APPENDIX Q

DESIGN AND CONSTRUCTION STANDARDS

RESOLUTIONS

- Resolution 1410 – Extension of Water Line in the Rural Areas
- Resolution 1626-94 – Improvements to the Water System and the Methods of Financing
- Resolution 1744-97 – Cross Connection Control and Backflow Assemblies

DISTRICT STANDARDS

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STANDARD DETAILS FOR CONSTRUCTION
RESOLUTION NO. 1410
A RESOLUTION ESTABLISHING POLICY FOR THE EXTENSION OF WATER LINE IN THE RURAL AREAS

WHEREAS, the Board of Commissioners of Skagit County PUD No. 1 judge it advisable that a policy for line extensions for rural areas be established, and

WHEREAS, it is necessary to differentiate between rural and urban, and

WHEREAS, the definition of those two words is found in Webster's New Collegiate Dictionary, copyrighted 1981, and are defined as follows:

RURAL - open land/of or relating to the country, country people or life or agriculture
URBAN - relating to, characteristic of, or constituting a city.

WHEREAS, it is possible in rural areas to have "platted subdivisions" like those in urban areas; therefor the term "rural platted" means a subdivision in the rural area that is platted and approved by the Skagit County Government. Short plats are also included in this resolution, and they are defined as "four lots or less", and

WHEREAS, that area that is not part of a city, town or platted area will be referred to as "rural unplatted".

NOW, THEREFORE BE IT RESOLVED that a water line extension within a "rural platted" area shall follow the procedures as set forth in Resolution No. 1393.

BE IT FURTHER RESOLVED that in "rural unplatted" areas the water line shall be extended one length of pipe beyond the structure of the residence or the structure of the commercial establishment. Also, the diameter size of the water pipe should conform to DSHS standards, and the intent of sizing the line properly is to ensure a sound, well-structured water system that will provide the needed service in future years.

PASSED AND APPROVED by the Board of Commissioners of Public Utility District No. 1 of Skagit County, Washington, in regular session duly met this 22nd day of January, 1985.

[Signatures]
President
Vice President
Secretary
RESOLUTION NO. 1626-94

A RESOLUTION OF THE COMMISSION OF PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON PROVIDING FOR IMPROVEMENTS TO THE WATER SYSTEM AND THE METHODS OF FINANCING THEREOF WHEN THE WATER PIPE PLANT IS TO BE INSTALLED BY EITHER THE DISTRICT (OR THE DISTRICT’S CONTRACTOR) OR A PRIVATE DEVELOPER

WHEREAS, various policies of Public Utility District No. 1 of Skagit County, Washington, regarding the installation of water lines have been stated in previous resolutions, and

WHEREAS, Public Utility District No. 1 of Skagit County, Washington, has determined a more equitable and precise policy is needed for the District and its water customers.

NOW, THEREFORE, BE IT RESOLVED that the following policy be adopted:

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1. Ownership

All water lines and appurtenances shall be designed and installed to District requirements and shall be and remain exclusive property of the District for future operation, maintenance and service responsibilities, with the exception of fire hydrants as specified in Section No. 3. j (3) (a). The point of District ownership shall end at the meter, detector check valve or hydrant gate valve, unless otherwise stated on the District’s letter of final acceptance. For ownership of double detector check valves refer to Section No. 3. j. (1) (d) (3).

2. Design Responsibility

Water plant plans and specifications shall be prepared by the District’s engineers or a private registered professional engineer to design standards of the District. The designer shall consult with the District’s Engineer to determine requirements and criteria. Should the Developer want the District to prepare the plans and specifications, the District will determine if the existing workload will allow adequate time for the District’s engineers to perform the task. Installation specifications shall include those of the Washington State Standard Specifications for Road, Bridge and Municipal Construction, modifications and other requirements set by the District. The plan shall be for water pipe plant only, not all utilities on one drawing.

3. Design Criteria:

a. General

The following design standards are the minimum allowable by the District for any and all water improvement projects, whether designed by the District or by another engineering firm/agency. The intent is that all projects be designed to the same standard to ensure uniformity of final product and of cost to the financier.
Good design of projects is a goal of the District. Although these standards are intended to apply to physical development within the District, the standards do not apply for all situations. Compliance with these standards does not relieve the designer of the responsibility to apply conservative and sound professional judgment. These are minimum standards and are intended to assist, but not substitute for competent work by design professionals. The District may at its sole discretion for any reason require more stringent requirements than would normally be required under these standards.

Waiver of specific design criteria indicated herein must be requested in writing and may be approved only by the District’s General Manager. The decision to grant, deny or modify the standards will be based upon evidence that the request can meet the following criteria:

1. The change will achieve the intended result in comparable or superior design and a better quality of improvement; and
2. The change will not adversely affect safety and/or operation; and
3. The change will not adversely affect maintainability.

b. Pipe Sizing

1. All main extensions and replacements shall be sized by the District based on District hydraulic and pressure requirements to comply with the District’s basic water policy, Resolution No. 383 or as amended. The nominal size of these mains shall be a minimum of eight inches in diameter unless otherwise approved in writing by the District’s General Manager. In all cases, pipe size shall meet Washington State Department of Health (DOH) minimum standards.

Extensions and replacements to and within the District’s system shall be sized:

a. to provide at least 40 psi, during peak hourly design flow conditions, at every service connection (meter) in the projected pressure zone; or

b. to provide at least 20 psi, during fire flow and peak hourly design flow conditions, at every service connection in the projected pressure zone (fire flow shall be as required by the Fire Marshal having jurisdiction); or

c. to flow water no faster than 10 fps in ferrous pipe and 8 fps in non-ferrous pipe under the conditions stated in conditions (a) and (b) above, whichever is more stringent.

2. Customer/Developer Pipe Size Criteria:

The Customer/Developer will be required to pay for at least the minimum size pipe required to satisfy its flow and velocity requirements and/or minimum pipe size as delineated in Section No. 3. b (1). The District reserves the right to increase the pipe diameter for present or future needs of the District. This determination will be made by the District. If the District chooses to implement this option, the District may pay the difference in cost between the Customer/Developer flow requirements and/or minimum pipe size as delineated in Section No. 3. b (1), or require the Customer/Developer to pay the difference. The financing method and approval of increased pipe sizes will require Commission approval.

c. Materials:

The District’s minimum standard is AWWA C151 ductile iron pipe Class 50, polyethylene wrapped. Should soil testing determine that the surrounding soils are corrosive, or that stray electrical current is present, the District may determine AWWA C-900 PVC pressure pipe Class 200 will be required. Tracer wire shall be used over PVC pipe when it is allowed. Tracer wire shall be No. 10 copper wire and shall be brought up in each valve box or attached to the ductile iron pipe at the transition point.
Should a District project be paid for in part with Federal funds or financed with Federal funds, Federal specifications may supersede the District standard for pipe materials. The Federal requirements will not be considered precedent-setting and will not be applicable to non-Federal funded or financed projects. The remaining provisions of this Resolution shall not be affected.

d. **Length of Water Main Installation Requirements:**

   (1) Quantity requirements for rural nonplated areas are described in Resolution No. 1410. Should that resolution be superseded, the current resolution will apply.

   (2) Customer/Developer will be required to install pipe across its entire front footage of its lot/land in urban, city and plated areas. When more than one dwelling or establishment is to be served by a water main, and a public road, street, or private roadway provides access to the dwellings or establishments, the District will require a water main to be installed in front of the dwellings or establishments to the far edge of the property being served.

   (3) Any appeals to the Commission shall be scheduled through the General Manager.

e. **Water Services, General:**

   Water services should not exceed 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 cannot assure adequate pressure for these services as there are areas within the District where pressures are minimal.

   The minimum meter size shall be a 5/8 x 3/4-inch meter or size in accordance with most current Uniform Plumbing Code.

   Water mains constructed in plated areas shall include the installation of water services stubbed to common or individual lot corners. New services in nonplated areas will be located by the customer. Water service installation shall include all materials indicated on the District’s appropriate standard detail and conform to Section 9-30 of the Washington 1994 Standard Specifications for Road, Bridge and Municipal Construction including the most current amendments and revisions. Tracer wire shall be attached to all polyethylene pipe. Tracer wire shall be No. 10 copper wire. Tracer wire shall be installed to the end of the service pipe stubbed up approximately three feet at the property corners.

   If the Customer/Developer encounters soils with indicators of hydrocarbons or should the District determine the possibility hydrocarbons exist, one inch copper pipe, soft, type K shall be used for one inch and smaller water services. Compression fittings suitable for type K copper pipe shall be used.

   One and one-half inch and two inch services shall use 200 psi polyethylene pipe or Schedule 80 PVC on short side and less than 20'-0" in length. Three inch and larger services shall use class 50 ductile iron pipe.

f. **Water Service with Meter Costs:**

   A Customer or Developer must apply for and pay for a water service with meter prior to installation of the meter. In addition to the metered service cost, new water services are required to pay a Systems Development Fee to the District. Refer to Resolution No. 1596-93 or its successor. The Customer or Developer will be required to pay the System Development Fee and applicable meter installation fee as required by the resolution(s) in effect at the time a water meter is paid for. Water meters and related appurtenances will be installed by the District, the District’s contractor, or by the Developer’s contractor under District supervision.

g. **Water Service Installations:**

   Water service lines shall be installed across streets and to common lot corner locations concurrent with the water main installation. The service lines will be connected to the pipelines and extended to lot lines with a tail piece extended
above the ground. Meter boxes shall not be installed until lot frontage grades are established and water service actually applied for. Water service stubouts to property corners shall be in place prior to pressure and bacteriological testing of the water main. Water service stubouts from the water line to the property corner(s) shall be part of the pipe installation cost to be borne by the Customer/Developer.

h. **Pressure Reducing Valves:**

Pressure reducing valves shall be installed on water services by the Customer/Developer when static line pressures exceed 80 psi. At the Customer/Developer's request, the District will calculate or measure the water pressure at the Customer/Developer's point of delivery as an aid to determining whether a reducing valve is required. Pressure reducing valves, when required, shall be installed and maintained by the Customer/Developer. Pressure reducing valves are not to be installed in the meter box.

i. **Backflow Prevention:**

The District responsibilities include protecting the entire water system from actual and potential contamination. Present state and national regulations require that there shall be no cross-connection, open or potential, between a system furnishing potable water and a system furnishing non-potable water. Construction shall insure the prevention of back flow of contaminated water into a potable water system. Cross-connection control assemblies shall be installed by the Customer/Developer when deemed necessary or when required by the District. The entire cost of the installation shall be borne by the Customer/Developer, and any assemblies shall remain its ownership and its responsibility. Inspection of such assemblies may be made periodically by District representatives. It shall be the Customer/Developer's responsibility at all times to maintain its cross-connection control assemblies in a fully functioning condition. All DOH requirements must be satisfied. This requirement is in conjunction with and does not supersede Resolution No. 1292. Should Resolution No. 1292 be superseded, the superseding resolution shall apply.

j. **Fire Protection:**

1. **Commercial:**

a. Fire protection by fire hydrants and/or other means shall be required as determined by the person designated as "fire chief" for the jurisdiction involved. The District will not allow installation of fire hydrant(s) on water mains wherein the potential demand of the hydrant will exceed safe operating velocities as established in Article 3 b. (1) (c) of this Resolution.

b. Application shall be made by completing and signing a standard application form.

c. The minimum charge shown on the District's rate schedule (Resolution No. 1603-93 or the superseding resolution) includes water for fire protection use only.

d. Service charge for new fire protection service connection:

1. The Customer shall pay the total installation cost of all fire service lines from the Customer's point of use to an existing or new District main with adequate capacity to provide the required fire flows.

2. The Customer shall pay the cost of the detector check meter plus the cost of installation. Ownership of detector check meters installed in buried vaults outside the Customers building shall be transferred to the District.

3. Double detector check valves installed within the Customer's building as part of a fire sprinkler system shall have a remote meter reader installed on an outer wall of the building the check valve is installed in and be readily accessible to the District's meter readers. On easements on
private property District ownership and responsibility shall end at the gate valve on the water main at the point the fire service line is connected. On public right-of-ways District ownership and responsibility shall end at the property line.

(4) Notwithstanding the provisions as 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 protection service connection, it is understood that the District cannot guarantee any minimum quantities of water or pressure of the water to be furnished to any 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.

(5) Standby charges for fire protection are addressed in Resolution No. 1603-93. If any of these resolutions are superseded, the superseding resolution shall apply.

(2) Residential:

(a) The installation of fire hydrants in residential areas shall be according to City, County and State regulation. The District will refer to the applicable WAC provisions (WAC 248-57) and/or to the person designated as the "fire chief" to the particular jurisdiction for applicable requirements. The District encourages fire hydrant installation on mains large enough and with adequate supply to provide sufficient fire protection. The District will not allow installation of fire hydrant(s) on water mains whereby the potential demand of the hydrant will exceed safe operating velocities as established in Article 3 b. (1) (c) of this Resolution.

(3) General:

(a) Fire hydrants shall be a cost of the particular project. Final ownership of the hydrant shall be transferred to the District except on private property and not accessible to the public wherein the District may determine that the hydrant ownership shall remain with the Customer/Developer.

(b) 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, and the District shall not be liable in any manner for any loss or claim for reason for the quantity or pressure of water furnished to such hydrant.

(c) Only authorized District personnel or firemen in the performance of their duties shall operate fire hydrants connected to the District’s water system. The only exception to this requirement is specified within Resolution No. 1457 or the superseding resolution.

k. Tapping of Mains:

All taps made to the existing main shall be made by District crews or under direct supervision of qualified District personnel. Payment shall be made in advance for this work.

4. Water System Improvements Installed by District / District’s Contractor

a. Application for Water Line Extension or Other Services:

Upon request, the District will provide to a Customer/Developer a written estimate for the installation of water lines and appurtenances. If the Customer/Developer and the District agree to proceed with the project, the Customer/Developer shall pay in advance to the District the estimated cost of installing the water lines designed by the District Engineering Department. Costs shall include, but not be limited to, material, labor, equipment rental, engineering,
overhead, and right-of-way costs. Permits, easements, environmental and related reports, shoreline permits, railroad and highway crossing permits will be obtained by the District, and any fees levied shall be paid by the Customer/Developer.

Payment may be made in two installments. The first payment shall include, but may not be limited to, the estimated cost of materials, engineering, right-of-way cost, permits, easements, environmental and related reports, shoreline permits, railroad and highway crossing permits. The second payment shall be made when the District is in a position to reasonably forecast when it will be able to begin actual on-site construction. The second payment shall be the balance of the estimated cost as described in this section. The District shall contact the Customer/Developer, or his financier if directed, and request the balance of the estimated cost. After all work has been completed, all conditions satisfied, and all accounting completed, the Customer/Developer shall be billed for additional costs incurred over the payment(s), or refunded any unused balance.

If a Customer/Developer cancels a project after the first payment is paid, the Customer/Developer shall be required to pay District costs incurred through the date of written termination of said project. Termination costs may include specialty items if said items cannot be returned to the vendor. Re-stocking charges shall be to the Customer/Developer account. Specially items that cannot be returned shall become property of the Customer/Developer. Cancellation charges shall be deducted from the deposit and the balance refunded. If the cancellation charge is greater than the deposit, the Customer/Developer shall be charged for the difference.

Estimates over sixty days in age are subject to change prior to acceptance of payment. If the District is required to revise the estimated cost of a project more than two times, the District may charge the Customer/Developer the cost of further revisions to the design or estimate.

b. Contracts with District:

Contractors working for the District must enter into a contract with the District for the work involved. The District will prepare the contract documents.

5. Water System Improvements Installed by Customer/Developer

a. Written Estimate for Plan Review and Construction Inspection Services:

Upon request, the District will provide to a Customer/Developer a written estimate for the installation of water lines and appurtenances. If the Customer/Developer and the District agree to proceed with the project, the Customer/Developer shall pay in advance to the District the estimated cost of installing the water lines designed by the District Engineering Department. Costs shall include, but not be limited to, material, labor, equipment rental, engineering, overhead, and right-of-way costs.

b. Developer Damage Agreement:

The Customer/Developer shall sign and return a “Developer’s Agreement” form and “Work Order Authorization” furnished by the District that guarantees payment to the District for costs of repairs to District plant damaged by activities of the Customer/Developer or its contractor(s) in the construction of the development. The agreement requires the Customer/Developer to certify that the final grade has been established throughout the construction area of the development and that the water plant has been installed to the design grades. The Customer/Developer shall agree to accept financial responsibility to relocate all water plant vertically and horizontally if the grades are changed.

c. Progress Requirement:

Sections 2, 5a, 7, 8, 9a, 9b, 10, 11, 12, and 13 are to be complied with, completed and satisfied before any water plant construction is started. There shall be a pre-construction conference with the District a minimum of 48 hours prior to start of construction.
d. Final Connection:

After acceptance, the District shall complete final connection of the Customer/Developer-installed plant to existing District plant. If the District has already installed tee(s) and valve(s), the Customer/Developer may complete the connections by special agreement and under District inspection. All connecting pipe and fittings shall be sterilized as required in Section 14c and shall be maintained clean and uncontaminated. System flushing shall be performed by qualified District personnel.

e. As-Built Drawings:

The Customer/Developer will furnish to the District one high-quality set of transparent reproducible drawings, (maximum size of 24" by 36") corrected to as-built conditions. The as-built drawing shall show the exact locations of all installed pipe and fittings in relation to survey points, such as street monuments, lot corners, etc.

f. Requirement Prior to Final Connection to Existing System:

Sections 5c, 5g, 14b, 14c, 16 and 17 shall be completed to the District’s satisfaction before full and final connection to the District system will be permitted.

g. District Acceptance:

If the plant appears to have been installed in good workmanlike manner, to the approved plans and specifications, pressure and bacteriological tests are passed, and all of the above listed conditions are fully satisfied, the District shall prepare and date a letter of acceptance of the pipe plant installed. This date shall begin the period of warranty.

h. Transfer of Ownership:

The Customer/Developer shall deliver to the District a Bill of Sale or acceptable form, transferring the ownership of all pipe plant within the development to the Public Utility District. The Bill of Sale shall describe lengths and sizes of plant, and the location in general terms such as the name of the plat. In addition, there shall be an itemization of all installed costs of water pipe plant broken down as to descriptions of kind, size and lengths of each type of pipe with unit or lump sum costs for each type, including fittings. The cost itemization shall include a breakdown of the material, labor, construction equipment, engineering, and sales taxes. Water service materials and costs (and meters if installed by the Developer), must be listed separately. Include all private engineer’s fees involved with water plant work. Do not include fees paid to the District.

Fire hydrant assemblies (tee, valve, connecting pipe, valve casing and cover, hydrant, blocking and installation) and costs are to be listed separately but not included in cost of project. Hydrants installed under this resolution shall be owned and maintained by the District except as specified in Section No. 3. j. (3) (a).

6. Water System Improvement Financing

a. Formation of a Local Utility District:

Property owners within a defined area may petition the District Commissioners to extend water mains to their properties by formation of an LUD. All engineering, administrative costs, attorney and consultant fees, feasibility studies, title reports, costs of easements, permits, environmental reports, and shoreline permits and other related costs are a part of the LUD costs. LUD’s estimated to cost less than $12,000 will generally be considered not feasible. If this method is used, benefited properties will be assessed as provided by law.

b. District Financed Water Plant:

When a water pipeline extension to properties not previously abutting a District pipeline is constructed with District moneys, each Customer/Developer connecting to the extension during the ten years following completion of the construction shall
be required to share in the cost of the original construction. See Section 15 of this Resolution.

7. **Plan Approval - Public Utility District:**

Two sets of plans and specifications shall be submitted for the District Engineer's approval. One set shall be returned stating corrections, additions or approval as submitted. Two corrected final design sets of water plant plans and specifications shall be furnished to the District Engineer. Plans of sewers, buried wire service, other utilities, street design and final plat shall also be furnished, unless waived by the District Engineer, to illustrate the relationships of other facilities to water pipe plant. Water pipeline survey stationing shall be referenced to roadway center line or right-of-way line. Water lines that are to be installed in areas where finished grades do not exist or where the finished grades may be realigned shall have final grades established prior to installation. Grade and alignment stakes shall be required for the water plant installation.

Developments or projects that are to be phased shall be shown in their entire concept prior to approval of any phase, so the District can be assured that adequate design criteria are established.

8. **City Plan Approval - County Permit:**

Plans of water plant shall be submitted for approval to the governing agency in which the development is located. Three sets of plans are required for City approvals. One signed set is retained by the City, one signed set submitted to the District and one signed set for the Customer/Developer. Skagit County requires two sets of plans with its standard permit application. One copy of the County permit, or one signed set of plans in the case of a city location, shall be delivered to the District Engineer prior to commencement of work. The project designer shall verify submittal requirements with the permitting agencies.

