ 165.00
Mini Excavator - hourly with operator	$ 132.00
All materials will be charged at cost plus 10%.	
Employee Rates	
Customer Service/Office Support- hourly	$ 64.00
Administrative Assistant - hourly	$ 71.00
Accounting Assistant - hourly	$ 64.00
Accountant - hourly	$ 76.00
Payroll Specialist - hourly	$ 73.00
Administrative Services Coordinator - hourly	$ 73.00
Laborer - hourly	$ 61.00
Meter Reader - hourly	$ 64.00
Field Technician I - hourly	$ 64.00
Field Technician II - hourly	$ 74.00
Field Technician III - hourly	$ 85.00
Program Management Specialist - hourly	$ 86.00
Engineer - hourly	$ 119.00
Department Manager *All Positions - hourly	$ 95.00
Director of *All Positions - hourly	$ 119.00
Assistant General Manager - hourly	$ 123.00
General Manager - hourly	$ 128.00

Overtime is charged at 1 1/2 times the hourly rate, holidays are charged at 2 times the hourly rate.

Table B-4
Miscellaneous Fees

Description	Amount
Chlorine Adjustment	Credit of Current Base Rate

Table B-5
Engineering Fees

Description	Amount
Plan Review Fee – Two (2) Reviews	
Non-Residential	Equipment and Employee Rates
Extension Agreement Fee	$225.00
Pre-Construction Conference	Equipment and Employee Rates
Construction Inspection	Equipment and Employee Rates
LUD Feasibility Study	Equipment and Employee Rates
Non-standard Services	
PUD Staff	Equipment and Employee Rates
Outside Engineering Staff	Engineer's Cost plus 20%
Satellite System Preliminary Feasibility Study	$200.00
Satellite System Full Feasibility Study	Equipment and Employee Rates
Water Availability Letter	
Residential	$55.00
Non-residential or Multi-Residential	$~~200.00~~250.00
Accessory Dwelling Unit (ADU)	$250.00
Fire Flow Model	Engineer's Cost plus 20%
Fire Flow Test	Engineer's Cost plus 20%
Developer or Contractor letter of credit processing fee	$50.00
Easement Preparation	Equipment and Employee Rates

Table B-6
Standard Penalties

Description	Amount
Unauthorized Taking of Water	$200.00*
Failure to Appear at Dispute Hearing	$200.00
Late Request for a Continuance of Dispute Hearing	$ 50.00
Investigation and Service/Commodity Charge	$200.00**
General Damages	***
Month Fee to Non-compliant Customer	
First instance of no response	$ 50.00†
Repeated instance of refusal	$150.00†

* Plus estimated use of water charges
** Plus damages
*** Charged at Equipment and Employee Rates

† Fees charged will be in addition to regular charges for monthly water service and will be non-refundable

Appendix C
Response Plans


INCIDENT
RESPONSE PLAN
CYBER SECURITY
BREACH

TABLE OF CONTENTS

INTRODUCTION

Purpose

This document describes the plan for response to information security incidents at Thurston PUD. It defines the roles and responsibilities of participants, characterization of incidents, relationships to other policies and procedures, and reporting requirements.

The intent of the Cybersecurity Incident Response Plan (IRP) is to

- Implement processes that District personnel must follow when responding to a Security Incident.
- Provide the District's personnel with a specific and systematic approach for dealing with Security Incidents.
- Establish whether a Security Incident has occurred, what data has been accessed in appropriately, who needs to be contacted , and how to recover. The goals of this IRP are:
    - Confirm or dispel the Security Incident
    - Determine the level of threat from a Security Incident.
    - Determine the appropriate response to the Security Incident, including the level of communication to all stakeholders.
    - Direct actions on the containment, eradication, and recovery from the Security Incident.
    - Promote the accumulation of accurate information.
    - Establish controls for proper retrieval and handling of evidence.
    - Minimize disruptions to business functions and network operations.
    - Allow for legal or civil recriminations against perpetrators.
    - Provide accurate reports and useful recommendations that reduce the likelihood of the Security Incident from reoccurring.

1. EXECUTIVE SUMMARY

2. SIX-STEP INCIDENT RESPONSE PLAN

Preparation

Preparation includes those activities that enable the District to respond to a cyber event that include: policies, tools, procedures, effective governance and communications plans. Preparation implies that the affected groups have instituted the controls necessary to recover and continue operations after an incident is discovered. Post-disaster analysis from prior incidents should form the basis for continuous improvement of the preparation stage.