9. **Other Approvals:**

a. **Permits**

All other permits shall be obtained by the waterline installer in the District's name as required by law. These could include, but not be limited to, Washington State Department of Health, Washington State Department of Ecology, Diking Districts, Drainage Districts, game and fish agencies, Highway Department, Department of Natural Resources, State land agencies, gas or oil pipeline companies, railroads, etc. Copies of all permits and/or approvals shall be furnished to the District Engineer prior to commencement of work. All rights shall be granted to or transferred to the District.

b. **Materials Submittal Requirement:**

Prior to construction, the Customer/Developer or the contractor installing the water system improvements shall submit a list of all brands, sizes, types, grades and standards of materials to be used in the water plant. All pipe, fittings, valves and appurtenances shall be manufactured to AWWA standards. The District may reject certain brands at its discretion. The District will provide approval, disapproval and/or comment by letter.

10. **Easement Rights-of-Way:**

All plant not to be located on public dedicated rights-of-way shall be on easements dedicated to the District, either shown on the plat or by instrument acceptable to or on the District's standard form, "Water Pipeline Easement". Easements shall be twenty to twenty-five feet in width (except wider under special topographic conditions), or to a width as required by the District. An easement may coincide with another utility easement, except all sanitary sewer lines must be ten feet or more from water lines and other utilities a minimum of five feet. Water lines shall be located no closer than five feet from the edge of easement areas.

11. **Deposit:**

The District will provide a quotation based on estimated costs for tie-ins to existing District plant and for District inspection and administration of the work performed by other than the District forces. The Developer must request these quotations a minimum
of three weeks in advance of the need for the cost figures. The Developer shall pay a
deposit in the amount of the quotation(s) before any work is started. Quotations are
subject to change if deposits are not made within sixty days of the quotation. After all
work is complete, all conditions satisfied and all accounting completed, the Developer
shall be billed for additional costs incurred over the deposit(s) or refunded any unused
balance.

12. Contractor Insurance Requirements:

A contractor performing water plant installation 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. Specific requirements are pursuant to Section 1-07.18,
Public Liability and Property Damage Insurance, of the Standard Specifications,
Substitute District for State and General Manager for Secretary in Section 1-07.18.
Certification by the Contractor that a policy or endorsement to an existing policy
satisfying all the requirements set forth above has been obtained from a particular
insurance company and is in effect shall be forwarded to the General Manager prior to
commencing work on the project.

13. Licenses:

Contractors working for the Customer/Developer or the Customer/Developer installing
water plant, shall be licensed and bonded in the State of Washington. A copy of the
installing entity’s contractor’s license shall be forwarded to the District prior to
installation of the water plant.

14. Construction Procedures:

The District has adopted the Washington State Department of Transportation/American
Public Works Association 1994 Standard Specifications for Road, Bridge, and Municipal
Construction, including the APWA Supplement. Should the 1994 edition be revised the
most current issue shall be applicable. All construction work of plant or facilities to
become final property of the District shall be as specified in the Standard Specifications
unless superseded in this resolution or specifically amended by special conditions within
the project specifications that are approved by the District’s Engineer.

The approved construction plans and specifications shall be followed. No deviations will
be allowed without request for change and approval received from the design engineer
and District’s Engineer. The District reserves the right to order changes in the event of
conditions or circumstances discovered during construction; such changes could result
from the ability or care shown by the contractor, natural and man-made conditions, or any
other reason.

There shall be extreme care in checking and cleaning all pipe and fittings of dirt, debris
and/or any foreign matter during installation. All material shall be kept clean. Plugs
shall be used to seal plant installed when it is to be left for any period of time; including
lunch breaks, coffee breaks and overnight. Pipe and fittings shall be washed before
installation if contaminated by dust, smoke, exhaust or any other material. Material
contaminated by petroleum products or questionable chemicals shall be rejected. No
trench water shall be allowed to enter installed plant.

a. District Inspection:

No work on water pipe plant shall be allowed by other than District personnel
without a District inspector being present. The District may refuse acceptance of
any such plant installed without District inspection. The District shall be notified
a minimum of two full working days in advance of a firm starting date and time to
arrange for and schedule the inspector. Work must proceed in a continuous
manner. If there are breaks in construction, there must be two working days
notice before beginning again. Inspection costs shall be borne by the
Customer/Developer.

b. Pressure Testing:

All new plant shall be hydrostatic pressure tested as specified in Sections 7-11.3(11),
Exceptions to this requirement must be recommended in writing by the District’s
Engineer and approved in writing by the District’s General Manager. The waterline
installer will provide all testing equipment. The final testing performed by other than
District personnel shall be in the presence of the District’s inspector.
c. Disinfection:

Before being placed into service, all new water mains and repaired portions of or extensions to existing mains shall be chlorinated and a satisfactory bacteriological report obtained. Disinfection procedures are detailed in the Standard Specifications.

The waterline installer shall be responsible for disposal of treated water flushed from mains and shall neutralize the waste water for protection of aquatic life in the receiving water before disposal into any natural drainage channel. The Customer/Developer shall be responsible for disposing of disinfection solution to the satisfaction of State and local authorities.

d. Final Tie-In:

Final tie-in to existing District plant shall not be permitted until after acceptance by the District of all installation. Acceptance shall not be made until all required paper work and acceptable plant installations are complete. A small tubing connection (3/4-inch to maximum of 2-inch size) can be made from District plant to supply water for line filling, pressure testing, sterilization and sterilizing water removal. An approved back flow preventer shall be installed in the 3/4 to 2-inch supply line.

15. Latecomer Provisions:

Additional Customers added to any extension built and paid for by a Customer/Developer during the first ten years after completion of the construction will be required to share in the cost of the original construction. The cost per foot of the extension would be established at the time of the original installation. Prior to connection, the Customer shall pay to the District, in addition to other applicable charges, a latecomer fee equal to the front footage of the pipeline abutting the Customer’s property multiplied by one of the following footage charges:

(1) For pipelines eight inches in diameter and smaller: one-half the actual cost per foot of the extension including fire hydrants.

(2) For pipelines larger than eight inches in diameter: one-half the average cost per foot for typical 8-inch diameter water extensions in the water system for the calendar year the oversized main was installed. The cost of the 8-inch water pipeline shall be all inclusive, e.g., includes fittings, fire hydrants, backfill materials and surface restoration. The average cost per foot, for the calendar year 1993, has been established at $22.88. The cost per foot for pipe installed during ensuing years will be adjusted to incorporate inflation as established in the Consumer Price Indexes (1982-84=100) published by the Bureau of Labor Statistics, U.S. Department of Labor.

(3) Water mains that do not have opposing sides for water service connections may be eligible for a different latecomer formula as permitted in Section 29.

If a later Customer/Developer taps off the side of this original extension with a new main pipeline he shall pay on the basis of a 100-foot lot multiplied by the footage cost, or on the basis of one-half the front footage of the water main abutting the Customer’s property multiplied by one of the above footage charges, whichever is greater. There shall be no latecomer fees for any main extensions continuing off the end of the original extension. The effective start date for the term of the latecomers agreement is the date of initial permanent use of the new water main, or the acceptance of the installation by the District Commissioners, whichever is later. No waivers shall be permitted.

A Customer/Developer shall not be eligible for latecomer refunds for land owned at the time of water main installation and later sold. The effective start date for the term of the latecomers agreement is the date of initial permanent use of the new water main. No waivers shall be permitted. Latecomer refunds cannot exceed the cost of the original installation.

16. Bond:

A maintenance bond or cash bond for the water plant installed by other than District personnel shall be furnished to the District. For projects of $10,000 or less, the bond shall be not less than fifty percent (50%) of the full installed value of the water plant. For
projects ranging from $10,001 to $25,000, the bond shall be not less than forty percent (40%) of the full installed value of the water plant. For projects in excess of $25,001, the bond shall be not less than twenty five percent (25%) of the full installed value of the water plant. The bond shall be effective for a period of one year from the date of the letter of acceptance of plant by the Public Utility District. This letter shall not be prepared and dated until after satisfaction of all conditions listed herein. The purpose of the bond shall be to guarantee payment to the District for costs of repairs that become necessary during the first year of operation. Further, the bond shall guarantee payment for replacement of any or all of the plant if it is determined failure is excessive and the plant cannot be relied upon for long, trouble-free life. The District shall be sole judge of the adequate performance of such plant.

17. District Representation by Employees:

No inspector, agent, or employee of the District may ask, demand, receive or accept any personal compensation for any service rendered to water consumers or other persons, in connection with supplying or furnishing water by the District. No promise, agreement or representation of any employee or agent of the District with reference to the furnishing of water shall be binding on the District unless the same shall be in writing signed by the General Manager or his authorized agents.

BE IT FURTHER RESOLVED that this resolution shall supersede Resolution Numbers 1291, 1376, 1393, 1472, 1522-91 and 1523-91.

ADOPTED by the Commission of Public Utility District No. 1 of Skagit County, Washington, at a regular meeting held this 31st day of May, 1994.

[Signatures]

President

Vice President

ATTEST

Secretary

Resolution No. 1626-94
RESOLUTION NO. 1744-97

A RESOLUTION OF THE COMMISSION OF PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, ADOPTING POLICY AND PROCEDURE CONCERNING CROSS CONNECTION CONTROL AND BACKFLOW ASSEMBLIES

WHEREAS, the Board of Commissioners desires to define and regulate the installation of backflow prevention assemblies, and

WHEREAS, it is a State Department of Health requirement that the District protect the potable water system from actual and potential contamination by objectionable and hazardous liquids, solids and gasses, and

WHEREAS, the Board of Commissioners desires to amend and enhance District policies relating to Cross Connection Control,

NOW, THEREFORE, BE IT RESOLVED, by the Board of Commissioners of Public Utility District No. 1 of Skagit County, Washington, as follows:

The installation and maintenance of any cross-connection is prohibited which could endanger any water supply of the District. Existing or future water service to any premises will not be allowed to exist by the District if a cross connection control assembly required by the Department of Health or by the District is not documented in writing to be permanently installed, maintained and tested annually. Water service will be discontinued to any consumer that refuses admittance of District personnel to their premises for the purpose of cross connection control. Water service will not be restored until such conditions or defects are documented to be correct. Expenses incurred to enforce these provisions shall be paid by the consumer before water service is restored.

The control or elimination of cross connections shall be in accordance with the provisions of the Washington Administrative Code, WAC 246-290-490 or subsequent WAC. The policies, procedure, and criteria for determining appropriate levels of protections shall be in accordance with the accepted procedures and practices defined in Cross Connection Control Manual - Pacific Northwest Section - American Waterworks Association, 5th Edition, or any superseding edition. Policies will be interpreted and carried out by a State certified cross connection control specialist or backflow assembly tester, whichever applies. All cross connection control devices must be as approved by the State of Washington.

BE IT FURTHER RESOLVED, this resolution supersedes Resolution No. 1292.

ADOPTED by the Commission of Public Utility District No. 1 of Skagit County, Washington, at a regular open meeting held this 7th day of January, 1997.

Jones E. Atterberry, President

Lee D. Bode, Vice President

Al Littlefield, Secretary

Resolution No. 1744-97 1 of 1
DESIGN DRAWING STANDARDS FOR 
PROPOSED DISTRICT DISTRIBUTION FACILITIES

The following drawing standards apply to the design of any water distribution facilities that are being submitted to the District for approval. In the case of a project that includes the design of multiple utilities, the Design Engineer may use their own AutoCAD standards and cover sheet layout. However, the District still requires that the design of the water distribution facilities be provided separately from the other utilities, following the format as described below.

DRAWING REQUIREMENTS

1. Drawings shall be prepared using the District’s drawing standards, including layer names, line types, line weights, symbols, .ctb file, details, etc. All drawings shall be prepared using the District’s title block with the Design Engineer’s company logo placed in the space provided. All District standards are available at www.skagitpud.org.

2. Final Drawings shall be submitted on good quality reproducible paper copy, along with an electronic file on Compact Disk (CD) media in AutoCAD drawing format and shall be archived so that all x-references, including title block and border, are a permanent part of the drawing. Drawings submitted in .plt or .pdf format are not acceptable.

COVER SHEET

All plan sets must have a cover sheet, followed by the plan and profile sheets, then followed by the detail sheets. The cover sheet shall be Sheet 1 of the plans and must contain the following:

- Project Title: Title shall be in large, bold text, located on the upper center of the cover sheet. Typical project titles shall describe the District area, or primary street name and street termini.

- Project Description: Describe the type of work the project includes, such as: Replace 100 feet of 4” A.C. pipe with 100 feet of 8” D.I. pipe

- The District Construction Order Number (C.O. # ______) and the Work Order Number (W.O. # ______).

- Name and contact information of the Engineer.
• Vicinity Map showing the location of the project within the District.

• Sheet index

• Signature block for approval of appropriate fire district.

PLAN/PROFILE/DETAIL SHEETS

• Design drawings for proposed pipelines are required to show a plan view and a profile view of the pipeline on the same sheet.

• Sheet size shall be 22”x34” unless otherwise approved by the District.

• Drawings shall contain a North arrow on each plan/profile sheet with North oriented to the top or right side of the drawing.

• Drawings shall contain a bar scale on each plan sheet. The horizontal scale shall be 1”=20’ unless otherwise approved by the District. The vertical scale shall be as appropriate.

• Paper copies of drawings shall contain the stamp and signature of a registered Professional Engineer on each sheet.

• All dimensions shall be shown in feet, tenths and hundredths of a foot.

• Road centerlines in relation to right-of-way shall be shown. The names of public and private roads shall be shown.

• Existing underground utilities, including water mains shall be shown in the appropriate line type.

• All existing underground utilities shown on the plan view that cross the proposed waterline must be shown on the profile at the surveyed depth. If the depth is unknown, then the utility shall be shown at an assumed depth of three feet with a note that states “depth unknown”.

• Profile portions of water drawings shall show the proposed waterline in relation to other existing utilities. The profile must include rim elevations of all structures and manholes, invert elevations of all pipes connecting to structures and manholes, length of proposed waterline between structures or pipe grade breaks, pipe grade and utility crossings.

• Items to be called-out on the drawings shall include valves, fittings and their connections, and appurtenances such as air vacuum assemblies, blow-offs, flushing assemblies, hydrants and service connections.
• Drawing Callouts should be formatted as follows:

A. Plan View

➢ Call out the type of pipe, class of pipe, type of joint and restraint if applicable on plan view.

➢ Fittings and deflections that affect horizontal alignment should be called out in plan view only.

➢ Use following format on leader lines for fitting callouts:

\[
\text{STA XX + XX, XX' RT or LT} \\
\text{[number] – [size] [material] [fitting], [connection type] (Direction)}
\]

Example:  

\[
\text{STA 25 + 75, 10’ RT} \\
1 – 12” x 8” DI TEE, FL \\
1 – 8” DI GATE VALVE, FLxMJ (W) \\
1 – 8” DI SPOOL, PExPE (W) \\
1 – 8” FLEX COUPLING (W) \\
1 – 12” DI BUTTERFLY VALVE, FLxMJ (N)
\]

B. Profile View

➢ Fittings and deflections that affect vertical profile should be called out in profile view only.

➢ Use same fitting callout format as in plan view

➢ For storm and sanitary callouts on the profile view, use following format:

\[
\text{SSMH [size] or CB [type] [size]} \\
\text{RIM = XX.XX} \\
\text{IE [size] [material] (IN or OUT) (Direction) = XX.XX}
\]

Example:  

\[
\text{SSMH 60”} \\
\text{Rim = 60.75} \\
\text{IE 12” PVC IN (W) = 49.95} \\
\text{IE 12” PVC OUT (N) = 49.00} \\
\text{CB Type 1 48”} \\
\text{Rim = 31.75} \\
\text{IE 6” CONC IN (N) = 27.25} \\
\text{IE 12” CONC OUT (E) = 26.95}
\]
• Standard details and other project specific details should be consolidated and placed on sheets at the end of the plan set. Plan/profile sheets and detail sheets shall be cross referenced with the sheet and detail numbers of appropriate details.

• The Districts General Notes shall be included and District standard details shall be used unless a specific detail has not been developed and an alternative has been approved by the District.

• All new District pipelines shall be shown in bold and referenced to and stationed along the centerline of the street or right of way from West to East or South to North. Stationing shall start at most westerly point and increase to the east, or start at most southerly point and increase to the north. Start all stationing at 1+00. Stationing for points of curve, points of tangent and intersections shall be shown. For pipelines located within easements, stationing shall be along pipeline centerline.

• All existing District pipelines shall be shown on the plan view, along with the District CO number and year of installation. Coordination will be required with the District to research existing pipelines and their location.

• Show all existing water meters along the route and specify that the services are to be re-instated with new 1 ¼” PE pipe, unless otherwise specified.

• All new and existing District pipelines shall be drawn utilizing an offset from the existing right-of-way and/or road centerline.

• Road centerlines shall include length and bearings of all straight lines, curve radii, curve delta angles and arc lengths.

• A typical road or street section with roadway prism, ditches, underground utilities, etc. shall be included.

REVISION BLOCK

• Original submittal of plan set to District for review shall be noted in the revision box located on the District title block.

• All design changes made after District approval shall be noted in the revision box and revised plans shall be re-submitted to District for review.

RECORD DRAWINGS

• Upon completion of the project, the original drawings shall be changed to reflect the actual construction of the project and be submitted to the District as Record Drawings. Each sheet shall bear the stamp and signature of the Engineer of Record and the words “Record Drawings” shall be prominently shown.
• All changes made during construction shall be noted in the revision box. Plan and profile sheets should be clouded and noted in all areas where revisions have occurred and cross referenced with the revisions entered in the revision box. Revision clouds and notes shall be placed on a “Revision_#” layer so they can be isolated during review.

**DESIGN REQUIREMENTS**

The following design requirements apply to all new water pipeline construction within the District, regardless of whether the project is being designed for the District, a Developer or another jurisdiction within the District.

• Any new pipelines shall be offset a minimum of 5 feet center to center from existing or retired water pipelines. Department of Health guidelines require a 10-foot horizontal separation and an 18-inch vertical separation between water pipelines and sewer mains. The District requires a minimum 12-inch vertical separation between water pipelines and other utilities.

• Include a 1-inch air/vac assembly for a proposed 8-inch pipeline or a 2-inch air/vac assembly for a 12-inch pipeline at any high points as determined by the profile.

• Include a 2-inch flushing assembly for proposed pipelines, 8-inch diameter or less, and a 3-inch flushing assembly for proposed 12-inch pipelines at the ends of new proposed pipelines. For pipelines larger than 12-inch diameter, contact the District for requirements.

**SURVEY REQUIREMENTS**

The following survey requirements apply to all survey only projects put out for bid and awarded by the District. Contractors doing work for developers or other jurisdictions may use their own survey standards. The District still requires, however, that NAD83/91 horizontal datum and NAVD 88 vertical datum be used.

1. All surveys shall be completed to NAVD 88 vertical datum, and NAD83, Washington State Plane Coordinates, North Zone horizontal datum. A copy of the original survey notes must be submitted to the District for future reference.

2. The Surveyor shall locate and show on the topographic survey drawing the following information located within the road right of way or other project limits as determined by the District:

   • The location of permanent structures including retaining walls, bridges, and culverts.

   • Description, location and elevation of bench marks used in the survey.
• All found monuments and property corners shall be shown. All survey points shall also be provided to the District in digital format.

• Right of way lines and easements shall be shown with appropriate dimensions. Easements shall be labeled with the Auditor’s File Number or Book and Page of each referenced document and the name of the owner of the property over which the easement is located.

• Location and the top elevation of soil borings or monitoring wells if ascertainable.

• Road cross-sections including road centerline at 50-foot intervals. The location of curbs, gutter lines, sidewalks and ditch centerlines.

• Intersecting streets shall be shown along with their names, accompanying topography, utilities and other improvements for at least 100 feet on each side of the intersection point.

• Existing contours shall be drawn to show abrupt elevation changes.

• Location, diameter, and species of all trees over an 8-inch diameter. Perimeter outline only of thickly wooded areas unless otherwise directed.

• Electric utilities – the location of power poles, guy wires, anchors, vaults, etc., within the right-of-way or project limits as defined by the District.

• Storm, sanitary or combined sewers – the location of all observable manholes and other structures such as culverts, headwalls, catch basins and clean-outs within road right-of-way. Include elevations of the top of manholes and catch basins. Show type, size, direction of flow and invert elevation of all pipes or culverts.

• Water – the location of any water valves, water line markers, standpipes, meters, regulators, fire hydrants, etc. that are visible within the road right-of-way.

• Gas – the location of all valves, meters, and gas line markers that are visible within the road right-of-way.

• Telephone – the location of all poles, manholes, boxes, etc. that are visible within the road right-of-way.

• Street lighting – the location of all lamp poles, boxes etc.

• Location of any existing buildings, tanks, fences, miscellaneous structures and driveways within the road right-of-way.

• The Surveyor shall provide the survey data in AutoCAD drawing format. All survey points shall consist of point number, elevation and point description.
DISTRICT STANDARD GENERAL NOTES
(Minimum Requirements)
(Engineer’s Notes May Be More Stringent)

1. Unless stated otherwise, all work is to be performed in accordance with the most current Washington State Department of Transportation (WSDOT) Standard Specifications for road, bridge and municipal construction and the District requirements as outlined in the District’s Water Policy Manual.

2. The contractor shall schedule a pre-construction conference with the District Engineering Department, (360) 424-7104, a minimum of 48 hours prior to construction.

3. All permits necessary for the installation of the proposed water system improvements will be the responsibility of the Developer, Engineer, or Contractor to acquire. A copy of the permit will be submitted to the District, prior to construction. All rights shall be granted to, or transferred to, the District.

4. All tie-ins, shutdown, flushing, and health samples shall be coordinated with the District. The contractor shall not operate any valves.

5. All materials are to be approved by the District prior to construction. A list of materials, indicating the manufacturer, model, and size, for the water system improvements will be submitted to the District and approved before any construction. Refer to District submittal requirements for details.

6. Ductile Iron pipe will be minimum class 50 AWWA C151 per WSDOT standard specifications 9-30.1 and 9-30.1(1). All Ductile Iron water pipe and fittings shall be completely wrapped with a minimum of eight-mil polyethylene pipe encasement and installed in accordance with AWWA C105 and WSDOT standard specifications 7-09.3(17) and 9-30.1(2).

7. All bolts used in buried flanges shall be ASTM A325 Type 3 (corten steel) unfinished, with nuts to ASTM A563C3 or A563DH3 and washers to ASTM F436-1. All bolts, nuts and washers used in exposed or above ground locations shall be ASTM/A307, hot-dip galvanized.

8. All gate valves to be resilient seated gate valves, AWWA C515 or C509 (ductile iron body only) with stainless steel nuts, bolts and trim.

9. All butterfly valves to be rubber seated butterfly valves, AWWA C504 with stainless steel nuts, bolts and trim.

10. Restrained joints may be used in place of concrete blocking as directed by the Project’s Design Engineer and accepted by the District.

11. Contact the municipal fire department or Skagit County Fire Marshal for acceptable fire hydrants and Storz adaptor fitting requirements.

12. A #10 solid copper wire with blue insulation is to be installed with/and attached to all new water pipelines and service pipelines. Refer to District Details for installation requirements.
13. Unless otherwise specified, all water pipeline installations require a 36-inch minimum cover and 48-inch typical trench depth to existing or future finish grade and a minimum of 1-foot vertical and 5-foot horizontal clearance between water pipeline and all other utilities unless otherwise specified. Water pipeline horizontal and vertical alignments are required to be staked on a maximum 50-foot interval, or as required by the District.

14. When installing water pipeline across existing or proposed sanitary sewer, a full length of pipe shall be installed with mid-span of the water pipe over the sewer. A minimum 10-foot horizontal separation and 18-inch vertical separation between water pipelines and sanitary sewer pipelines is required, unless an alternative proposal from the design engineer is submitted to and approved by the District.

15. Bedding material for the Ductile Iron pipe shall be select, native, granular material free from wood waste, organic material or other extraneous or objectionable materials and shall be a maximum size of 1 1/2-inches or approved pipe bedding per WSDOT Specification 7-09.3(9) and 9-03.12(3). Pea gravel and buckshot are not acceptable.

16. Backfill trenches in pavement areas with pit-run gravel compacted to at least 95 percent minimum density per WSDOT Specification 7-09.3(11). The contractor shall make all pavement repairs and perform all restoration.

17. Disinfection and flushing of the water pipelines are to be per WSDOT Specifications. Use dechlorination equipment when flushing or, with permission of the appropriate sewer utility, flush into sanitary sewer manholes. Do not flush into or allow chlorinated water to drain into any creek, wetland, or catch basin. The total estimated amount of water used for filling and flushing of the water pipeline is _____________________________________________.

18. All salvaged usable District owned materials are to be delivered to the District Office at 1415 Freeway Drive, Mount Vernon, or as directed by the District.

19. The utility locations marked on this map are approximate. The contractor is to verify actual location and depth prior to construction. Call the underground utility locate center at 800-424-5555.

20. All private fire sprinklers or private fire hydrant pipelines are required to be installed with a Washington State Department of Health (WSDOH) approved double check detector assembly(ies) or reduced pressure detector assembly(ies), with a Badger Recordall meter with a remote touch-read pad installed within 6-inches of the vault lid’s hinge and brass plugs in the test ports. The meter will be supplied by the District and will be included with the charges in the Work Order.

21. A Washington State approved reduced pressure backflow prevention assembly shall be installed at temporary pipeline connections between the existing pipelines and new water pipelines for filling and flushing of the improvements. The assembly shall have been tested and approved a maximum of every six months and the test report provided to the District. Before connection to the existing water system, all new water pipelines and repaired portions of/or extension to existing pipelines shall be adequately chlorinated and a satisfactory bacteriological report obtained. The District will connect all new pipelines to the existing system, unless the connections by the contractor are approved by the District.
22. Pressure test new pipeline, including fire hydrants and service lines as per WSDOT standards.

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Fire Hydrant Use Permit

Provisional permission is given to the undersigned to withdraw water from a fire hydrant located at ____________________________ for the period of ___________ to ___________ (not to exceed 90 days). By signing below, the customer agrees to pay the Public Utility District No. 1 of Skagit County (District) a $200 service deposit, $25 monthly use fee, and monthly water use charges, in accordance with the District’s Water Policy Manual. Local governments and Washington state agencies are not required to provide a deposit.

The customer agrees to call the District’s billing department to report the meter reading every 30 days, from the date this agreement is signed. Bills will be sent out monthly. If the customer does not report the meter reading, the District will estimate the usage and may terminate this agreement. In accordance with the District’s Water Policy Manual, late payments will result in fees and/or penalties and may also result in cancellation of this agreement, return of the meter, and delinquent accounts will be sent to a collection agency for payment.

Deposit refunds will be made within 10 business days after return of the meter and will be mailed to the billing address below. The closing balance and any charges for loss or damage to the meter will be deducted from the $200 deposit. If total costs exceed the amount of the deposit, the customer will be billed and agrees to pay in full. The customer agrees to pay the owner of the fire hydrant all costs for repairs to the hydrant as a result of damage caused by the customer.

The customer understands the temporary use of the hydrant meter is for no more than 90 days. The customer will return the meter at the end of 90 days. A one-time 90-day extension may be requested at that time (the meter must be returned for reading and calibration, regardless of whether an extension is requested). Additional extensions may be approved only by the District’s General Manager.

The hydrant meter is to be used only at the address identified above. The District reserves the right to limit any customer’s use when that use has, or will have, an adverse impact to the District’s obligations and responsibilities. A standard hydrant wrench and a District-issued meter assembly, with a gate valve placed on the 2½-inch port, are to be used when operating the hydrant. The hydrant shall be in the fully open position when in use, in order to avoid damage to the hydrant. Water flow shall be regulated by the gate valve on the meter assembly. The meter assembly shall be removed and the hydrant completely closed at the end of each day.

In exchange for permission to operate and obtain water from the hydrant at the location identified above, the Customer agrees to defend, indemnify, and hold harmless the District and its officers, directors, employees, and agents from and against all claims, costs, losses, and damages, including, but not limited to attorney and other professional fees arising out of, connected with, or resulting from, the connection to and for use of the District’s water under this agreement.

Comments ____________________________

Permittee Signature ____________________________ Date ____________________________

Printed Name ____________________________ Meter # ____________________________ Meter Read ____________________________

Company Name ____________________________ Phone # ____________________________ Security Device ☐

Billing Address ____________________________ Phone # ____________________________ Hose Bib Adaptor ☐

District Signature ____________________________ Date ____________________________

Date deposit was paid on ____________________________ Receipt # ____________________________

RETURNS AND EXTENSIONS

Date Meter Returned ____________________________ Meter Read ____________________________ Meter returned undamaged? Yes ☐ No ☐ Verified by ____________________________

Extension granted by ____________________________ Date ____________________________ Meter # _______ Read _______ Date to be returned _________

Date Meter Returned ____________________________ Meter Read ____________________________ Meter returned undamaged? Yes ☐ No ☐ Verified by ____________________________

Additional extension granted by ____________________________ General Manager ____________________________ Date ____________________________

Meter # _______ Read _______ Date to be returned _________

Date Meter Returned ____________________________ Meter Read ____________________________ Meter returned undamaged? Yes ☐ No ☐ Verified by ____________________________

REFUND OF DEPOSIT

Meter returned undamaged? Yes ☐ No ☐ Final bill paid in full? Yes ☐ No ☐ Amount to be refunded $ ____________________________

Billing Clerk ____________________________ Date ____________________________ Route Copy to Accounts Payable

cc: ☐ Customer ☐ Customer Service/Billing ☐ Fire District # _______ Notified _______
PUD UTILITY EASEMENT

THIS AGREEMENT is made this ________ day of ________________, 2013, between

hereinafter referred to as “Grantor(s)”, and PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT
COUNTY, WASHINGTON, a Municipal Corporation, hereinafter referred to as “District”. Witnesseth:

WHEREAS, Grantor(s) are the owners of certain lands and premises situated in the County of Skagit, and

WHEREAS, the District wishes to acquire certain rights and privileges along, within, across, under, and upon the said lands and premises.

NOW, THEREFORE, Grantor(s), for and in consideration of mutual benefits and other valuable consideration, receipt of which is hereby acknowledged, conveys and grants to the District, its successors or assigns, the perpetual right, privilege, and authority to do all things necessary or proper in the construction and maintenance of water, sewer, electrical, and communication lines and/or other similar public service related facilities. This includes the right to construct, operate, maintain, inspect, improve, remove, restore, alter, replace, change the size of, relocate, connect to and locate at any time pipe(s), line(s) or related facilities, along with necessary appurtenances for the transportation and control of water, sewer, electrical, and electronic information on facilities over, across, along, in and under the following described lands and premises in the County of Skagit, State of Washington, to wit:

Tax Parcel Number: Insert P# Here

(ENTER PARCEL’S LEGAL HERE)

on the easement described as follows (See Exhibit A – Easement Map):

(ENTER EASEMENT’S LEGAL HERE)
Grantor(s) authorizes the District the right of ingress and egress from said lands of the Grantor(s). The Grantor(s) also gives the District permission to cut, trim and/or remove all timber, trees, brush, or other growth standing or growing upon the lands of the Grantor(s) in the described easement for the purposes of the activities listed above, as well as the right to cut, trim and/or remove vegetation which, in the opinion of the District, constitutes a menace or danger to said pipe(s), line(s) or related facilities, and/or to persons or property by reason of proximity to the line. The Grantor(s) agrees that title to all brush, other vegetation or debris trimmed, cut, and removed from the easement pursuant to this Agreement is vested in the District.

Grantor(s), their heirs, successors, or assigns hereby conveys and agrees not to construct or permit to be constructed structures of any kind on the easement area without written approval of the General Manager of the District. Grantor(s) shall conduct their activities and all other activities on Grantor’s property so as not to interfere with, obstruct or endanger the usefulness of any improvements or other facilities, now or hereafter maintained upon the easement or in any way interfere with, obstruct or endanger the District’s use of the easement.

The Grantor(s) also agree to and with the District and warrant that the Grantor(s) lawfully own the land aforesaid, has a good and lawful right and power to sell and convey same, that same is free and clear of encumbrances except as indicated in the above legal description, and that Grantor(s) will forever warrant and defend the title to said easement and the quiet possession thereof against the lawful claims and demands of all persons whomever.

Any mortgage on said land held by a mortgagee is hereby subordinated to the rights herein granted to the District; but in all other respects the mortgage shall remain unimpaired.

In Witness Whereof, the Grantor(s) hereunto sets his hand and seal this __________ day of _______________, 2013.

________________________________________
Print Title

________________________________________
Signature

________________________________________
Print Name

(Individual)

STATE OF ____________________________  
COUNTY OF ____________________________
I certify that I know or have satisfactory evidence that is the person who appeared before me, and said person acknowledged that he/she signed this instrument and acknowledged it to be his/her free and voluntary act for the uses and purposes mentioned in the instrument.
Date: ____________________________
(Corporate, Partnership)

STATE OF ____________________________
COUNTY OF __________________________
I certify that I know or have satisfactory evidence that ____________________________
is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument,
on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the______
of ____________________________ to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

I certify that I know or have satisfactory evidence that __________ is the person who appeared
before me, and said person acknowledged that he signed this instrument, on oath stated that he was
authorized to execute the instrument and acknowledged it as______ of __________________________
to be the free and voluntary act for the uses and purposes mentioned in the instrument.

I certify that I know or have satisfactory evidence that __________ is the person who appeared
before me, and said person acknowledged that she signed this instrument, on oath stated that she was
authorized to execute the instrument and acknowledged it as______ of __________________________
to be the free and voluntary act for the uses and purposes mentioned in the instrument.

Date: ______________________________

Notary Public in and for the State of __________________________
My appointment expires: __________________________
Easements are granted to Public Utility District No. 1 of Skagit County, Washington, a Municipal Corporation, its successors or assigns, the perpetual right, privilege, and authority enabling the District to do all things necessary or proper in the construction and maintenance of a water, sewer, electrical, and communication lines and/or other similar public service related facilities. This includes the right to construct, operate, maintain, inspect, improve, remove, restore, alter, replace, change the size of, relocate, connect to and locate at any time pipe(s), line(s) or related facilities, along with necessary appurtenances for the transportation and control of water, sewer, electrical and electronic information on facilities over, across, along, in and under the lands as shown on this plat together with the right of ingress and egress from said lands of the Grantor(s). The Grantor(s) also gives the District permission to cut, trim and/or remove all timber, trees, brush, or other growth standing or growing upon the lands of the Grantor(s) in the described easement for the purposes of the activities listed above, as well as the right to cut, trim and/or remove vegetation which, in the opinion of the District, constitutes a menace or danger to said pipe(s), line(s) or related facilities, and/or to persons or property by reason of proximity to the line(s). The Grantor(s) agrees that title to all timber, brush, other vegetation or debris trimmed, cut, and removed from the easement pursuant to this Agreement is vested in the District.

Grantor(s), its heirs, successors, or assigns hereby conveys and agrees not to construct or permit to be constructed structures of any kind on the easement area without written approval of the General Manager of the District. Grantor(s) shall conduct its activities and all other activities on Grantor’s property so as not to interfere with, obstruct or endanger the usefulness of any improvements or other facilities, now or hereafter maintained upon the easement or in any way interfere with, obstruct or endanger the District’s use of the easement.
General Policy Statement
Where Skagit PUD is the water purveyor and there is new construction, a remodel, an addition, revised plumbing, a land division, or change of use on a property, a water service evaluation will be necessary to ensure compliance with current Skagit PUD water policies.

Water Service Availability
Upon receipt of a project proposal description, property identification (County Parcel Number), site plan, water usage demands and fire protection requirements, water service availability can be determined by Skagit PUD. Costs for water service and/or any water system improvements necessary for the project are to be borne by the customer/developer.

Water Meter Sizing
For water services other than for single-family residences, applicants are to submit to Skagit PUD a complete list of fixtures with their respective equivalent fixture unit values, and the minimum meter size necessary, based on the most current Uniform Plumbing Code (UPC). This can be completed by the applicants licensed architect, engineer or plumber. The portion(s) of the UPC (Chapter 6, Appendix A, etc.) used for fixture unit values and meter sizing is to be noted on the submittal, along with the preparer’s name, signature, license number and phone number. Any irrigation demand shall also be included in these calculations.

Skagit PUD offers a “deduct” meter to customers whose water usage is a factor in determining their sewer bill. A “deduct” meter is intended and available for irrigation of minor landscaping and other incidental uses that will not enter the local sanitary sewer system. A “deduct” meter is installed immediately downstream of the domestic meter and shall not be larger than the domestic meter. The demand to be served by a “deduct” meter shall be included in the calculation for sizing of the domestic meter.

New water services, two-inch and smaller, will include a “check valve” in the meter assembly. Any customer plumbing system provided with a check valve, backflow preventer or pressure regulating device which does not have a bypass feature at its source shall be provided, by the customer, with an approved, listed adequately sized pressure relief valve or a means to control expansion (typically being a combination pressure/temperature relief valve and a thermal expansion tank) to satisfy building regulations. Consult with a licensed plumber, the appropriate local building department, and the UPC (Uniform Plumbing Code) for the specific requirements.

Cross Connection Control
Under current state regulations, the water purveyor is to protect the public water system from contamination via cross-connections. The water purveyor’s responsibility for cross connection control begins at the water supply and ends at the point of delivery to the consumer’s water system, the water meter. The “Authority Having Jurisdiction” (e.g.; City, County) is responsible for cross connection protection within the consumer’s water system and property lines.

To protect the public water supply, Skagit PUD may require premise isolation of a facility. Appropriate planning should address the possible requirement of a Reduced Pressure Backflow Assembly (RPBA) or Double Check Valve Assembly (DCVA) to be installed immediately after any metered water service or fire service connection, now or in the future. DCVAs can be installed below ground with brass plugs in the test cocks. RPBAs are to be installed above ground with a minimum of 12-inches of clearance below the assembly to finish grade, and protected from freezing and abuse. If the RPBA is installed in an above ground enclosure, the enclosure must have a drain opening adequately sized to handle the maximum flow of the relief valve.

All backflow prevention assemblies are to be on the Washington State Approved List of Assemblies. Skagit PUD will require copies of the initial test(s) of the required backflow prevention assemblies and the owner will be responsible for subsequent annual testing and providing the test results to Skagit PUD.

Fire Protection
Contact the appropriate city or county fire department for fire protection requirements. Upon request, Skagit PUD can perform a computer generated hydraulic analysis of the existing water system to determine the available fire suppression flows to the development and to determine if water system improvements are necessary to obtain the required fire flow. Allow a minimum of one month for the analysis to be completed.

Project Plan Submittals
Please submit to Skagit PUD’s Engineering Department a complete set of civil, architectural, mechanical, plumbing and irrigation plans for review and cost estimating.

Coordination With All Jurisdictions
Skagit PUD encourages you to initiate discussion with the appropriate jurisdictions (e.g.; City, County, State) and Skagit PUD, early in your project design process to determine feasibility. Timeframes for obtaining certain permits and approvals can be lengthy.
WATER SYSTEM DRAWING REVIEW CHECKLIST
www.skagitpud.org

Project Name: ____________________________
Developer/Owner: ____________________________
Engineer: ____________________________
Work Order No.: ____________________________ Review: 1st 2nd 3rd
Reviewed by: ____________________________ Review Date: ____________________________

GENERAL INFORMATION:

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### WATER SERVICE AND BACKFLOW INFORMATION

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Every proposed water meter service – location, service size and material

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Fixture count and meter sizing – residential and irrigation

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Backflow Devices – Type, Size, Location

### PLAN AND PROFILE INFORMATION

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Plan and profile view of waterline on same sheet

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North arrow, Horizontal and Vertical scale

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Survey monuments and benchmarks

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All existing waterlines noted with District C.O. # and full year of installation

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Show nearest existing mainline valves and all existing meters

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Indicate waterline pipe size, material and length

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Station centerline of ROW beginning at STA 1+00, increase station from West to East, or from South to North.

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New waterline to be dimensioned to ROW, property lines, easements and/or nearest existing waterline

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Dimension format and fitting labels per District Standards

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Waterline to have 10’ horizontal and 18” vertical separation from sanitary sewer

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Waterline to have 5’ horizontal separation from storm sewer

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All utilities shown in plan view with conflicts and crossings shown in profile

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Show rim and invert elevations for all gravity lines, with pipe material noted

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Valves, fittings, connection types, air-vac valves, flushing assemblies, hydrants and services

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Restained pipe lengths, or thrust block location and size shown on drawings

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Show pipe elbows and/or deflections (angle or radius, beginning and endpoints)

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Indicate proposed road cross section

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Show all permanent structures (bridges, walls, etc)

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Show all trees and landscaping and check for conflicts with meters

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Show any soil borings with labels

☐ Revise and Resubmit
Dear Mr/Mrs/Ms. : 

At your request, the Public Utility District No. 1 of Skagit County (District) has reviewed your plans and specifications to meet the District’s required design standards and criteria, as outlined in the District Water Policy. An estimated cost for the District’s plan review, administration, (and) construction inspection (and connection work) of the water system improvements has been determined.