- Thurston PUD must prioritize policies to implement in case of a cyber event.
- Create and train a Cybersecurity Incident Response Team.
- The District must also review its security policy and conduct a risk assessment.
- The District must prioritize security issues, have a deep understanding of its most valuable assets and concentrate on critical security incidents.
- Develop a communications plan.
- Outline the roles, responsibilities, and procedures of the IRT.
- Recruit and training team members and ensure they have access to relevant systems.
- Ensure team members have access to relevant technologies and tools.
- Have contact information compiled of business partners and regularly validate information.
    - This should include payment card, banks, software, Thurston County IT and any other contracted partner.
- Manage third party contraction with service providers, hosting providers, and any other relevant parties to sufficiently address incident-response management.
- Collaborate, create and/or review cyber security plans with Thurston IT.
    - Host a meeting to discuss a response plan.
- Consider contracting with Forensics Firm
- Consider if Cyber Insurance is right for the District

Detection & Identification

Detection is the discovery of the event through notification through security tools or outside party about a suspected incident like a customer or Thurston County IT.

- The District must identify the types of incidents that require the IRT activation.

- Thurston PUD leadership must decide what criteria calls the IRT into action.
- Some examples include
    - Breach of personal information
    - Denial of service
    - Firewall breach
    - Virus outbreak
- Team members coordinate the appropriate response to the incident:
    - Identify and assess the incident and gather evidence.
    - Decide on the severity and type of the incident and escalate if necessary.
    - Document actions taken, addressing “who, what, where why and how.” This information may be used later as evidence if the incident reaches a court of law.

Containment & Investigation

Containment is the triage phase where the affected host or system is identified, isolated, or otherwise mitigated, and when affected parties are notified and investigative status established. This phase includes sub-procedures for seizure and evidence handling, escalation and communications.

It is critical to ensure when an incident is discovered and assessed the situation does not become more severe.

The following questions should be considered:

- What type of incident has occurred?
- Who is involved?
- What is the scope
- What is the urgency
- What is the impact thus far?
- What is the projected impact?
- What can be done to contain the incident?
- Are there other vulnerable or affected systems
- What are the effects of the incident?
- What actions have been taken
- Recommendations for proceeding
- May perform analysis to identify the root cause of the incident

Once the IRT isolates a security incident, the aim is to stop further damage. This includes:

- Short term containment—an instant response, so the threat doesn’t cause further damage. This can include taking down production servers which have been hacked or isolating a network segment that is under attack.

- System Backup—the District should back up all affected systems before they are wiped and reimaged to take a forensic image. A forensic image is a bit-for-bit copy of a hard disk, or a specific disk partition. Disk images are created after an incident to maintain the state of a disk at a specific point in time and thus provide a static 'snapshot', which you can use as evidence of the security incident, and to investigate how the system was compromised.
- Long term containment— Take measures to prevent the incident from recurring or escalating, install security patches on affected and associated systems, remove accounts and backdoors created by attackers, alter firewall rules and change the routes to null route the attacker address, etc. Work with software companies, Thurston County to conduct a lessons-learned activity that will inform security practices moving forward.

The District needs to carefully balance the need to restore operations and the need to preserve evidence as a critical part of incident response. Gathering evidence and preserving it are essential for proper identification of an incident, and for business recovery. Follow-up activities, such as personnel actions or criminal prosecution, also rely on gathering and preserving evidence.

EVIDENCE PRESERVATION

- Do not access or alter compromised system(s)—i.e., don't log on at all to the compromised system(s) and change passwords; do not log in as ROOT. To avoid losing critical data, it is highly recommended the compromised system not be used.
- Do not turn the compromised system(s) off. Instead, isolate compromised systems(s) from the network (i.e., unplug network cable).
- Preserve all evidence and logs—i.e., original evidence, security events, web, database, firewall, etc. Ensure the integrity of the evidence is not impacted by any tools used in the collection and analysis process.
- Document all actions taken, including dates and individuals involved.

Eradication

Thurston PUD subcontracts its IT services with Thurston County. In collaboration with Thurston County, and the affected software provider, Thurston PUD will work together to contain the threat and restore initial systems to their initial state, or close to it. The team will work to isolate the root cause of the attack, remove threats and malware, and identify and mitigate vulnerabilities that were exploited to stop future attacks. These steps may change the configuration of the organization. The aim is to make changes while minimizing the effect on the operations of the organization.

The District must limit the amount of data that is exposed as follows:

- Work with Thurston County IT and any software providers to fix all affected hosts, inside and outside the organization.
- Isolate the root of the attack to remove all instances of the malware software.
- Cooperate with law enforcement agencies.
- Anticipate a different type of attack.
- Allow time to make sure the network is secure and that there is no further activity from the attacker.

Recover

Ensure that affected systems are not in danger and can be restored to working condition. The purpose of this phase is to bring affected systems back into the production environment carefully, to ensure they will not lead to another incident. Ensure another incident doesn't occur by restoring systems from clean backups, replacing compromised files with clean versions, rebuilding systems from scratch, installing patches, changing passwords and reinforcing network perimeter security (boundary router access control lists, firewall rulesets, etc).