Enclosed are the reviewed plans and specifications showing the necessary changes. The plans and specifications are to be revised and resubmitted for the District’s final approval along with the reviewed set of plans. Five sets of approved plans and specifications are to be provided to the District prior to start of construction. A set of plans indicating approval of the fire hydrant locations from the [Mount Vernon, Sedro Woolley, Burlington or Skagit County Fire Marshals and County Road Permit] is also to be provided.

The current standard service design and bill of materials do not allow for the installation of a residential fire sprinkler system. If a residential fire sprinkler system is required, or desired, then the service line size, the meter location and the bill of materials will need to be reviewed and possibly revised by the District.

A private contractor will construct the water system improvements and the District will inspect the construction (and make the connections to the existing water system), as shown on the plans. The estimated cost for the District’s plan review, administration, (and) construction inspection (and connection work) is $_________00. The inspection
cost is based on _____ hours of construction to complete the installation of the water system improvements.

The enclosed Work/Job Order Authorization form is to be signed by the owner/developer and returned to the District at the time you wish to proceed, along with the deposit of the estimated cost amount indicated above. The individual signing the Work/Job Order Authorization form is also to be the individual providing the deposit.

In addition to the estimated Work/Job Order cost, a System Development Fee (SDF) and a service installation fee are required for each metered water service. If the metered water service(s) is installed by the developer’s private contractor during the mainline installation, the service installation fee may not be necessary.

**(TYPE I)**

- Present fees for Type-I **standard** metered water services are as follows:

<table>
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<tr>
<th>Size</th>
<th>Service Fee</th>
<th>SDF*</th>
<th>Total</th>
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<tr>
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<td>$1,280.00</td>
<td>$4,005.00</td>
<td>$5,285.00</td>
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<td>3/4-inch</td>
<td>$1,335.00</td>
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<td>$7,345.00</td>
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<td>1-inch</td>
<td>$1,360.00</td>
<td>$10,015.00</td>
<td>$11,375.00</td>
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*SDF = System Development Fee

**(TYPE II)**

- Present fees for Type-II **standard** metered water services are as follows:

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<th>Size</th>
<th>Service Fee</th>
<th>SDF*</th>
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<tr>
<td>5/8-inch</td>
<td>$515.00</td>
<td>$4,005.00</td>
<td>$4,520.00</td>
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<tr>
<td>3/4-inch</td>
<td>$575.00</td>
<td>$6,010.00</td>
<td>$6,585.00</td>
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<tr>
<td>1-inch</td>
<td>$600.00</td>
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*SDF = System Development Fee
(TYPE III)

- Present fees for Type-III standard metered water services are as follows:

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<th>Size</th>
<th>Service Fee</th>
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<tr>
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<td>$320.00</td>
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<td>3/4-inch</td>
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<td>$375.00</td>
<td>$10,015.00</td>
<td>$10,390.00</td>
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*SDF = System Development Fee

The District shall adjust the SDFs on January 1 of each year. Upon request, fees for metered water services larger than 1-inch can be determined by District personnel.

For new water services, 2-inch and smaller, a dual check valve will be included in the meter assembly. The check valves will create a closed pressure zone within the customer’s plumbing system. Installation and maintenance of a thermal expansion tank and pressure/temperature relief valve are necessary to satisfy building regulations. Consult with a licensed plumber, the appropriate local building department, and the Uniform Plumbing Code for the specific requirements.

For water services other than for single-family residences, applicants are to submit a complete list of fixtures with their respective equivalent fixture unit values, and minimum meter size necessary, based on the most current Uniform Plumbing Code (UPC). Irrigation demand shall also be included in these calculations. This can be completed by the applicant’s licensed architect, mechanical engineer or plumber. The portion(s) of the UPC (Chapter 6, Appendix A, etc.) used for fixture unit values and meter sizing is to be noted on the submittal, along with the preparer’s name, signature, license number and phone number.

*The District offers a deduct meter to customers whose water usage is a factor in determining their sewer bill. A deduct meter is intended and available for irrigation of minor landscaping and other incidental uses that will not enter the local sanitary sewer system. A deduct meter is installed immediately downstream of the domestic meter and shall not be larger than the domestic meter or 1-inch. The current Type 2 installation fee for a 5/8-inch deduct irrigation meter is $______00, a 3/4-inch deduct irrigation meter is $______00, and $______00 for a 1-inch deduct irrigation meter. Deduct meters do not require a SDF. Deduct meters currently have a meter reading charge of $2.55 per month.

*The cost for metered water services 1 1/2-inch and larger is based on the actual cost of materials, labor and equipment to install the service, plus the SDF. An estimated cost for
a metered water service installation, 1 1/2-inch and larger, can be determined by District personnel upon request. The fees would be due upon application for each service.

The District requires a Water Contract for each new meter with a weighting factor of 8 or more (2-inch and larger), or group of meters (regardless of size) whose weighting factors sum 8 or more, as outlined in the District Water Policy. The applicant’s projected usage capacity information in the form of maximum intermittent & continuous demands in gallons per minute and maximum day, month & annual usage in gallons is to be submitted for approval. Upon receipt of projected usage capacity information, determination of the size and type of meter(s), District approval, and the name(s) and title(s) of the individual(s) responsible for signing the document, the District will prepare an original Water Service Contract document (draft copy enclosed). The Water Service Contract must be signed in front of a Notary Public and received and signed by the District, along with the required System Development Fee, prior to any water usage through the service(s). The Water Service Contract will be recorded with the Skagit County Auditor’s office and a copy of the recorded document will be available to the applicant for their records.

Due to instances of damage to District water plant by workers performing other work for developers, the District requires each developer to sign a Developer’s Agreement that guarantees compensation for repairs to damaged water plant caused by the developer or his contractors. The enclosed agreement is to be completed and returned to the District before construction of the water system improvements begins.

A District inspector is to be on site during all work on the proposed water system. If the contractor installs any water facilities without the inspector present or without approval of the inspector, the water facilities may be rejected or required to be exposed for inspection.

The street sub-grade is to be established and completed where the water facilities are to be installed. In addition, the sanitary and storm sewer pipelines are to be installed and their trenches thoroughly compacted, before installation of the water facilities. The water facilities are to be installed before installation of the gas pipelines and wire utilities.

The water facilities are to be accurately surveyed for alignment and grade and staked with offsets by the developer’s surveyor on a maximum of 50-foot intervals. Staking of additional finish grades may be required, as directed by the District. Temporary lot corners are to be staked for installation of the water service stubs.

Connection of the proposed water system improvements to the District’s existing water facilities is to be coordinated with the District’s Inspector. The developer’s private
contractor will be responsible for all excavation, shoring, dewatering, traffic control, concrete thrust blocking, backfill, compaction and surface restoration work necessary for the District’s connection work as indicated on the plans.

Currently, the static water pressure within the proposed development is approximately ___ to ____ pounds per square inch (psi). The water pressure is calculated on a hydraulic grade line of __ feet above mean sea level (AMSL). Pressure over 80 psi is considered higher pressure and the Uniform Plumbing Code states an approved pressure reducing valve preceded by an adequate strainer along with a pressure relief valve be installed on the customer’s private plumbing system and the pressure be reduced to a maximum of 80 psi within the plumbing system.

Pressure below 40 psi is considered lower pressure and is less than most people prefer. The customer may wish to consider installation of a booster pump with a low-pressure cut-off switch, pressure tank and pressure relief valve on their private plumbing system and/or over-sizing the pipeline and household plumbing.

The current Washington Administrative Code (WAC) 246-290-490, states the water purveyor is to protect the public water system from contamination via cross connections. The water purveyor’s responsibility for cross connection control begins at the water supply and ends at the point of delivery to the consumer’s water system, the water meter. Under RCW 19.27, the Administrative Authority (building department) is responsible for cross connection protection within the consumer’s water system and property lines.

To protect the public water supply, the District may require premise isolation of a facility based on the highest potential health risk from potential or actual onsite cross connection and/or within the building. Appropriate planning should address the possible requirement of a Reduced Pressure Backflow Assembly (RPBA) or Double Check Valve Assembly (DCVA) to be installed immediately after any metered water service or fire service connection, now or in the future. DCVAs can be installed below ground with brass plugs in the test cocks. RPBA are to be installed above ground and protected from freezing and abuse and with a minimum of 12-inches of clearance below the assembly to finish grade. If the RPBA is installed in an above ground enclosure, the enclosure must have a drain opening adequately sized to handle the maximum flow of the relief valve.

The District’s Cross connection Control Coordinator has reviewed the project plans for cross connection concerns and has the following comments:

1. **Domestic Water Service.**
   A. The District is requiring premise isolation on the domestic water service due to the potential health risks from cross connection onsite and within the buildings. A Reduced Pressure Backflow Assembly (RPBA)/Double Check Valve Assembly
(DCVA) is required to be installed immediately after the domestic meter. The RPBA is to be installed above ground with a minimum of 12-inches of clearance below the assembly to finish grade and protected from freezing and abuse. If the RPBA is in an above ground enclosure, the enclosure must have a drain opening adequately sized to handle the maximum flow of the relief valve. A DCVA can be installed in a below ground vault, with brass plugs in the test ports.

B. If items (a) & (b) below are satisfactorily addressed, the District will not require premise isolation on the domestic water service at this time. If premise isolation is required now or in the future, the necessary backflow assembly is to be located immediately after the water meter.
   a) If **Boilers and/or single wall heat exchangers** are installed the District will require premise isolation with a RPBA.
   b) If **sewage pumps** are installed on site the District will require premise isolation with a RPBA.
   c) **Floor drains.** If trap primer valves are installed, they require an “approved air gap”. Air gaps must be vertically oriented with a distance of at least twice the inside diameter of the inlet pipe, but never less than one inch. Trap primer valves with an internal air gap may **not** meet the requirement of an “approved air gap”. An approved air gap fitting may be available from the trap primer valve manufacturer or an approved air gap can be plumbed. Approved air gaps are to be accessible for yearly inspection. If an approved air gap is not installed the District will require premise isolation with a RPBA.
   d) **Hose bibs and mop/service sinks** with threaded outlets require an Atmospheric Vacuum Breaker (AVB). If AVBs are not installed the District will require premise isolation with a DCVA.
   e) No **other items of concern** were found during the District’s initial review of the plans submitted. If plans are revised, there are plumbing changes during construction, or further review and inspection raise other cross connection items of concern, they will need to be addressed prior to providing water service. Premise isolation with a RPBA may be necessary.

2. **Deduct Irrigation Meter.** A DCVA is required to be installed immediately after the meter. A DCVA can be installed below ground with brass plugs in the test ports. If the irrigation system has chemical injection, a RPBA will be required. The RPBA is to be installed above ground and protected from freezing and abuse.

3. **Fire Service.**
   A. A Double Check Detector Backflow Assembly (DCDA) for the fire sprinkler system is to be installed within a below ground vault near the property line with brass plugs in the test ports. The assembly will require a Badger Recordall meter, supplied by the District, reading in cubic feet, with the remote read transmitter installed within 6-inches of the hinge side of the vault lid. The
contractor is to coordinate with the District for inspection of the DCDA and connection to the public water system.

B.  

a) If chemical additives are used in any portion of the fire protection system, a Reduced Pressure Detector Assembly (RPDA) is required in lieu of a DCDA. RPDA’s are to be installed above ground with a minimum of 12-inches of clearance below the assembly to finish grade, and protected from freezing and abuse. If the RPDA is installed in an above ground enclosure, the enclosure must have a drain opening adequately sized to handle the maximum discharge rate of the relief valve.

b) A Double Check Detector Assembly (DCDA), which is to be located at the property line, within a below ground vault, is required to be installed on the fire sprinkler system. The assembly is to be installed with a Badger Recordall meter, reading in cubic feet, with the remote read transmitter installed 6-inches from and on the hinge side of the vault lid. Brass plugs in the test cocks are also required. The meter will be supplied by the District and be included in the charges on the Work Order.

Contact the authority having jurisdiction (Skagit County, MV, SW, or Burlington Building Department) for their cross connection requirements for the water system within the facility.

Prior to any water usage, the District will inspect the facility for other unforeseen cross connection items of concern.

All backflow prevention assemblies are to be on the Washington State Approved List of Assemblies. District inspection of the installed assemblies will be necessary. The assemblies are to be tested by a Washington State Certified Backflow Assembly Tester (BAT) and copies of the test reports submitted to the District. The building owner will be responsible for following annual testing and providing the test results to the District.

Please submit a complete set of architectural, mechanical, plumbing and irrigation plans for review of any cross connection concerns. After review, any backflow prevention requirements will be forwarded to you, the (Mount Vernon, Burlington, Sedro Woolley, Skagit County) building authority and the developer/engineer.

Upon request, the District can perform a computer generated hydraulic analysis of the existing water system to determine the available fire suppression flows to the development and to determine if water system improvements(s) are necessary to obtain the required fire flow. Please provide the Fire Marshal’s fire flow requirement for the analysis. Allow a minimum of one month for the analysis to be completed.
Private fire sprinkler systems, installed by a licensed private contractor, are to be inspected by a District representative during installation from the connection point to the District’s system up to and including the backflow prevention assembly. Upon completion of the private fire pipeline, it is to be pressure tested, flushed and a satisfactory health sample(s) taken. Please allow 48 hours notice to schedule an inspector for the installation work, witness the pressure test and take the health sample. The developer is to supply the health sample bottle(s) and the inspector will collect the actual sample(s).

The contractor installing the private fire pipeline to the building sprinkler system is to contact the local fire department for their requirements. The contractor is to contact the District and the (Skagit County, MV, SW, Burl) Fire Marshal before pressure testing and hydro-flow testing the private fire pipeline.

The fire service will be subject to a charge for standby water for fire protection. Currently the monthly charge for a _-inch fire service is $___________.

A hydraulic analysis of the District’s existing distribution system was performed, at a location ____________________________, to determine its capacity to support fire suppression flows, using a computer-generated hydraulic model of the distribution system, assuming peak hour demands and a fully functional distribution system. The results of the analysis are:

1. _____ psi static pressure.
2. _____ psi residual pressure at _____ gpm.
3. _____ psi residual pressure at _____ gpm.
4. _____ psi residual pressure at _____ gpm.

Also, please find enclosed a two page completed fire suppression flow capacity form with the results of the analysis.

The fire suppression flow of _____ gpm is limited by (a minimum of 20-psi residual pressure/water velocity) within the water distribution system, which is located ___________ of the Development. This fire flow would result in water velocity in pipelines exceeding the District’s design requirements and could cause a catastrophic failure of the water lines due to surge pressures, would violate the District’s development regulations and is in no way endorsed by the District. See the attached Statement of Fire Suppression Flow Capacity.

In the District’s endeavors to meet capacity and pressure requirements within the water distribution system, and to provide for future system demands, as outlined in the District Water Policy, the District has determined that it is in the District’s best interest for the
The proposed pipeline on ___________________________ to be upsized from the customers/developers required size of 8-inch pipe to ___________ -inch, as shown on the plans. Therefore, the developer is required to assume the cost to install a(n) ___________ -inch pipeline and the District agrees to pay the developer the materials cost difference between ___________ -inch and ___________ -inch materials which is estimated to be $_________________________ .00. Prior to construction, the enclosed Water Pipeline Upsizing Agreement is to be completed and returned to District for the General Manager’s signature. A copy will be returned for your records.

An Environmental Checklist is to be completed for the installation of all water pipelines over eight (8)-inches in size. The applicant’s consultant and/or private engineer is to prepare an Environmental Checklist for submittal to the lead agency for review. The District may be the lead agency, if the Environmental Checklist is to be prepared for the water pipeline(s) only. If an Environmental Checklist is to be prepared for the project, the following statements should be provided to the Lead Agency for inclusion in their Environmental Checklist prior to issuance of their Threshold Determination for the project:

- **Environmental Health.** During the construction phase, any new water pipeline(s) will be disinfected with a chlorine solution. All chlorinated water must be neutralized prior to discharge. The disinfectant water and chlorinated potable water, if discharged in sufficient quantities, may be deleterious to aquatic life.

- **Utilities.** All water pipelines are sized to provide adequate water volume for domestic and/or fire flow requirements and may require installation of a water pipeline in excess of eight (8) inches in diameter.

The District requires contractors installing water system improvements to be licensed and bonded within the State of Washington, and a copy of their license is to be submitted to the District prior to construction. The contractor is to submit a certificate of insurance to my attention, showing Public Utility District No 1 of Skagit County, Post Office Box 1436, Mount Vernon, Washington 98273, as the certificate holder and additional insured with respect to ___________________________ and with minimum amounts as indicated on the enclosed example.

A list of materials, indicating the manufacturer, model, and size to be used in the installation of the water system improvements is to be submitted to the District for approval before construction.
All permits necessary for the installation of the proposed water system improvements will be the responsibility of the developer, engineer, or contractor to acquire and submit copies to the District, prior to construction. *The WSDOT/BNSF Railroad permit shall be prepared by the engineer, in the District’s name, and signed by a District representative.*

*A standard refund agreement will be completed which may provide for some refund of your water pipeline investment if other lateral connections are made to the pipeline extension which the owner/developer financed. The agreement would be for a 10-year period. A customer/developer shall not be eligible for latecomer refunds for land they owned at the time of the water main installation. The amount of the refund and total fees to be collected for other connections will be determined upon completion of the project. Enclosed is a copy of the District’s standard refund agreement form.*

The following items are required to be completed before construction can begin as outlined in the District Water Policy:

1. Receipt of the enclosed, signed Work Order Authorization form.
2. Receipt of the enclosed, signed Developer’s Agreement form.
3. Deposit of the estimated cost.
4. District’s stamp and signature approving the water pipeline plans.
5. Fire Department hydrant location approval.
6. Submittal of _____ five _____ sets of approved construction drawings.
7. Certificate of insurance.
8. Copy of Contractor’s License.
11. Pre-construction conference.
12. Third party easements.

Upon completion of construction, the following items are to be completed prior to acceptance of the proposed water improvements. Allow a minimum of two weeks from the completion of the following items until the time the project is accepted. Services for your project cannot be purchased or activated until the District Commission accepts the project.

1. A minimum of a 20-foot wide **Easement** (as shown on the plans) is required for installation of the public water pipeline across private property. The easement legal description is to be provided by the project’s engineer and submitted to the District for preparation of the easement document. The easement document will be forwarded to you for notarized signatures and is to be returned to the District for recording. A copy of the recorded document will be provided. Alternatively, the easement location and enclosed easement statement can be shown on the
face of the recorded plat. A copy of the recorded plat is to be provided to the District.

2. A **Bill of Sale** is to be completed to transfer ownership of the water system improvements to the District. The District will prepare the Bill of Sale for the owner/developer’s signature(s) after submittal of an itemized list of materials installed, showing item, quantity, unit price and cost, along with a lump sum cost for labor and equipment and the cost for engineering of the water system.

3. The **As-Built** information is to be compiled on a final set of drawings, stamped and signed by an engineer licensed in the State of Washington. They shall be either on a clear top quality photocopy Mylar or on a Computer Disk (CD-R), with a paper copy. A drawing submitted on a CD media shall be in AutoCAD R2010.dwg format, and archived with all x-references, including the title block and borders being a permanent part of the drawing. Drawings submitted in “Plot” format (.plt) are not acceptable.

4. A **Water Service Contract** is enclosed for your signature.

5. A **Backflow Assembly Test Report(s)** will be submitted.

6. The amount of the **Maintenance Bond** will be based on a percentage of the full installed value of the water plant as stated in the District Water Policy. Enclosed are a standard Maintenance Bond, Deposit in Lieu of a Maintenance Bond and an Irrevocable Letter of Credit in Lieu of a Maintenance Bond either of which you can use.

7. Enclosed is a **Maintenance Agreement for Governmental Agency**. It is required in an amount equal to the full installed value of the water plant. The Maintenance Agreement will be in effect for a one year from the date of project acceptance by the District Commission. Please let me know if the contractor is responsible, as this would require a different type of Maintenance Agreement.

The estimated costs herein may be revised, if necessary, to reflect changes in costs and fees at the time you wish to proceed. After final accounting of the work, the owner/developer will be billed additional costs incurred or refunded the unused balance of the deposit.

The comments in this letter are based on information available at the time of writing. Modification to the water system or policy change can make the information provided outdated. A re-evaluation of the comments is necessary one year after the date of this letter.

It is recommended the District be provided with as much lead-time as possible for final plan review to avoid lengthy delays.

Please distribute this letter to all parties involved.
If you have any questions or I can be of further assistance, please contact me.

Sincerely,

Engineer
Title

(Secretary’s initials)

Enclosures

cc: Developer
Contractor
District Inspector
Lorna Parent, Skagit County Department of Health
Becky Zorn, Cross Connection Control Coordinator
Building Department (Skagit County, MV, SW, Burlington)
Fire Marshal (Skagit County, MV, SW, Burlington)
hereinafter referred to as the "Developer", acknowledges awareness of certain water mains and other water plant facilities located within and adjacent to the boundaries of the property being developed by the Developer, known as

DEVELOPMENT

in Skagit County, Washington. These lines are owned, or are intended to be owned after completed construction, by PUBLIC UTILITY DISTRICT NO 1 OF SKAGIT COUNTY, WASHINGTON, hereinafter referred to as the "District".

The Developer certifies that final grade has been established throughout the construction area of the above development. The Developer accepts financial responsibility to re-locate the water lines vertically and/or horizontally if grades are changed.

Also, the Developer agrees that, if any damage or imminent impairment to water plant is caused by Developer, his employees or independent contractors in the construction contemplated by the Developer, the Developer will pay within thirty (30) days of the submission of billing for repair or replacement of facilities so damaged. If such payment is not made within said time limit and District is compelled to bring suit to collect said amount, Developer agrees to pay all court costs and reasonable attorney's fees.
WATER SERVICE CONTRACT

This Contract is entered into this ______ day of ______________________, 2013, between Public Utility District No. 1 of Skagit County, hereinafter referred to as the “District“ and _____________________________ or its successor or assigns, hereinafter referred to as the “Applicant“.

The Applicant is entering into this Contract to secure a water service(s) for the property located at ________, Washington. The parcel is located in the ___________ 1/4 of Section _____, Township _____ N, Range _____ E, under Assessor’s Tax Number ______________________, Parcel Number _______. The District owns and operates a water distribution system at the location of the proposed service(s) and is willing to supply water to the Applicant under the following terms and conditions:

1. The District’s Water Policy Manual, Section 4.2 (or its successor) requires a Water Service Contract for all new water meters serving a property, when the summed weighting factor of the meter(s) is 8 or more. Said Water Policy Manual also requires the Applicant’s projected capacities [flow rate(s) and usage] be listed herein (a copy of the current Water Policy Manual, Section 4.2, has been provided to the Applicant and its terms and conditions are incorporated herein by this reference).

2. Meter installation costs. The Applicant shall be responsible for paying all costs associated with installing water services to the District system as required by the District Water Policy Manual, Appendix A, Table A-8.

3. System Development Fee (SDF): The District and the Applicant agree that the Applicant has the following meter(s) that all serve this property:

<table>
<thead>
<tr>
<th>Meter size &amp; type</th>
<th>Weighting Factor (*)</th>
<th>Projected Maximum Continuous &amp; Intermittent Flow Rates</th>
<th>Projected maximum daily, monthly &amp; annual usage</th>
<th>SDF</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-inch compound</td>
<td>50</td>
<td>____ gpm continuous ____ gpm intermittent</td>
<td>Maximum day demand: ____ gallons.</td>
<td>$117,500.00</td>
</tr>
</tbody>
</table>

(*) = from District Water Policy Manual Section 4.2

Based on the cumulative weighting factor(s) or meter size(s) and the projected capacities identified above, the Applicant agrees to pay a SDF of $____________________.00.
The District may review usage history as needed. If any projected capacity is not put to beneficial use within any 36-month period after contract execution, Applicant agrees that the District has the right to reduce authorized capacity(ies) to the maximum during that three-year period plus ten percent (10%). District will notify Applicant within 90 days of capacity changes, and will record the notification as an amendment to this Contract in accordance with item # 11 below. The District will automatically review usage history every three years for the same.

If Applicant desires an increase in any of the capacities listed in this Contract, as amended, Applicant agrees to contact the District, no less than 120 days before added capacity is needed, to request District approval, and if approved, shall be documented in accordance with item # 11 below.

Per Water Policy Manual Section 4.2, if the Applicant’s use through any contract meter exceeds any listed capacity, the District reserves the right to require the Applicant to modify the use to those listed in the Water Contract. If the Applicant has not modified the use through that meter(s) to those listed in the Water Contract within 120 days of the notice requesting the modification of use, the Contract will be amended in writing, in accordance with item # 11 of this contract, and the Applicant will be responsible for any mitigation deemed necessary. Mitigation shall be determined by the District, and may include, but is not limited to, additional charges and/or water system improvements including all associated costs. In consideration for approval of the initial service and as a condition of continued service, Applicant specifically agrees, covenants and contracts to pay any additional charges and/or water system improvement costs when charged. In the event Applicant fails to pay the additional charges and/or water system improvement costs as set forth herein when due, the District shall terminate service under this Contract.

4. Each meter serving other than a single family residence shall be selected: (1) based on the sizing requirements of the most recently adopted IAPMO Uniform Plumbing Code, (2) to have an annual usage of not more than fifty percent (50%) of the safe maximum operating capacity of the meter per year, and (3) if the proposed use generally has a pattern of continuous flow (a relatively consistent flow for six hours or more), to flow not more than 50% of the safe maximum operating capacity of the meter during such periods of continuous flow. The safe maximum operating capacity rating shall be per American Water Works Association (AWWA) Standards for each type and size of meter. If an AWWA Standard does not exist for a certain type and size of meter, the District shall determine the rating.

5. The cost of water shall be at the current water rate schedule at the time of each billing.

6. The District shall not be liable to the Applicant or the Applicant’s agent(s) for damages, breach of Contract, or for interruption of service or curtailment of supply for any cause. The Applicant shall hold the District harmless from any claim for damages by third parties, to the extent that the claim arises out of Applicant’s negligence.

7. The Applicant agrees that if problems arise related to water system source capacity or hydraulics, water for irrigation or other non-domestic demands can be limited or discontinued. Water for irrigation is recommended during, and may be limited to, “off peak” hours of 10:00 PM to 5:00 AM each day, or such hours as the District may prescribe. The Applicant agrees to adhere to such limitations or recommendations as a condition of service.

8. The Applicant recognizes that all water will contain chlorinous compounds which are dangerous to aquatic life. Depending on hydraulic flows within the distribution system, pH levels may exceed 10. The Applicant shall pursue, with reasonable diligence, the protection of aquatic life onsite and offsite of the Applicant’s property and, upon failure to do so, shall hold the District harmless from any damages arising therefrom.

9. Water quality may vary in the future due to the result(s) of the Federal Safe Drinking Water Act or other requirements.
10. The Applicant agrees to install and to maintain a backflow prevention assembly approved for installation in Washington State on all irrigation service(s) and on such other water service(s) as may be required by the District and State/federal health authorities. The type and model of assembly(ies) necessary must be approved by the District.

11. Compliance with this Contract shall be a condition of service through this meter(s) and shall be binding upon Applicant’s successors or assigns. Increases in water volumes, meter sizes, meter quantities, and other material changes in water demand or ownership data shall be documented in a written amendment(s) to, or rewriting of, this Contract.

12. Applicant non-compliance with this Contract shall result in cancellation of service.

13. All or part of this Contract may be superseded, deleted, or enhanced by future District regulations.

This Contract and all disputes arising hereunder shall be governed by Washington State Law. Venue shall be in the Superior Court of the State of Washington for Skagit County. In any action hereon the prevailing party, in addition to other remedies, shall be entitled to actual costs and attorney fees.

IN WITNESS WHEREOF, the Parties hereto have executed this Contract effective the day and year first above written.
APPLICANT’S NAME HERE

______________________________

STATE OF ________________________
COUNTY OF ________________________

(Corporate, Partnership)

I certify that I know or have satisfactory evidence that ____________________________ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the _________ of ____________________________ to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

I certify that I know or have satisfactory evidence that ___________ is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as ________ of ____________________________ to be the free and voluntary act for the uses and purposes mentioned in the instrument.

Date: ____________________________

Notary Public in and for the State of ____________________________
My appointment expires: ____________________________

STATE OF WASHINGTON
COUNTY OF SKAGIT
I certify that I know or have satisfactory evidence that Robert B. Powell is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated he was authorized to execute the instrument and acknowledged it as the General Manager of Public Utility District No. 1 of Skagit County to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Date: ____________________________
Notary Public in and for the State of Washington
My appointment expires:____________________
PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY

WORK/JOB ORDER AUTHORIZATION

Work Order No. ____________________________
Job Order No. ____________________________
Construction Order No. ____________________

Within PTBA (SKAT)  □ YES  □ NO

PROJECT NAME:

TYPE TITLE HERE IN ALL CAPS

Description of work to be done: _______________________________________________________

.................................................................................................................................

Work Order Estimated Cost  $ 0.00
Job Order Estimated Cost  $ 0.00
System Development Fee  $ 0.00

Project’s Estimated Cost  $ 0.00

Customer Name: ________________________________________________________________
Mailing Address: ___________________________________________________________________
City, State, Zip: ___________________________________________________________________
Daytime Telephone No.: ____________________________________________________________

Upon receipt and in consideration of the project's estimated cost of $ __________________, Customer hereby authorizes Public Utility District No. 1 of Skagit County to schedule and perform the above-described work.

Customer agrees that if any damage, impact, or imminent impairment to District property is caused by Customer, customer’s employees, independent contractors, subcontractors or any other person acting as customer’s agent during the construction of this project, Customer will pay for any necessary repairs or replacement of property so damaged.

Customer understands that all project tasks and costs herein are estimated only. Customer also understands that the final actual project cost may be lower or higher than the District estimate. After final accounting of the work, Customer understands that any additional costs incurred will be billed or any unused funds previously received as consideration will be returned to the Customer.

If it is necessary for the District to bill the Customer, Customer agrees to pay in accordance with the District’s billing policy. Customer also agrees to pay any additional fees that the District may incur should the collection process be necessary. Customer agrees water may be terminated for non-payment.

Date

Printed Name

Printed Title

Barbara Barthel # 114
Engineering Technician

Signature of Customer
WORK/JOB ORDER AUTHORIZATION FOR GOVERNMENTAL AGENCY

Work Order No. ____________________________
Job Order No. ____________________________
Construction Order No. ____________________________

Within PTBA (SKAT) ☐ YES ☐ NO

PROJECT NAME:
TYPE TITLE HERE IN ALL CAPS

Description of work to be done: __________________________________________

____________________________________

Work Order Estimated Cost $ 0.00
Job Order Estimated Cost $ 0.00
System Development Fee $ 0.00
Project’s Estimated Cost $ 0.00

Customer Name: _______________________________________
Mailing Address: _______________________________________
City, State, Zip: _______________________________________
Daytime Telephone Number: ________________________________

Upon the District’s receipt of Work/Job Order Authorization, the Governmental Agency authorizes Public Utility District No. 1 of Skagit County to schedule and perform the above-described work and to bill them, upon completion, for the work performed.

Customer agrees that if any damage, impact, or imminent impairment to District property is caused by Customer, customer’s employees, independent contractors, subcontractors or any other person acting as customer’s agent during the construction of this project, Customer will pay for any necessary repairs or replacement of property so damaged.

Customer understands that all project tasks and costs herein are estimated only. Customer also understands that the final actual project cost may be lower or higher than the District estimate. After final accounting of the work, Customer understands that any additional costs incurred will be billed.

The customer agrees to pay in accordance with the District’s billing policy. Customer also agrees to pay any additional fees that the District may incur should the collection process be necessary.

_____________________________________
Date

_____________________________________
Printed Name

_____________________________________
Printed Title

_____________________________________
Signature of Customer
PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY
UTILITY MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That Principal and Surety executing this Bond are held and firmly bound unto the Public Utility District No. 1 of Skagit County, State of Washington ("District"), in the penal sum of $________________________/100 Dollars ($_____________.00) for the payment of which Principal and Surety bind themselves and their heirs, executors, administrators, successors and assigns, all jointly and severally, by these presents.

WHEREAS, Principal has undertaken the installation of facilities described as __________________________ (C.O. # ____ ; W.O. # _____ - ______) in full compliance with the District’s standard plans, specifications and standards which the District Engineering Manager has determined to be substantially complete as of Tuesday, _________________, 20__.

NOW, THEREFORE, if Principal shall maintain and repair said facilities free from defects in materials or workmanship for a period of not less than one (1) year after the date of acceptance of the facilities by the District’s Commission, then this obligation shall be null and void, otherwise to remain in full force and effect.

EMERGENCY REPAIRS:
If in the opinion of the District Engineering Manager, a condition exists which affects life and/or property requiring repair(s) of an emergency nature which preclude prior notification of Principal, the District Engineering Manager shall cause such work to be done with all reasonable dispatch, and notify Principal as soon as practicable of the nature and cost of said emergency repairs. Principal and Surety shall reimburse the District for the costs of any such emergency repairs within thirty (30) days of receipt of invoice from the District therefore.

NON-EMERGENCY REPAIRS:
Non-emergency maintenance and repair(s) shall be promptly performed by Principal upon receipt of written notice from the District Engineering Manager directing the performance of such work. Such notice shall also be sent to Surety. If Principal fails to commence work within seven (7) calendar days of such notice, the District may perform the work at the expense of Principal and/or Surety.

One (1) year after the date of acceptance of the facilities as indicated above, the District shall inspect subject facilities. If subject facilities are in a condition satisfactory to the District Engineering Manager, then this obligation shall be void; otherwise, the District shall give notice to Principal and Surety of necessary maintenance and repair and, in such case, this Bond shall remain in full force and effect until the facilities are finally accepted in writing by the District Engineering Manager.

In the event that Principal and/or Surety fail to perform non-emergency repair(s) or maintenance pursuant to notice from the District, and the District, through its own employees or through contract of services, shall perform the repair(s) or maintenance required, Principal and Surety do hereby agree to reimburse the District for all costs incurred by the District in completion of said work and do further agree to pay an additional sum to the District equal to such District’s expenses which shall be stipulated to reimburse the District for its general and administrative expenses to enforce the conditions of this Bond. Principal and Surety do hereby further contract and agree that the prevailing party in any litigation arising out of or relating to this Utility Maintenance Bond shall be awarded its Attorneys’ fees and all costs (whether or not otherwise recoverable by statute or Court Rule) incurred in such litigation. The venue for any such litigation shall be in Skagit County, Washington.
SIGNED, sealed and delivered this __________ day of ____________________, 2013.

<table>
<thead>
<tr>
<th>PRINCIPAL</th>
<th>SURETY</th>
</tr>
</thead>
<tbody>
<tr>
<td>By: __________________________</td>
<td>By: __________________________</td>
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<tr>
<td>(Name of Agent)</td>
<td>Attorney-in-Fact</td>
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<th>Washington Contractor’s License No:</th>
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<tr>
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</table>

**ATTACH POWER OF ATTORNEY**
AGREEMENT
DEPOSIT IN LIEU OF MAINTENANCE BOND

PROJECT NAME: ________________________________

C.O.#: ___________________ W.O.# ____________________

THIS AGREEMENT made and entered into in triplicate this ___ day of ____________, 2013 by and between ____________________________, hereinafter referred to as “Developer”, and ____________________________, hereinafter referred to as “Bank”, whose mailing address is ____________________________, and PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, 1415 Freeway Drive, Post Office Box 1436, Mount Vernon, WA 98273, hereinafter referred to as “District”.

WHEREAS, District requires a guaranty by Developer insuring, for a period of one (1) year following the date of District’s Letter of Acceptance of the below described facilities, that the facilities are free from defects including materials and workmanship, and

WHEREAS, Developer herein wishes to deposit funds with the Bank named above in lieu of a bond to guaranty maintenance and repair of the below described facilities at the development located at ____________________________ Washington.

IN CONSIDERATION of the mutual covenants set forth below, the undersigned parties do covenant and agree as follows:

1. District agrees that Developer, in lieu of posting a maintenance bond with respect to the water main facilities (hereafter referred to as “facilities”) may deposit with the above-named Bank the sum of ____________________________ Dollars ($_________________00) to guaranty that Developer shall maintain and remedy the facilities from defects for a period of one (1) year following the date of the Letter of Acceptance by the District of the facilities. Said Letter of Acceptance can be issued or become effective upon execution of this Agreement.

2. Bank agrees to retain the deposit in lieu of bond upon the following conditions:

2.1 No withdrawals will be made on the deposit account without the written approval of the District’s General Manager or his designated representative.

2.2 Release of any remaining funds to the Developer, prior to completion of the one (1) year period will not be made without the written approval of the District’s General Manager or his designated representative.

2.3 Funds shall be released to the District for maintenance or repair of defects upon the written demand of the District’s General Manager or his designated representative.

2.4 Signing of this Agreement by the Bank acknowledges receipt of the deposit in the Bank by the Developer, under Account No. ____________________, for the purposes stated and under the terms and conditions stated herein.

2.5 Developer shall be responsible for any charges or costs charged by the bank for the deposit in lieu of bond.
3. Developer agrees that it has deposited funds with the Bank and that the sum set forth above is for the purposes stated and in accordance with the terms and conditions stated above.

4. Developer agrees and understands that the purpose of this deposit in lieu of bond is to guaranty the payment to the District of costs of repair that may become necessary during the first year of operation; and that this deposit secures payment for replacement of any or all of the facility if it is determined by the District that the defects are excessive to the point that the facilities cannot be relied upon for a long, trouble-free life.

5. The Developer agrees that, in the event the cost of repair or replacement of defects exceed the amount posted herein, the Developer will be responsible for, and immediately deposit sufficient funds to pay for, the necessary repair or replacement.

6. The District shall notify the Bank of any known condition that, in the District’s opinion, constitutes a lawful claim against said funds for repair or replacement deemed necessary. District notification shall be submitted timely and not later that one year from date of acceptance.

7. In the event of a dispute between the Developer and the District over the terms and conditions hereof or any claims pursuant the prevailing party shall be entitled to their attorney fees and costs. This Agreement and all disputes arising hereunder shall be governed by Washington State law. Venue shall be in the Superior Court of the State of Washington for Skagit County.

DEVELOPER:

(TYPED NAME)
Address: ________________________________

By: ____________________________________
   Its: ___________________________________
   Date: ________________________________

BANK:

(TYPED NAME)
Address: ________________________________

By: ____________________________________
   Its: ___________________________________
   Date: ________________________________

DISTRICT: PUBLIC UTILITY DISTRICT NO. 1
OF SKAGIT COUNTY, WASHINGTON

By: ____________________________________
   Robert B. Powell, General Manager
   Date: ________________________________
AGREEMENT
IRREVOCABLE LETTER OF CREDIT IN LIEU OF MAINTENANCE BOND

PROJECT NAME: ________________________________________________

C.O.#: ___________________ W.O.# _______________________

THIS AGREEMENT made and entered into in triplicate this ___ day of ________, 2013 by and between ________________________, hereinafter referred to as “Developer”, and ________________________, hereinafter referred to as “Bank”, whose mailing address is DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, 1415 Freeway Drive, Post Office Box 1436, Mount Vernon, WA 98273, hereinafter referred to as “District”.

WHEREAS, District requires a guaranty by Developer insuring, for a period of one (1) year following the date of District’s Letter of Acceptance of the below described facilities, that the facilities are free from defects including materials and workmanship, and

WHEREAS, Developer herein wishes to provide an irrevocable letter of credit from, the Bank named above in lieu of a bond to guaranty maintenance and repair of the below described facilities at the development located at ______________________________________________________, Washington.

IN CONSIDERATION of the mutual covenants set forth below, the undersigned parties do covenant and agree as follows:

District agrees that Developer, in lieu of posting a maintenance bond with respect to the water main facilities (hereafter referred to as “facilities”) may provide an irrevocable letter of credit with the above-named Bank for the sum of ________________________ Dollars ($______________) to guaranty that Developer shall maintain and remedy the facilities from defects for a period of one (1) year following the date of the Letter of Acceptance by the District of the facilities. Said Letter of Acceptance can be issued or become effective upon execution of this Agreement.

2. Bank agrees to provide an irrevocable letter of credit upon the following conditions:

   2.1 Release of the irrevocable letter of credit to the Developer, prior to completion of the one (1) year period will not be made without the written approval of the District’s General Manager or his designated representative.

   2.2 Funds shall be released to the District for maintenance or repair of defects upon the written demand of the District’s General Manager or his designated representative.

   2.3 Signing of this Agreement by the Bank acknowledges creation of an irrevocable letter of credit in the Bank by the Developer, under Account No. ________________, for the purposes stated and under the terms and conditions stated herein.

   2.4 Developer shall be responsible for any charges or costs charged by the bank for the irrevocable letter of credit.

3. Developer agrees that an irrevocable letter of credit has been established with the Bank and that the sum set forth above is for the purposes stated and in accordance with the terms and conditions stated above.
4. Developer agrees and understands that the purpose of this irrevocable letter of credit in lieu of maintenance bond is to guaranty the payment to the District of costs of repair that may become necessary during the first year of operation; and that this letter of credit secures payment for replacement of any or all of the facility if it is determined by the District that the defects are excessive to the point that the facilities cannot be relied upon for a long, trouble-free life.