Consider how long you need to monitor the network system, and how to verify that the affected systems are functioning normally. Calculate the cost of the breach and associated damages.

Lessons Learned

The incident response team and partners should communicate to improve future processes. Complete documentation that could not be prepared during the response process. The team should identify how the incident was managed and eradicated.

See what actions were taken to recover the attacked system, the areas where the response team needs improvement, and the areas where they were effective. Reports on lessons learned provide a clear review of the entire incident and can be used in meetings, as benchmarks for comparison or as training information for new incident response team members.

3. PREPARING

Thurston PUD must prioritize policies to implement in case of a cyber event.

As the number of cyber threats facing organizations continues to grow and regulations become increasingly prescriptive, companies need more than just a generic plan that sits on the shelf. Instead, they need a thorough data breach response plan that is regularly updated and practiced, ensuring effectiveness. Whether it is a few thousand or a few million records compromised, the need for a comprehensive plan remains the same. A cybersecurity and data breach response plan has become a critical component of doing business in the modern era. No longer are the big companies being targeted, it is the small, vulnerable, less protected organizations that are being targeted.

Create and train a Cybersecurity Incident Response Team.

First and foremost, the success of any cyber security and data breach response plan begins with close involvement from the leadership team. Without engagement and leadership from management, developing, maintaining and implementing effective response plans can pose a significant challenge for organizations. However, by illustrating some of the severe implications of a data breach – such as significant financial and reputational damage – and involving the management team not just during but ahead of an incident, response teams can gain their support in fairly short order.

The District must also review its security policy and conduct a risk assessment.

The District should consider having a risk assessment conducted in order to not only avoid a security breach, but to also avoid any fines associated, reputational damage, loss of public trust and the costs of

The District must prioritize security issues, have a deep understanding of its most valuable assets and concentrate on critical security incidents.

Develop a communications plan.

There are many considerations the District must take into account in the communications process. The internal communications process helps keep employees abreast and knowledgeable and in turn they will inform customers as part of their duties. Communications should be included in legal and forensic information as well.

Communications must be mapped out in a document that details the process for developing and approving internal and external communications that includes a well-defined hierarchy.

All audiences must be covered including employees, customers, regulators and partners.

Prepare templated materials with content placeholders that cover a variety of incident types, FAQ sheets, customer letters and media write ups.

Coach leadership and IRT members to gauge their ability to manage communications, complaints and questions from other employees, regulatory agencies, partners and customers.

Outline the roles, responsibilities, and procedures of the IRT.

Recruit and training team members and ensure they have access to relevant systems.

Ensure team members have access to relevant technologies and tools.

Have contact information compiled of business partners and regularly validate information.

> **This should include payment card, banks, software, Thurston County IT and any other contracted partner.**

Manage third party contraction with service providers, hosting providers, and any other relevant parties to sufficiently address incident-response management.

Collaborate, create and/or review cyber security plans with Thurston IT.

- **Host a meeting to discuss a response plan.**

Consider contracting with Forensics Firm

Consider if Cyber Insurance is right for the District

4. INCIDENT RESPONSE TEAM

Assembling the District's IRT is one of the greatest preparation tools. The IRT should include:

- Customer Service : This team is critical to keep updated of what is occurring as they will be the front lines to answer questions and concerns from customers. They will be responsible for:
    - Developing or assisting with crafting phone scripts.
    - Logging call volume and top questions and concerns by callers.
- Executive leaders- This team is comprised of key decision makers to help ensure the response team has the needed leadership backing and resources to properly develop and test your plan.
    - Ensure decision made by the team have the support of District leadership.
    - Have a line of communication to the Board of Commissioners and other stakeholders such as regulatory agencies.
- Human Resources – HR will be instrumental in handling internal personnel issues that may arise from the cyber incident.
    - Develop internal communications to inform employees.
    - Organize internal meetings for employees to ask questions.
- Incident Response Lead/Manager – typically this would be the Information Technology liaison/lead for the District or external legal department.
    - Determine when the full response team needs to be activated in response to an incident.
    - Ensure proper implementation of the procedures outlined in the Incident Response Plan.
    - Manage and coordinate the District's overall response efforts and team, including establishing clear ownership of priority tasks.

  - Acts as an intermediary between leadership, commissioners and other IRT members to report progress and problems, as well as act as the liaison to external partners.
  - Ensure proper documentation of incident response process and procedures.