5. The Developer agrees that, in the event the cost of repair or replacement of defects exceed the amount posted herein, the Developer will be responsible for, and immediately deposit sufficient funds to pay for, the necessary repair or replacement.

6. The District shall notify the Bank of any known condition that, in the District’s opinion, constitutes a lawful claim against said funds for repair or replacement deemed necessary. District notification shall be submitted timely and not later that one year from date of acceptance.

7. In the event of a dispute between the Developer and the District over the terms and conditions hereof or any claims pursuant the prevailing party shall be entitled to their attorney fees and costs. This Agreement and all disputes arising hereunder shall be governed by Washington State law. Venue shall be in the Superior Court of the State of Washington for Skagit County.

DEVELOPER:

(TYPED NAME)
Address: ____________________________________________

By: ____________________________________________
Its: ____________________________________________
Date: ____________________________________________

BANK:

(TYPED NAME)
Address: ____________________________________________

By: ____________________________________________
Its: ____________________________________________
Date: ____________________________________________

DISTRICT: PUBLIC UTILITY DISTRICT NO. 1
OF SKAGIT COUNTY, WASHINGTON

By: ____________________________________________
Robert B. Powell, General Manager
Date: ____________________________________________
MAINTENANCE AGREEMENT FOR GOVERNMENTAL AGENCY

WHEREAS: __________________________________________________________
as Principal, who’s address is:

______________________________________________________________

Phone: ___________________________________________________________

has constructed waterline plant and facilities commonly known as:
Project Title: ______________________________________________________
C. O. # ___________________________     W. O. # ___________________________

WHEREAS, for and in consideration of the services to be received from
PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY, WASHINGTON, the Principal
desires to give Public Utility District No. 1 of Skagit County (District) a guarantee that said
construction was performed in a workmanlike manner; and,

WHEREAS, the Principal, is a governmental organization; and,

WHEREAS, local governments are permitted to make the most efficient use of their
powers by enabling them to cooperate with other local governments and thereby provide services
and facilities in a manner that will accord best with geographic, economic, population, and other
factors influencing the needs and development of local communities; and

WHEREAS, the commitment of funds to purchase a maintenance bond is deemed to be a
non-efficient use of funds; given the cooperative governmental mission of the District and the
Principal to the local communities;

NOW, THEREFORE, in lieu of a one year maintenance bond, the Principal does hereby
guarantee, indemnify, and hold harmless the District, its officers, employees, and agents from
any defect or defects whatsoever in the waterline plant and facilities which may develop or be
discovered within one (1) year after the formal written acceptance of the project by the District.
To the extent no defects or claims of defects have been discovered, this Agreement shall become
null and void without further action by either party one (1) year after the formal written
acceptance of the project by the District. The Parties agree that the liability hereunder shall not
exceed the sum of $_________________________ (100% of the value).

The Parties further agree that the District may initiate repairs and perform the work itself or by
contract to any vendor at the District’s sole discretion. The Principal agrees to reimburse the
District within ninety days of invoice by the District. Remedies for non-payment may include
termination of water service and/or other legal recourse.
IN WITNESS THEREOF, the parties hereto have executed this agreement as of the _____
day of ________________________, 2013.

PRINCIPAL:

_________________________________________  PUBLIC UTILITY DISTRICT NO. 1
Name of Principal

_________________________________________  OF SKAGIT COUNTY, WASHINGTON
Signature  Robert B. Powell, General Manager

Printed Name and Title

Attest:______________________________  Attest:______________________________
Date:_______________________________  Date:_______________________________
**BILL OF SALE**

For and in consideration of mutual benefits and other good and valuable consideration, receipt of which is hereby acknowledged, XXXXXXXXXXXXXXXXXX does herewith transfer, sell, convey and quit claim to the **PUBLIC UTILITY DISTRICT NO. 1 OF SKAGIT COUNTY** the following described personal property situated at XXXXXXXXXXXXXXXXXXXXXXXXXXXX, Skagit County, Washington.

<table>
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<tr>
<th>Quantity</th>
<th>Item Description</th>
<th>Total Cost</th>
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<tbody>
<tr>
<td>2,500’</td>
<td>8-inch Class 50 DI Pipe</td>
<td>$29,882.91</td>
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<tr>
<td>110’</td>
<td>4-inch Class 50 DI Pipe</td>
<td>1,177.85</td>
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<td>8</td>
<td>8-inch Gate Valve RW</td>
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<td>6-inch Gate Valve RW</td>
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<td>4-inch Gate Valve RW</td>
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<td>1</td>
<td>1-inch Combination Air Valve</td>
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<td>1</td>
<td>2-inch Flushing Assembly</td>
<td>400.00</td>
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<td>51</td>
<td>1-inch PE Service Stubs</td>
<td>9,448.78</td>
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<tr>
<td>LS</td>
<td>Miscellaneous</td>
<td>2,131.27</td>
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**Materials Total** $50,720.83  
**Labor & Equipment** 21,569.74  
**Subtotal Materials, Labor and Equipment** $72,290.57  
**Washington State Sales Tax (8.2%)** 5,927.83  
**Engineering** 10,000.00  
**Total** $88,218.40

Seller warrants that he is the owner of the described property and has a good right and full authority to sell the same.

Dated this____ day of______________, 2013.

________________________________________

Signature

Updated March 19, 2010

Page 1 of 2
STATE OF __________________________
COUNTY OF __________________________ (Individual)
I certify that I know or have satisfactory evidence that __________________________ is the person who appeared before me, and said person acknowledged that he/she signed this instrument and acknowledged it to be his/her free and voluntary act for the uses and purposes mentioned in the instrument.
Date: __________________________

Notary Public in and for the State of __________________________
My appointment expires: __________________________

OWNER:

________________________________________
Print Title

________________________________________
Signature

________________________________________
Print Name

STATE OF __________________________
COUNTY OF __________________________ (Corporate, Partnership)
I certify that I know or have satisfactory evidence that __________________________ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the ________ of __________________________
to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

I certify that I know or have satisfactory evidence that __________________________ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as ________ of __________________________
to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

I certify that I know or have satisfactory evidence that __________________________ is the person who appeared before me, and said person acknowledged that (she) signed this instrument, on oath stated that she was authorized to execute the instrument and acknowledged it as ________ of __________________________
to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.
Date: __________________________

Notary Public in and for the State of __________________________
My appointment expires: __________________________

Updated March 19, 2010

Page 2 of 2

C.O. #

W.O. #
BILL OF MATERIALS

<table>
<thead>
<tr>
<th>NO.</th>
<th>NOMENCLATURE</th>
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<th>NO.</th>
<th>NOMENCLATURE</th>
<th>REQ'D.</th>
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<td>1</td>
<td>WATER MAIN</td>
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<td>ADAPTER, BRASS PK JOINT, 1&quot;M.P.X.1&quot;F, PVC (FORD #287-44)*</td>
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<td>UTILITY VAULT 3030-1A W/3030-F COVER (SEE NOTE 4)</td>
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<td>VALVE, 1&quot; COMBINATION AIR (APCO) (W/ STAINLESS STEEL TRIM)*</td>
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<td>CURB STOP, 1&quot; B11-444</td>
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<td>PIPE, 1&quot; PVC, SCH. 80</td>
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<td>6</td>
<td>VALVE BOX, CAST IRON OLYMPIC FOUNDRY VS-007-SKAGIT (SEE P.U.D. DETAIL)</td>
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<td>HOSE CLAMP, 3/4&quot; STAINLESS STEEL</td>
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<td>17</td>
<td>BEND, 1&quot;, COPPER, 180°, WITH INSET SCREEN</td>
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<td>(SEE P.U.D. DETAIL)</td>
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<td>CASING, 8&quot; P.V.C. SEWER PIPE</td>
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<td>ELL, 1&quot; BRASS, 90° STREET</td>
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<td>ELL, 1&quot; BRASS, 90°</td>
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<td>21</td>
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<td>10</td>
<td>UNION, BRASS 1&quot;</td>
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</table>

*OR EQUIVALENT APPROVED BY THE DISTRICT

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874.

NOTES:

1. CORP TO BE IN FULL "ON" POSITION BEFORE BACKFILL.
2. SET VALVE CASINGS AND VAULT TO FINISHED GRADE. PROVIDE CONCRETE BLOCK SUPPORT UNDER CASING. DO NOT REST ON PIPE. REFER TO DETAIL OF STANDARD VALVE CASING INSTALLATION.
3. INSTALL LINE PERPENDICULAR TO MAIN OR AS SHOWN ON WATER PLAN.
4. CARSON INDUSTRIES BOX 1730-15 W/COVER 1730-3L MAY BE USED IN LAWN OR LANDSCAPED AREA UPON APPROVAL BY P.U.D.
5. IF THERE IS A GROUND DEPRESSION OR DITCH BETWEEN AIR VALVE LOCATION AND VENT PIPE WHICH AFFECTS THE SLOPE OF THE HORIZONTAL VENT PIPE, INSTALL A CULVERT IF IT IS A DRAINAGE PATH OR FILLED WITH DIRT.

MAINLINE WIRE CONNECTION DETAIL

NOTE: ALL THREE WIRES ARE TO BE TIED TOGETHER IN AN OVERHAND KNOT APPROXIMATELY 8" FROM WIRE NUT. BAR: 5/8" OF WIRES. CONNECT WITH #82325 KING WATERPROOF WIRE CONNECTOR.
STANDARD
1" FLUSHING ASSEMBLY

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 16, 2014

NOTES:
1. BLOCK AS PER P.U.D. HORIZONTAL THRUST BLOCKING DETAIL. BEARING AREA TO BE AGAINST UNDISTURBED EARTH AND TO BE DETERMINED BY THE ENGINEER. USE FORMING AS NECESSARY TO PREVENT CONCRETE FROM INTERFERING WITH CAP OR PLUG.
2. PLASTIC THREADED CAPS TO BE HAND TIGHT ONLY.
### BILL OF MATERIALS

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<tr>
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<th>REQ'D</th>
<th>NO.</th>
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<td>CORP. 1&quot;, FORD #59-500</td>
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<td>12</td>
<td>METER BOX &amp; COVER, CARSON INDUSTRIES LLC, L SERIES 1324-15</td>
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<td>NOT USED</td>
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<td>EXTENSION, METER BOX, CARSON INDUSTRIES LLC, L SERIES 1324-15</td>
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<td>5</td>
<td>NIPPLE, BRASS, 1 x 2&quot;</td>
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<td>14</td>
<td>INSERT, STIFFENER, 1-1/4&quot; (FORD #72)</td>
<td>2</td>
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<td>WIRE, 1#0 SOLID COPPER, BLUE COATED, EXTEND MIN. 116&quot; INTO BOX, NEAR LID</td>
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<td>CLAMP, 1-1/4&quot;, ALL STAINLESS - STUB ONLY</td>
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<td>PIPE, 1-1/4&quot;, PE 3408, SDR 7, 2000 P.S.I.</td>
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<td>ADAPTERS, 1-1/4&quot; M.I.P.T. x 1-1/4&quot; INSERT W/CAP (GALVANIZED)</td>
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<td>8</td>
<td>COPPERSETTER, 1&quot;, FORD #9674-188-11-44</td>
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<td>17</td>
<td>HOSE CLAMP, 1-1/4&quot; STAINLESS STEEL</td>
<td>1</td>
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<td>9</td>
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<td>1</td>
<td>18</td>
<td>ADAPTER, BRASS, 1&quot; M.I.P.T. X 1&quot; INSERT</td>
<td>1</td>
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<td>ADAPTER, BRASS PK JOINT, M.I.P.T. X 1-1/4&quot; POLY, (FORD #9648-44)</td>
<td>1</td>
<td>19</td>
<td>1&quot; x 1-1/4&quot; ELBOW REDUCER</td>
<td>2</td>
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<td>20</td>
<td>NIPPLE, BRASS, 1 &quot; x 6&quot;</td>
<td>1</td>
</tr>
</tbody>
</table>

*OR EQUIVALENT APPROVED BY THE DISTRICT

*ELL, 60' STREET, 1" M X F I.P. (F NEEDED)

**ALL BRASS Fittings TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874**

### NOTES

1. CORP TO BE IN FULL OPEN POSITION BEFORE BACKFILL.
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SPECIFIED ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS TYPICALLY 1-6" TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLANTED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DEVELOPER FROM THE PIPELINE TO THE PROPERTY LINE. IF METER BOX AND COPPER SETTER ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STUBBED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED IN COPPER SETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER’S PLUMBING, INSTALL A WRAP AROUND TAPE OVER END OF NIPPLE. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN BOX.
6. FLUSH OUT SERVICE TUBING AND COPPER SETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. FILL BOX WITH FINE DIRT TO TOP OF METER.
8. IF THE METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (FORD STATES PLASTICS INC., MS6210934-15) WILL BE REQUIRED. NOT FOR THROUGHWAY TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
10. IF SERVICE LINE HAS LESS THAN 20" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FROST PROTECTION REQUIREMENTS.
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER’S PLUMBING AFTER DISTRICT’S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

---

**STANDARD INSTALLATION OF 1" METERED SERVICE**
**WITH 200 P.S.I. POLYETHYLENE SERVICE LINE**

---

**SCALE: 1" = 2'**
**DATE: 3-01-05**
**REVISED: 5/16/14**
**DRAWN BY: KDM**
**APPROVED BY: GJS**

---

**SKAGIT PUBLIC UTILITY DISTRICT**

---

**PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER**

---

**APPROVED ON:**
**MAY 16, 2014**
### Bill of Materials

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<thead>
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<th>No.</th>
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<td>WIRE #10 SOLID COPPER, BLUE COATED, EXTEND MIN. 18&quot; INTO BOX, NEAR LID</td>
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<td>14</td>
<td>SEE, 3&quot; BRASS</td>
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<td>CLAMP, 1-1/4&quot;, ALL STAINLESS - STUB ONLY</td>
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<td>ADAPTER, 1&quot; M.I.P.T. X 1-1/4&quot; INSERT W/CAP (GALVANIZED)</td>
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<td>21</td>
<td>NIPPLE, BRASS, 1&quot; X 3&quot;</td>
<td>3</td>
</tr>
</tbody>
</table>

* ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3674

### Notes

1. CORR TO BE IN FULL OPEN POSITION BEFORE BACKFILL.
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS TYPICALLY 1" TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLATED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DEVELOPER FROM THE PIPELINE TO BEYOND THE PROPERTY LINE. IF METER BOX AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STUBBED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER’S PLUMBING, INSTALL A WATERTIGHT WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN BOX.
6. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. FILL BOX WITH FINE DIRT TO TOP OF METER.
8. IF THE METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (MID-STATES PLASTICS, INC., MSBCF1324-18) WILL BE REQUIRED. NOT FOR THROUGH-WAY TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
10. IF SERVICE LINES HAS LESS THAN 2" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FREEZE PROTECTION REQUIREMENTS.
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER’S PLUMBING AFTER DISTRICT’S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

### Standard Installation of 1" Metered Service

**WITH 200 P.S.I. POLYETHYLENE**

SERVICE LINE WITH DEDUCT METER

---

### PUD No. 1 of Skagit County Engineering Manager

**APPROVED ON:** MAY 16, 2014

### Standard

**WS1-2**

**DATE:** 3-01-05

**REVISED:** 5/16/14

**DRAWN BY:** CAS

**APPROVED BY:** GJS
BILL OF MATERIALS

| NO. | NOMENCLATURE                                                                 | REQ'D. |
|-----|------------------------------------------------------------------------------|--------|-----|
| 1   | WATER MAIN                                                                   | 1      |     |
| 2   | CLAMP, SERVICE, DOUBLE STRAP X 1" I.P.T., ALL BRASS, (FORD #209)             | 1      |     |
| 3   | CORP, 1" (FORD #39-500)                                                    | 1      |     |
| 4   | ADAPTER, BRASS PAK JOINT, 1" F.I.P.T. X 1" COPPER, (FORD #214-440)           | 1      |     |
| 5   | NIPPLE, BRASS, 1" O      | 1      |     |
| 6   | WIRE, #10 SOLID COPPER, BLUE COATED, EXTEND MIN.18" INTO BOX, NEAR LID      | 1      |     |
| 7   | TUBING, 1/4" COPPER, TYPE K       | 1      |     |
| 8   | COPPERSETTER, 1" FORD #95GC74-18W-11-440                                     | 1      |     |
| 9   | ADAPTER, BRASS PAK JOINT, 1" M.I.P.T. X 1-1/4" COPPER, (FORD #204-440)       | 2      |     |
| 10  | METER, DUGGER, 1" MODEL M70                                                   | 1      |     |
| 11  | METER BOX & COVER, (CARSON INDUSTRIES LLC, L SERIES 1324-15)                 | 1      |     |
| 12  | EXTENSION, METER BOX, (CARSON INDUSTRIES LLC, L SERIES 1324-15) (IF NEEDED) | 1      |     |
| 13  | HOSE CLAMP, 1/4" STAINLESS STEEL                                               | 1      |     |
| 14  | POST, 4" 0" MIN. METAL FENCE POST #/SPARE REMOVED                             | 1      |     |
| 15  | CAP, 1" (GALVANIZED)                                                         | 1      |     |
| 16  | ADAPTER, BRASS, 1" F.I.P.T. X 1" INSERT                                     | 1      |     |

*OR EQUIVALENT APPROVED BY THE DISTRICT

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874

NOTES:
1. CORP TO BE IN FULL OPEN POSITION BEFORE BACKFILL
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS TYPICALLY 1" TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLATTED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DEVELOPER FROM THE PIPELINE TO BEYOND THE PROPERTY LINE. IF METER BOX AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STUBBED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATER/TIGHT WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN BOX.
6. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUDD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. FILL BOX WITH FINE DIRT TO TOP OF METER.
8. IF THE METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (MID-STATES PLASTICS, INC., M80RF1324-25) WILL BE REQUIRED. NOT FOR THROUGH-WAY TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
10. IF SERVICE LINE HAS LESS THAN 2" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FREEZE PROTECTION REQUIREMENTS.
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.
BILL OF MATERIALS

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<td>WIRE, 8&quot; SOLID COPPER, BLUE COATED, EXTEND MIN. 18&quot; INTO BOX, NEAR LID</td>
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<td>CASING, 8&quot; PVC SEWER PIPE</td>
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<td>UTILITY VAULT 3842-1 W/3842-2438P COVER^c</td>
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<td>CAP, 2&quot; (GALVANIZED)</td>
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<td>NIPPLE, BRASS 1-1/2&quot;X4&quot;</td>
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<td>POST, 4&quot;-0&quot; MIN. 1/16&quot; MIN. 1/16&quot; MIN. FLANGE POST W/SPACE REMOVED</td>
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<tr>
<td>21</td>
<td>CAP, 1-1/2&quot; (GALVANIZED)</td>
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^a OR EQUIVALENT APPROVED BY THE DISTRICT
^b ALL 80 STREET, 2" N X F I.P.T. (IF NEEDED)

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874.

NOTES

1. CORR TO BE IN FULL OPEN POSITION BEFORE BACKFILL.
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS TYPICALLY TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLATED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DEVELOPER FROM THE PIPELINE TO BEYOND THE PROPERTY LINE. IF METER BOX AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STATED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATERTIGHT TRAP OF ELECTRICAL TAPE OVER END OF NIPPLE. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN BOX.
6. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. FILL BOX WITH TINE DIRT TO TOP OF METER.
8. IF THE METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (MID-STATES PLASTICS, INC., WS-350/152) WILL BE REQUIRED. MID. FOR THROUGH-ROAD TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
10. IF SERVICE LINE HAS LESS THAN 2" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FREEZE PROTECTION REQUIREMENTS.
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER. PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

MAINLINE WIRE CONNECTION DETAIL

NOTE: ALL THREE WIRES ARE TO BE TIED TOGETHER IN AN OVERHAND KNOT APPROXIMATELY 8" FROM WIRE NUT. BARE 8/3 OF WIRES. CONNECT WITH #62325 KING WATERPROOF WIRE CONNECTOR.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 16, 2014

STANDARD INSTALLATION OF 1-1/2" METERED SERVICE WITH 200 P.S.I. POLYETHYLENE SERVICE LINE

STANDARD
WS1.5-1
BILL OF MATERIALS

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<td>VALVE, 2&quot; DUCHE MAN, RESILIENT WEDGE</td>
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<td>NIPPLE, BRASS 2X4</td>
<td>18</td>
<td>2</td>
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<td>ADAPTER, BRASS PKG. 2&quot; I.P.T. X 2&quot; POLY (FORD C16-27) ² ³</td>
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<td>MIG, #10 SOLID COPPER, BLUE COATED, EXTEND MIN.18&quot; INTO BOX, NEAR LID</td>
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<td>INSERT, STAINER, 2&quot; (FORD #757) ²</td>
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² OR EQUIVALENT APPROVED BY THE DISTRICT ³ ELL, 90°, STREET, 2" W X F I.P.T. (IF NEEDED)

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874

NOTES

1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
2. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATERPROOF WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE.
3. IF VAULT AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE TUBING INSTALLATION, THEN TUBING IS TO BE STUBBED UP ABOVE FINISH GRADE AND CAPPED. SEE DETAIL A.
4. SUPPORT COPPER SETTERS WITH 1/2" TO 2" OD ROD OR PIPE THROUGH EACH EYELET. SET COPPER SETTER FLUSH AND PLUMB IN VAULT/BOX. LOCK BACK WITH P.U.D.-ISSUED PADLOCK.
5. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
6. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 6 INCHES OF 3/4" MINUS CRUSHED GRAVEL, COMPACTED TO 95% UNDER CONCRETE VAULTS. SUPPORT VALE FLOOR WITH 0.2 SQ. FT. OF CONCRETE ON EACH SIDE OF VALE. SUPPORT 2" VALE WITH MIN. OF 1 SQ. FT. OF CONCRETE BLOCK ON UNDERSTANDING GRAVEL OR COMPACTED 3/4" CRUSHED GRAVEL.
7. IF THE METER IS LOCATED IN ASPHALT OR CONCRETE AREA, A CONCRETE UTILITY VAULT WILL BE REQUIRED. IF IN LAWN OR LANDSCAPED AREA, A CARSON INDUSTRIES LLC SERIES 1730-3L BOX WITH COVER 1730-3L CAN BE INSTALLED WITH APPROVAL BY DISTRICT ENGINEER.
8. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
9. METER SENSING VALVE LOCATED IN STEEL LID OF UTILITY VAULT WITHIN SIX INCHES OF HINGE NEAR STREET END IN A CARSON INDUSTRIES BOX. PAD IS TO BE LOCATED AT THE STREET END OF THE BOX.
10. SEAL VAULT LIDS AND SEGMENTS WITH 1-1/2" X 1" JOINT MASTIC.
11. DRAIN VAULT TO DAYLIGHT WHERE POSSIBLE WITH MINIMUM 3" DRAIN PIPE (TO BE DETERMINED IN FIELD BY P.U.D. REPRESENTATIVE).
12. NON-SHRINK GROUT OR FOAM SHALL BE INSTALLED AROUND PIPE PENETRATIONS THROUGH VAULT WALL TO ELIMINATE GROUND WATER FLOODING VAULT.
13. A SHUT-OFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 16, 2014

STANDARD INSTALLATION OF DOUBLE 1-1/2" METERED SERVICE WITH 200 P.S.I. POLYETHYLENE SERVICE LINE W/ DEDUCT METER

STANDARD

DATE: 3-01-05
REVISED: 5/16/14
DRAWN BY: CAS
APPROVED BY: GJS
BILL OF MATERIALS

<table>
<thead>
<tr>
<th>NO.</th>
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<th>REQ'D.</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2</td>
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<td>4</td>
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<td>6</td>
<td>WIRE, #10 SOLID COPPER, BLUE COATED, EXTEND MIN. 18&quot; INTO BOX, NEAR LID</td>
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<tr>
<td>7</td>
<td>PIPE, 2&quot; P.V.C., 200 PSI, SCHEDULE 80</td>
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<td>8</td>
<td>COPPERSETTER, 1-1/2&quot;, FORD #82-159-3B-11-55</td>
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<td>ADAPTER, BRASS PK JOINT, 2&quot; M.I.P.T. X PVC (FORD #027-77)</td>
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<td>10</td>
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<td>11</td>
<td>CASING, 8&quot; PVC SEWER PIPE</td>
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<td>12</td>
<td>UTILITY VAULT 3842-4A W/3842-2A3SP COVER</td>
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<tr>
<td>13</td>
<td>VALVE BOX, CAST IRON OLYMPIC FOUNDRY VS-407-SKAGIT (SEE P.U.D. DETAIL)</td>
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<tr>
<td>14</td>
<td>ELL, BRASS 2&quot;, 45° OR 90°</td>
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<td>BUSHING, BRASS 2&quot; M.I.P.T x 1-1/2&quot; F.I.P.T.</td>
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<td>16</td>
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<td>17</td>
<td>NIPPLE, BRASS 1-1/2&quot; II</td>
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<tr>
<td>18</td>
<td>CAP, 1-1/2&quot; (GALVANIZED)</td>
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</tbody>
</table>

*OR EQUIVALENT APPROVED BY THE DISTRICT

*ELL, 90° STREET, 2" M X F I.P.T. (IF NEEDED)

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874

NOTES

1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
2. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATERTIGHT WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE.
3. SUPPORT COPPERSETTER WITH 1/2" TO 2' OF ROD OR PIPE THROUGH EACH EYELET. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN VAULT/BOX. LOCK BYPASS WITH P.U.D.—ISSUED PADLOCK.
4. Flush out service tubing and coppersetter before installing meter. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
5. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 8 INCHES OF 3/4" MINUS CRUSHED GRANULATED MATERIAL ON TOP OF SERVICE. SUPPORT VALVE CASING WITH 1/2 SQ.FT. OF CONCRETE ON EACH SIDE OF VALVE. SUPPORT 2" VALVE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR CRUSHED 3/4" CRUSHED GRAVEL.
6. IF METER IS LOCATED IN ASPHALT OR CONCRETE AREA, A CONCRETE UTILITY VAULT WILL BE REQUIRED. IF IN LAWN OR LANDSCAPED AREA, A CARSON INDUSTRIES LLC SERIES 1730-15 BOX W/FULL COVER 1730-3L CAN BE INSTALLED WITH APPROVAL BY DISTRICT ENGINEER.
7. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
8. METER SENSING PAD TO BE LOCATED IN STEEL LID OF UTILITY VAULT WITHIN SIX INCHES OF HINGE LINE OF STREET END. IN A CARSON INDUSTRIES BOX, PAD IS TO BE LOCATED AT STREET END OF BOX.
9. SEAL VAULT LIDS AND SEGMENTS WITH 1-1/2" X 1/4" JOINT Mastic.
10. DRAIN VAULT TO DAYLIGHT WHERE POSSIBLE WITH MINIMUM 3" DRAIN PIPE. (TO BE DETERMINED IN FIELD BY P.U.D. REPRESENTATIVE.)
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

MAINLINE WIRE CONNECTION DETAIL

NOTE: ALL THREE WIRES ARE TO BE TIED TOGETHER IN AN OVERHAND KNOT. APPROXIMATELY 6" FROM WIRE NUT. BAR 6/8" OF WIRE. CONNECT WITH #02315 KING WATERPROOF WIRE CONNECTOR.

STANDARD INSTALLATION OF
1-1/2" METERED SERVICE
WITH P.V.C. SERVICE LINE

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 16, 2014

PUD #1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 16, 2014

STANDARD

WS1.5-4

DATE: 3-25-05
REVISED: 5/16/14
DRAWN BY: CAS
APPROVED BY: GJS
## BILL OF MATERIALS

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<td>WATER MAIN</td>
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<td>2</td>
<td>CLAMP, SERVICE, DOUBLE STRAP X 2&quot; L.P.T., ALL BRASS, (FORD #2028)</td>
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<td>3</td>
<td>VALVE, 2&quot; DUCTILE IRON, RESINSET WEDGE</td>
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<td>4</td>
<td>NIPPLE, BRASS 2X4</td>
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<td>ADAPTER, BRASS PK. JOINT, 2&quot; F.L.P.T. X PVC (FORD #27-77)</td>
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<tr>
<td>6</td>
<td>WIRE AND SOLID COPPER, BLUE COATED, EXTEND MIN. 18&quot; INTO BOX, NEAR UID</td>
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<td>7</td>
<td>PIPE, 2&quot; S.V.C., 200 PSI, SCHEDULE 80</td>
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<td>VALVE BOX, CAST IRON OLYMPIC FOUNDRY VB-807-SKAGIT (SEE P.U.D. DETAIL)</td>
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<td>BUSHING, BRASS 1-1/2&quot; X 1-1/2&quot; F.L.P.T.</td>
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<tr>
<td>23</td>
<td>CAP, 1-1/2&quot; (GALVANIZED)</td>
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</table>

*OR EQUIVALENT APPROVED BY THE DISTRICT

**ILL. 90 STREET, 2" X 2" L.P.T. (IF NEEDED)

**ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874

### NOTES

1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
2. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATERPROOF WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE.
3. SUPPORT COPPERSETTER WITH 1/8" TO 2" OF ROD OR PIPE THROUGH EACH EYELET. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN VAULT/BOX. LOCK Bypass WITH P.U.D. ISSUED PADLOCK.
4. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
5. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 6 INCHES OF 3/4" MINUS CRUSHED GRAVEL, COMPACTED TO 95% UNDER CONCRETE VAULTS. SUPPORT VALVE CASING WITH 0.2 SQ.FT. OF CONCRETE ON EACH SIDE OF VALVE. SUPPORT 2" VALVE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR COMPACTED 3/4" CRUSHED GRAVEL.
6. IF METER IS LOCATED IN ASPHALT OR CONCRETE AREA, A CONCRETE UTILITY VAULT WILL BE REQUIRED. IF IN LAWN OR LANDSCAPED AREA, A CARSON INDUSTRIES LLC SERIES 1730-15 BOX W/COVER 1730-30 CAN BE INSTALLED WITH APPROVAL BY DISTRICT ENGINEER.
7. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
8. METER SENSING PAD TO BE LOCATED IN STEEL UID OF UTILITY VAULT WITHIN SIX INCHES OF HINGE BOARD NEAR STREET END. IN A CARSON INDUSTRIES BOX, PAD IS TO BE LOCATED AT STREET END OF BOX.
9. SEAL VAULT LIDS AND SEGMENTS WITH 1-1/2"X1" JOINT Mastic.
10. DRAIN VAULT TO DAYLIGHT WHERE POSSIBLE WITH MINIMUM 3" DRAIN PIPE. (TO BE DETERMINED IN FIELD BY P.U.D. REPRESENTATIVE.)
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.
12. NOTIFY CUSTOMER TO RECOMMEND THAT THEY INSTALL A LOW RANGE PRV BEYOND THE METER TO REDUCE THE PRESSURE FROM 120 PSI TO BELOW 80 PSI TO PROTECT THEIR INDOOR PLUMBING.

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**PUBLIC UTILITY DISTRICT**

**STANDARD INSTALLATION OF 1-1/2" METERED SERVICE WITH P.V.C. SERVICE LINE OFF HIGH PRESSURE MAIN LINE GREATER THAN 150 P.S.I.**

**STANDARD**

**WS1.5-5**

**DATE:** 3-25-05

**REVISED:** 5/16/14

**DRAWN BY:** KDM

**APPROVED BY:** GJS

**PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER**

**APPROVED ON:** MAY 16, 2014
### Bill of Materials

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<td>UNION, 2&quot; BRASS</td>
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</tr>
</tbody>
</table>

*OR EQUIVALENT APPROVED BY THE DISTRICT*  
ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874.

### Notes:

1. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 8 INCHES OF 3/4" MINUS CRUSHED GRAVEL, COMPACTED TO 95%, UNDER CONCRETE VAULTS. SUPPORT VALVE CASING WITH 0.2 SQ.FT. OF CONCRETE ON EACH SIDE OF VALVE. SUPPORT 2" VALVE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR COMPACTED 3/4" CRUSHED GRAVEL.

2. INSTALL LINE PERPENDICULAR TO MAIN OR AS SHOWN ON WATER PLAN.

3. IF THERE IS A GROUND DEPRESSION OR DITCH BETWEEN AIR VALVE LOCATION AND VENT PIPE WHICH AFFECTS THE SLOPE OF THE HORIZONTAL VENT PIPE, INSTALL A CULVERT IF IT IS A DRAINAGE PATH OR FILL WITH DIRT.

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**STANDARD INSTALLATION OF 2" COMBINATION AIR VALVE ASSEMBLY**

**Skagit PUD**

**Standard:** WV2-1

**Date:** 3-25-05  
**Revised:** 5/21/14  
**Drawn By:** CAS  
**Approved By:** GJS

*PUD No. 1 of Skagit County Engineering Manager*

**Approved On:** MAY 21, 2014
STANDARD
2-INCH FLUSHING ASSEMBLY

NOTE:
MAINLINE VALVE 
(IF CALLED FOR ON PLANS)
3/4" ROD, COATED

INSTALL KEY BLOCK ONLY IF MAINLINE VALVE IS INSTALLED. 
(SEE HORIZONTAL THRUST BLOCKING DETAIL)

NOTE:
95% COMPACTIN OF 
EARTH OR GRAVEL BASE 
AS REQUIRED.

NOTE:
1. BLOCK AS PER P.U.D. HORIZONTAL THRUST BLOCKING 
DETAIL. BEARING AREA TO BE AGAINST UNDISTURBED 
GROUND AND TO BE DETERMINED BY THE ENGINEER. USE 
FORMING AS NEEDED TO PREVENT CONCRETE FROM 
INTERFERRING WITH CAP (#1), CLAMP (#2) OR VALVE (#4).

2. PLASTIC THREADED CAP (#8) TO BE HAND TIGHT ONLY.

3. IF A MAINLINE VALVE IS INSTALLED UPSTREAM OF FLUSHING 
ASSEMBLY, KEY BLOCK VALVE AND CAP. SEE THRUST 
BLOCKING DETAIL.

4. KEY BLOCK TO BE INSTALLED ONLY IF PIPE IS EXPECTED 
TO EXTEND WITHIN TEN (10) YEARS OF INSTALLATION. 
SEE HORIZONTAL THRUST BLOCKING DETAIL.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER
APPROVED ON: MAY 6, 2014

SCALE: 1" = 2'
DATE: 3-25-05
REVISED: 5/6/14
DRAWN BY: CAS
APPROVED BY: GJS
NOTES:

1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.

2. IF METER IS NOT INSTALLED IN COPPERSETTER, OR IF CONNECTION IS NOT MADE PRIOR TO CUSTOMER'S PLUMBING, INSTALL A TIGHT FITTING PLUG OR CAP ON OPEN END OF COPPERSETTER AND A TIGHT WRAP OF PLASTIC (ELECTRICAL) TAPE OVER END OF NIPPLE. MAKE WATER-TIGHT.

3. IF VAULT AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE TUBING INSTALLATION, THEN TUBING IS TO BE StubBED UP ABOVE FINISH GRADE AND CAPPED. SEE DETAIL A.

4. SUPPORT COPPERSETTER WITH 1/4" TO 2" OF ROD OR PIPE THROUGH EACH EYELET. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN VAULT/BOX. LOCK BAYPASS WITH P.I.D.-ISSUED PADLOCK.

5. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.

6. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NECKLES OR PIPE. PLACE 6 INCHES OF 3/4" MINUS CRUSHED GRAVEL COMPACTED TO 95% UNDER CONCRETE VAULTS. SUPPORT VALVE CASING WITH 0.2 SQ.FT. OF CONCRETE ON EACH SIDE OF VALVE. SUPPORT 2" VALVE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR COMPACTED 3/4" CRUSHED GRAVEL.

7. IF METER IS LOCATED IN ASPHALT OR CONCRETE AREA, A CONCRETE UTILITY VAULT WILL BE REQUIRED. IF IN LAWN OR LANDSCAPED AREA, A CARSON INDUSTRIES LLC SERIES 1730-15 BOX W/COVER 1730-3L CAN BE INSTALLED WITH APPROVAL BY DISTRICT ENGINEER.

8. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.I.D. COPPER SERVICE DETAIL.

9. METER SENSING PAD TO BE LOCATED IN STEEL LID OF UTILITY VAULT WITHIN SIX INCHES OF HINGE NEAR STREET END. IN A CARSON INDUSTRIES BOX, PAD IS TO BE LOCATED AT STREET END OF BOX.

10. SEAL VAULT LIDS AND SEGMENTS WITH 1-1/2/"X1" JOINT MASTIC.

11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER. PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 16, 2014

STANDARD INSTALLATION OF
2" METERED SERVICE
WITH 200 P.S.I. POLYETHYLENE SERVICE LINE

SCALE: 1" = 2'
DATE: 3-25-05
REVISED: 5/16/14
DRAWN BY: CAS
APPROVED BY: GJS

STANDARD
WS2-1
BILL OF MATERIALS

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<td>WATER MAIN</td>
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<td>14</td>
<td>INSERT, STIFFEN, 2&quot; (FORD #75)</td>
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<td>CLAMP, SERVICE DOUBLE STRAP X 2&quot; U.P.L., ALL BRASS (FORD #2029)*</td>
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<td>STABILIZER, 1/8&quot; TO 24&quot; LENGTH</td>
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<td>3</td>
<td>VALVE, 2&quot; DUCTILE IRON, RESILIENT WEDGE</td>
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<td>16</td>
<td>CAP. 2&quot; (GALVANIZED)</td>
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</tr>
<tr>
<td>4</td>
<td>NIPPLE, BRASS 2X4</td>
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<td>NIPPLE, BRASS 3/4&quot;x12&quot; OR 1&quot;x12&quot;</td>
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<td>COPPERSETTER, 3/4&quot; (FORD #BHC72-89-11-33) OR 1&quot; (FHC74-189-11-44)*</td>
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<td>18</td>
<td>POST, 4&quot;-0&quot; MIN. METAL FENCE POST W/SPADE REMOVED</td>
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<td>MIG, #10 SOLID COPPER, BLUE COATED, EXTEND MIN. 18&quot; INTO BOX, NEAR LID.</td>
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<td>HOSE CLAMP, 3/4&quot; STAINLESS STEEL</td>
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<td>9</td>
<td>ADAPTER, BRASS PAK JOINT, 2&quot; MIP, T X POLY (FORD JCM8-77)*</td>
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<td>10</td>
<td>METER, BADGER, 2&quot; MODEL 170</td>
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<td>23</td>
<td>TEE, 2&quot; BRASS</td>
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<td>11</td>
<td>CASING, 6&quot; PVC SINKER PIPE</td>
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<td>24</td>
<td>BUSHING, BRASS 2&quot;x3/4&quot; OR 2&quot;x1&quot; MIP.T. x FIP.T.</td>
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<td>12</td>
<td>UTILITY VAULT 444-IA W/444-33OP COVER (SPRING ASSISTED)</td>
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<td>25</td>
<td>METER, BADGER, MODEL M2S (5/8&quot;), M3S (3/4&quot;) OR W70 (1&quot;), BRONZE</td>
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</tbody>
</table>

* OR EQUIVALENT APPROVED BY THE DISTRICT

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874

NOTES:

1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.

2. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. If connection is not made to customer's plumbing, install a water-tight wrap of electrical tape over end of nipple.

3. IF VAULT AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE TUBING INSTALLATION, THEN TUBING IS TO BE STUBBED UP ABOVE FINISH GRADE AND CAPPED. SEE DETAIL A.

4. SUPPORT LINESETTERS WITH 1/8" TO 2" OF ROD OR PIPE THROUGH EACH EYELET. SET COPPERSETTER Flush, Plumb and Centered in VAULT/BOX. LOCK Bypass with P.U.D.-Issued Padlock.

5. Flush out service tubing and COPPERSETTER before installing meter. Do not allow mud or foreign material to enter any tubing or fittings.

6. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 8 INCHES OF 3/4" MINUS CRUSHED GRAVEL, COMPACTED TO 95%, UNDER CONCRETE VAULTS. SUPPORT VALE CASING WITH 0.2" OF CONCRETE ON EACH SIDE OF VALVE. SUPPORT 2" VALVE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR COMPACTED 3/4" CRUSHED GRAVEL.

7. IF METER IS LOCATED IN ASPHALT OR CONCRETE AREA, A CONCRETE UTILITY VAULT WILL BE REQUIRED. IF IN LAWN OR LANDSCAPED AREA, A CARSON INDUSTRIES LLC SERIES 1730-15 BOX W/FLUSH COVER 1730-3L AND 1334-15 BOX W/1334-3L COVER CAN BE INSTALLED WITH APPROVAL BY DISTRICT ENGINEER.

8. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.

9. METER SENSING PAD TO BE LOCATED IN STEEL U/D OF UTILITY VAULT WITHIN SIX INCHES OF HINGE NEAR THE STREET END. IN A CARSON INDUSTRIES BOX THE PAD IS TO BE LOCATED AT THE STREET END OF THE BOX.