- Legal – Internal legal, privacy and compliance experts can help minimize the risk of litigation and fines in the wake of a breach.
  - Determine how to notify affected individuals, the media, law enforcement, government agencies and other third parties.
  - Establish relationships with any necessary external legal counsel before a breach occurs.
  - Be the final sign-off on all written materials related to the incident.
- Information Technology (IT) – IT and security teams will likely lead the way in catching and stopping a data breach.
  - Identify the top security risks to the organization that should incorporated into written incident response plans.
  - Train personnel in data breach response including securing the premises, safely taking infected machines offline and preserving evidence.
  - Work with a forensics firm to identify the compromised data and delete hacker tools without compromising evidence and progress.
- Public Relations – If breach needs to be reported to the media and/or notify affected individuals.
  - Identify the best notification and crisis management tactics before a breach ever occurs.
  - Track and analyze media coverage and quickly responds to any negative press during a breach.
  - Craft consumer-facing materials related to an incident (website, media statements, etc.)

Incident Response Team

Incident Response Manager Senior leadership team, Assistant General Manager

Technical hardware and networking experts Thurston County Information Technology

Front-end software experts Staff familiar with the software, could be Customer Service Team depending on software involved with the cyber breach.

Communications experts Customer Service Team

Legal experts District counsel, Joe Rehberger.

5. DEFINITIONS

Cyber Security Incident -

A Cyber Security Incident is any event that threatens the confidentiality, integrity or availability of the information, resources we support or utilize internally, especially sensitive information whose theft or loss may be harmful to individual customers, our partners, or our organization.

Incident Response Team (IRT) -

The IRT is made up of experts across different fields in the organization whose charge is to navigate the organization through a Cyber Security Incident from the initial investigation to mitigation, to post incident review. Members include an Incident Response Manager, technical hardware and networking experts, front-end software experts, communications experts, and legal experts.

Incident Response Manager (IRM) -

The IRM oversees all aspects of the Cyber Security Incident, especially the IRT. The key focuses of the IRM will be to ensure proper implementation of the procedures outlined in the Cyber Security Incident Response Plan, to keep appropriate Incident Logs throughout the incident, and to act as the key liaison between IRT experts and the organization's management team. At the conclusion of a Cyber Security Incident, the IRM will conduct a review of the incident and produce both an Incident Summary Report and a Process Improvement Plan.

Cyber Security Incident Log -

The Cyber Security Incident Log will capture critical information about a Cyber Security Incident and the organizations response to that incident and should be maintained while the incident is in progress.

Incident Summary Report (ISR) -

The ISR is a document prepared by the IRM at the conclusion of a Cyber Security Incident and will provide a detailed summary of the incident, including how and why it may have occurred, estimated data loss, affected parties, and impacted services. Finally, it will examine the procedures of the Cyber Security Incident Response Plan, including how the IRT followed the procedures and whether updates are required. The template for the ISR may be seen in Appendix A.

Process Improvement Plan (PIP) -

The PIP is a document prepared by the IRM at the conclusion of a Cyber Security Incident and will provide recommendations for avoiding or minimizing the impact of future Cyber Security Incidents based upon the “lessons learned” from the recently completed incident. This plan should be kept confidential for security.

Assessment: The initial assessment performed to confirm the existence of a Security Incident includes determining the scope, the impact and the extent of the damage caused by the Security Incident.

Quarantine: A state of isolation or separation to minimize the damage incurred from the Security Incident.

Type	PUD Programs/Software		Managed By	Notes	Types of Security Breaches	Questions
Third Party	SKADA - Tanglewilde		Shannon Calvert	Telemetry is controlled and monitored by computer at the 1230 building and Shannon in Ellensburg; Kim monitors at home as well; This system is to monitor the reservoir levels and controls the pumps in the pumphouse.	Computer Hack	Does the SKADA control chlorination? Are there any other systems in the pumphouse that are controlled remotely or offsite by a technology/computer?
					Disabled; disconnection between computer and technology in the pumphouse	
					Disconnection between Shannon and PUD telemetry	
	Website - Expression		Thurston County			
	Outlook - Email		Thurston County		Email phishing, etc.	
Third Party	Treasurers Office		Thurston County		Password theft/compromise;	
Third Party	Banks	Key Bank				
Third Party	SAO		State Auditor's Office			
Third Party	Credit Cards	Key Bank		Gas cards use a pin number. Employee provides receipt.	Stolen cards; unauthorized purchases; undetected use;	
		Pacific Pride				
		ARCO				
		Wex Bank				
		Home Depot		Issued to employee; Employee has to have a receipt.		
		Lowes				
Third Party	All Vendors					
Third Party	Door Access	VAX Access Controls		IP address that can only be accessed by computer in the 1230 building, connected to the server	Server failure; Check on vulnerabilities for IP addresses	
Third Party	Smarsh Text Archive		Smarsh			
Vendor						
	Civic Pay		Springbrook			
	VOIP		Olympic Telephone			
	Cameras		Olympic Telephone			
	IVR		Springbrook	Includes a third party vendor; Julie will get name of vendor		
	DRS		Department of Retirement Systems			
	Springbrook		Springbrook	PUD houses the program on servers; SQL server database that the county provided and we share space with server space with other county entities;		