10. SEAL VAULT LIDS AND SECTIONS WITH 1-1/2"x11" JOINT MASTIC.

11. DRAIN VAULT TO DAYLIGHT WHERE POSSIBLE WITH MINIMUM 3" DRAIN PIPE. (TO BE DETERMINED IN FIELD BY P.U.D. REPRESENTATIVE.)

12. NON-SKIM GROUT OR FOAM AROUND PIPE PENETRATIONS THROUGH VAULT WALL TO ELIMINATE GROUNDWATER FLOODING VAULT.

13. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

STANDARD INSTALLATION OF
2" METERED SERVICE
WITH 200 P.S.I. POLYETHYLENE
SERVICE LINE WITH 5/8", 3/4", OR 1" DEDUCT METER

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER
APPROVED ON: MAY 16, 2014

STANDARD
WS2-2

PUBLIC UTILITY DISTRICT
Skagit PUD

SCALE: 1" = 2'
DATE: 3-25-05
REVISED: 5/16/14
DRAWN BY: KDM
APPROVED BY: GJS
1. Where copper service lines are required, the contractor/developer will be responsible for installation of the complete water service except for the meter.
2. Install service line perpendicular to main unless otherwise shown on water construction plan.
3. If meter is not installed in coppersetter, or if connection is not made prior to customer’s plumbing, install a tight fitting plug or cap in open end of coppersetter and a tight wrap of plastic (electrical) tape over end of nipple, make watertight.
4. Support coppersetter with 1/8” to 2” of rod or pipe through each eylet. Set coppersetter flush, plumb and centered in vault/box. Lock bypass with P.U.D.-issued padlock.
5. Flush out service tubing and coppersetter before installing meter. Do not allow mud or foreign material to enter any tubing or fittings.
6. Set valve casing and vault/box to finish grade. Do not rest casing or vault on nipples or pipe. Place 6 inches of 3/4” minus crushed gravel, compacted to 95% under concrete vaults. Support valve casing with 0.2 sq.ft. of concrete on each side of valve. Support 2” valve with min. of 1 sq.ft. of concrete block on undisturbed ground or compacted 3/4” crushed gravel.
7. If meter is located in asphalt or concrete area, a concrete utility vault will be required. If in lawn or landscaped area, a Carson Industries LLC series 1730-15 box w/covers 1730-2L can be installed with approval by district engineer.
8. Meter sensing pad to be located in steel lid of utility vault within six inches of hinge near street end. In a Carson Industries box, pad is to be located at street end of box.
9. Seal vault lids and segments with 1-1/2” x 1” joint mastic.
10. A shutoff valve shall be installed on customer’s plumbing after district’s meter. Per U.P.C. such valve shall be accessible at all times.

All brass fittings to be lead free domestic brass per United States Bill S.3674
BILL OF MATERIALS

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<td>VALVE, 2&quot; DUCTILE IRON, RESILIENT WEDGE</td>
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<td>NIPPLE, BRASS 2X4</td>
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<td>NIPPLE, BRASS 2x12&quot;</td>
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<td>WIRE, #10 SOLID COPPER, BLUE COATED, EXTEND MIN. 18&quot; INTO BOX, NEAR LID</td>
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<td>PIPE, 2&quot; P.V.C., SCHEDULE 80</td>
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<td>COPPERSETTER, 2&quot; FORD #877-128-11-77</td>
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<td>ADAPTER, BRASS PAK JOINT, 2&quot; M.P.T. X P.V.C (FORD #257-77)</td>
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<td>METER, BADGER, 2&quot; MODEL 170</td>
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<td>CASING, 6&quot; P.V.C. OR SCH 40 PIPE</td>
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<td>UTILITY VAULT 3842-1A W/3642-243BP COVER</td>
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<td>VALVE BOX, CAST IRON OLYMPIC FOUNDRY VB-007-SKAGIT (SEE P.U.D. DETAIL)</td>
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<td>ELBOW, 90° STREET, 2&quot; M X F I.P.E. (F NEEDED)</td>
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<td>15</td>
<td>CAP, 2&quot; (GALVANIZED)</td>
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* OR EQUIVALENT APPROVED BY THE DISTRICT

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874

NOTES

1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
2. IF METER IS NOT INSTALLED IN COPPERSETTER, OR IF CONNECTION IS NOT MADE PRIOR TO CUSTOMER'S PLUMBING, INSTALL A TIGHT FITTING PLUG OR CAP IN OPEN END OF COPPERSETTER AND A TIGHT WRAP OF PLASTIC (ELECTRICAL) TAPE OVER END OF NIPPLE. MAKE WATER TIGHT.
3. SUPPORT COPPERSETTER WITH 1 1/2" TO 2" OF ROD OR PIPE THROUGH EACH EYELET. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN VAULT/BOX. LOCK BYPASS WITH P.U.D.-ISSUED PADLOCK.
4. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
5. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 6 INCHES OF 3/4" MINUS CRUSHED GRAVEL, COMPACTED TO 95% UNDER CONCRETE VAULTS. SUPPORT VALVE CASING WITH 0.2 SQ.FT. OF CONCRETE ON EACH SIDE OF VALVE. SUPPORT 2" VALVE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR COMPACTED 3/4" CRUSHED GRAVEL.
6. IF METER IS LOCATED IN ASPHALT OR CONCRETE AREA, A CONCRETE UTILITY VAULT WILL BE REQUIRED. IF IN LAWN OR LANDSCAPED AREA, A CARSON INDUSTRIES LLC SERIES 1730-15 BOX W/COVER 1730-3L CAN BE INSTALLED WITH APPROVAL BY DISTRICT ENGINEER.
7. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
8. METER SENSING PAD TO BE LOCATED IN STEEL LID OF UTILITY VAULT WITHIN SIX INCHES OF HINGE NEAR STREET END. IN A CARSON INDUSTRIES BOX, PAD IS TO BE LOCATED AT STREET END OF BOX.
9. SEAL VAULT LIDS AND SEGMENTS WITH 1-1/2" "x1" JOINT MASTIC.
10. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

STANDARD INSTALLATION OF 2" METERED SERVICE WITH P.V.C SERVICE LINE

#10 WIRE

MAINLINE WIRE CONNECTION DETAIL

NOT: ALL THREE WIRES ARE TO BE TIED TOGETHER IN AN OVERHAND KNOT APPROXIMATELY 8" FROM WIRE NUT.
BAR 5/8" OF WIRES. CONNECT WITH #92325 KING WATERPROOF WIRE CONNECTOR.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY ___, 2014

STANDARD

WS2-4

DRAWN BY: CAS
APPROVED BY: GJS

SCALE: 1" = 2'
DATE: 5/16/14
REVISED: 5/25-05
NOTES

1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.

2. IF METER IS NOT INSTALLED IN COPPERSETTER, OR IF CONNECTION IS NOT MADE PRIOR TO CUSTOMER'S PLUMBING, INSTALL A TIGHT FITTING PLUG OR CAP IN OPEN END OF COPPERSETTER AND A TIGHT WRAP OF PLASTIC (ELECTRICAL) TAPE OVER END OF NIPPLE. MAKE WATER TIGHT.

3. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.

4. SET VALE Casing AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 6 INCHES OF 3/4" MINUS CRUSHED GRAVEL COMPACTED TO 95% UNDER CONCRETE VAULTS. SUPPORT VALE CASING WITH 0.2 SQ.FT. OF CONCRETE ON EACH SIDE OF VALE. SUPPORT 2" VALE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR COMPACTED 3/4" CRUSHED GRAVEL.

5. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.

6. METER SENSING PAD TO BE LOCATED IN STEEL LID OF UTILITY VAULT WITHIN SIX INCHES OF HINGE NEAR STREET END. IN A CARSON INDUSTRIES BOX, PAD IS TO BE LOCATED AT STREET END OF BOX.

7. SEAL VAULT LIDS AND SEGMENTS WITH 1-1/2"x1" JOINT MASTIC.

8. DRAIN VAULT TO DAYLIGHT WHERE POSSIBLE WITH MIN. 3" DRAIN PIPE (TO BE DETERMINED IN FIELD BY P.U.D. REPRESENTATIVE).

9. APPLY NON-SHRINK GROUT OR FOAM AROUND PIPE PENETRATIONS THROUGH VAULT WALL TO ELIMINATE GROUNDWATER FLOODING VAULT.

10. LOCK BYPASS WITH P.U.D. ISSUED PADLOCK.

11. A SHUTOFF VALE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER. PER U.P.C. SUCH VALE SHALL BE ACCESSIBLE AT ALL TIMES.
# BILL OF MATERIALS

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<td>WATER MAIN</td>
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<td>ELL, BRASS, 2&quot;, 45° OR 90°</td>
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<td>CLAMP, SERVICE, DOUBLE STRAP X 2&quot; I.P.T.</td>
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<td>NIPPLE, BRASS 1&quot;x6&quot;</td>
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<td>BUSHING, BRASS 2&quot; M.I.P.T. x 1&quot; F.I.P.T.</td>
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<td>CASING, 6&quot; PVC SEWER PIPE</td>
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<td>UTILITY VAULT W/4&quot;-1/32&quot; COVER SPRING ASSISTED</td>
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<td>CURB STOP, 1&quot; (FORD 811-444W)</td>
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<td>BLOCK, PRECAST CONCRETE, 18&quot;x18&quot;x4&quot; MINIMUM</td>
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<td>CAP, 2&quot; (GALVANIZED)</td>
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* OR EQUIVALENT APPROVED BY THE DISTRICT
b OR EQUIVALENT APPROVED BY THE DISTRICT
* NOT TO BE USED WHERE FLOW RATE OF LESS THAN 3 GPM OCCURS.

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3674

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### NOTES

1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
2. BURY OUT SERVICE TUBING AND COPPER/TERI BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
3. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 8 INCHES OF 3/4" MINUS CRUSHED GRAVEL. COMPACTED TO 95% UNDER CONCRETE VAULTS. SUPPORT VALVE CASING WITH 0.2 SQ.FT. OF CONCRETE ON EACH SIDE OF VALVE. SUPPORT 2" VALVE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR COMPACTED 3/4" CRUSHED GRAVEL.
4. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
5. METER BOX MUST BE LOCATED IN STEEL LID OF UTILITY VAULT WITHIN SIX INCHES OF HINGE NEAR STREET END. IN A CARSON INDUSTRIES BOX. PAD IS TO BE LOCATED AT STREET END OF BOX.
6. SEAL VAULT LIDS AND SEGMENTS WITH 1-1/2"x1" JACKET MASTIC.
7. DRAIN VAULT TO DAYLIGHT WHERE POSSIBLE WITH MIN. 3" DRAIN PIPE (TO BE DETERMINED IN FIELD BY P.U.D. REPRESENTATIVE).
8. APPLY NON-SHRINK GROUT OR FOAM AROUND PIPE PENETRATIONS THROUGH VAULT WALL TO ELIMINATE GROUNDWATER FLOODING VAULT.
9. LOCK Bypass with P.U.D. Iced Padlock.
10. A SHUT-OFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER. PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

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**STANDARD INSTALLATION OF 2" TURBINE METERED SERVICE WITH P.V.C. SERVICE LINE**

**STANDARD**

WS2-6

**PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER**

APPROVED ON: MAY 16, 2014
STANDARD INSTALLATION OF 3-INCH FLUSHING ASSEMBLY

NOTES:

1. BLOCK AS PER P.U.D., HORIZONTAL THRUST BLOCKING STANDARD DETAIL FOR 6" PIPE OR SMALLER. USE KEY BLOCK ARRANGEMENT FOR LARGER THAN 6" PIPE UNLESS PERMANENT DEAD END; THEN STANDARD BLOCKING REQUIRED. BEARING AREA TO BE AGAINST UNDISTURBED EARTH AND TO BE DETERMINED BY THE ENGINEER.

2. USE FORMING AS NECESSARY TO PREVENT CONCRETE FROM INTERFERING WITH CAP (#11), TEE (#2), OR VALVE (#4). IF A VALVE IS INSTALLED UPSTREAM OF SLOW, KEY BLOCK VALVE AND CAP. SEE HORIZONTAL THRUST BLOCKING DETAIL.

3. INSTALL VALVE AS DETERMINED BY DISTRICT ENGINEER.

4. PLASTIC THREAD CAP TO BE HAND TIGHT ONLY.

5. KEY BLOCK TO BE INSTALLED ONLY IF PIPE IS EXPECTED TO EXTEND WITHIN TEN (10) YEARS OF INSTALLATION. SEE HORIZONTAL THRUST BLOCKING DETAIL.

DATE: 3-25-05
REVISED: 5/16/14
DRAWN BY: KDM
APPROVED BY: GJS

APPROVED ON: MAY 16, 2014

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER
1. SET VALVE BOX AND VAULT TO FINISH GRADE. SEE P.U.D. VALVE BOX DETAIL.
2. SEAL VAULT UDP AND RISERS OF VAULT WITH 1-1/2"x1" joint mastic. INSTALL 3" PVC PIPE TO DRAIN TO DAYLIGHT IF POSSIBLE.
3. INSTALL SERVICE PIPE PERPENDICULAR TO MAIN OR AS SHOWN ON WATER PLANS APPROVED BY DISTRICT ENGINEER. USE ELLS, AS NECESSARY, TO MEET ELEVATION OF VAULT.
4. TEE, VALVE AND PIPE MUST BE WRAPPED WITH 6 MIL POLYETHELYNE PIPE ENCAsEMENT. IT IS TO BE INSTALLED AS PER D.P.R.A. AND IN ACCORDANCE WITH A.W.A. C105.
5. BLOCK TEE/MASSING SLEEVE WITH POURED CONCRETE ON ALL WATER MAINS OTHER THAN DUCTILE IRON. IN ADDITION, THE SERVICE PIPE FROM VALVE AT MAIN LADDER AND THE PRIVATE SERVICE LINE FROM METER TO PRIVATE PROPERTY SHALL BE RESTRAINED USING MED-A-LUGS OR "FIELD LOK" GASKETS (OR APPROVED EQUIVALENT). THE LENGTH OF RESTRAINED PIPE ON PRIVATE PROPERTY SHALL BE DETERMINED BY THE DEVELOPER/ENGINEER.
6. SET VAULT ON MIN. 8" OF 3/4" MINUS CRUSHED GRAVEL, MECHANICALLY Tamped TO 95% COMPACTNESS.
7. FLUSH OUT PIPELINE BEFORE INSTALLING METER. DO NOT ALLOW ANY MUD OR FOREIGN MATERIAL TO ENTER PIPE OR FITTINGS.
8. IF CONNECTION IS NOT COMPLETED TO CUSTOMER'S PIPE, INSTALL M.U.L. "TAP 2", CAP OPEN END OF PIPE OR PLUG, "TAP 2", IN VALVE AND FLUSH OUT PIPE AND METER. MAKE WATER TIGHT.
9. METER SENSING PAD IS TO BE LOCATED WITHIN 6" OF HINGE ON VAULT LID AT STREET (INLET) END OF VAULT.
10. 3" AND 4" VALVES SHALL BE A.W.A. CS80 STANDARD, "O" RING PACKING, Non-RISING STEM, 2" OPERATING NUT, RESIDENT WEDGE, GATE VALVES (WHEEL OPERATORS INSIDE VAULT.)
11. NON-SHINK GROUT/FOAM AROUND PIPE. MAKE WATER TIGHT.
12. 2" BALL VALVES SHALL BE LOCKED UPON INSTALLATION W/P.U.D.-SUPPLIED PADLOCKS.
13. BACKFILL AROUND VAULT SHALL BE EQUALLY TAMPED TO ELIMINATE SETTLEMENT.
14. CONCRETE BLOCK OR EQUIVALENT UNDER VALVE IS TO KEEP VALVE FACE VERTICAL DURING INSTALLATION.
15. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

NOTES:
### BILL OF MATERIALS

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<th>No.</th>
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OR EQUIVALENT APPROVED BY THE DISTRICT
LOCATION OF LADDER TO BE DETERMINED AT INSTALLATION BY P.U.D. REPRESENTATIVE.

### NOTES:

1. SET VALVE BOX AND VAULT TO FINISH GRADE. SEE P.U.D. VALUE BOX DETAIL.
2. SEAL VAULT LIDS AND RISERS OF VAULT WITH 1-1/2" X 1" JOINT MAUSIC. INSTALL 3" PVC PIPE TO DRAIN TO DAYLIGHT IF POSSIBLE.
3. INSTALL SERVICE PIPE PERPENDICULAR TO MAIN OR AS SHOWN ON WATER PLANS APPROVED BY DISTRICT ENGINEER. USE ELLS, AS NECESSARY, TO MEET ELEVATION OF VAULT.
4. TEE, VALVE AND PIPE MUST BE WRAPPED WITH 8 ML POLYETHYLENE PIPE ENCAPSULATION.
5. IT IS TO BE INSTALLED AS PER D.I.P.A. AND IN ACCORDANCE WITH A.W.W.A. C100.
6. BLOCK TEE/TAPPING SLEEVE WITH POURING CONCRETE ON ALL WATER MAINS OTHER THAN DIAMETER IRON. IN ADDITION, THE SERVICE PIPE FROM VALVE AT MAIN TO METER AND THE PRIVATE SERVICE LINE FROM METER ON TO PRIVATE PROPERTY SHALL BE RESTRAINING USING MEG-1-UG OR "FIELD LOCK" GASKETS (OR APPROVED EQUIVALENT). THE LENGTH OF RESTRAINED PIPE ON PRIVATE PROPERTY SHALL BE DETERMINED BY THE DEVELOPING ENGINEER.
7. SET VAULT ON MIN. 8" OF 3/4" MINUS CRUSHED GRAVEL. MECHANICALLY TAMPERED TO 95% COMPACTION.
8. FLUSH OUT PIPELINE BEFORE INSTALLING METER. DO NOT ALLOW ANY MUD OR FOREIGN MATERIAL TO ENTER PIPE OR FITTINGS.
9. IF CONNECTION IS NOT COMPLETED TO CUSTOMER'S PIPE, INSTALL M.J. TAP 2", CAP OVER OPEN END OF PIPE OR PLUG, TAP 2", IN VALVE AND FLUSH OUT PIPE AND METER. MAKE WATER TIGHT.
10. METER SENSING PAD IS TO BE LOCATED WITHIN 3" OF HINGE ON VAULT LID AT STREET (MELT) END OF VAULT.
11. 3" AND 4" VALVES SHALL BE A.W.W.A. C509 STANDARD, "O" RING PACKING, NON-RISING STEM, 2" OPERATING NUT, RESIDENT WEDGE, GATE VALVES. (WHEEL OPERATORS INSIDE VAULT.)
12. NON-SHRINK GROUT/FOAM AROUND PIPE. MAKE WATER TIGHT.
13. 2" BALL VALVE SHALL BE LOCKED UPON INSTALLATION W/P.U.D. SUPPLIED PADLOCKS.
14. BACKFILL AROUND VAULT SHALL BE FIRMLY TAMPERED TO ELIMINATE SETTLEMENT.
15. CONCRETE BLOCK OR EQUIVALENT UNDER VALVE IS TO KEEP VALVE FACE VERTICAL DURING INSTALLATION.
16. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

### PLAN VIEW

REFER TO SHEET 2/2 FOR ELEVATION VIEW.

---

**PUD No. 1 of Skagit County Engineering Manager**

APPROVED ON: MAY 16, 2014

---

**STANDARD INSTALLATION OF 3" TURBINE METERED SERVICE PLAN VIEW**

- **Scale:** 1" = 2'
- **Date:** 3-25-05
- **Revised:** 5/16/14
- **Drawn By:** CAS
- **Approved By:** GJS

**STANDARD**

**WS3-2a**
PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

REFER TO SHEET 1/2 FOR PLAN VIEW

APPROVED ON: MAY 16, 2014
**BILL OF MATERIALS**

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<td>PIPE, 4&quot; CL 50 DUCTILE IRON (FIELD CUT TO LENGTH)</td>
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<td>UTILITY VALVE 675LA W/ #75-1L - 2-332P COVER (SPRING ASSISTED) AND LADDER (BLCO) LADDER-UP SAFETY POST</td>
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<td>22</td>
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*OR EQUIVALENT APPROVED BY THE DISTRICT

*LOCATION OF LADDER TO BE DETERMINED AT INSTALLATION BY PUD REPRESENTATIVE.

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3974

**NOTES:**

1. SET VALVE BOX AND VAULT TO FINISH GRADE. SEE P.U.D. VALVE BOX DETAIL.
2. SEAL VAULT LIDS AND RISERS OF VALVE WITH 1-1/2" MORTAR. INSTALL 3" PVC PIPE TO DRAW TO DAYLIGHT IF POSSIBLE.
3. INSTALL Pipe PERPENDICULAR TO MAIN OR AS SHOWN ON WATER PLANS. APPROVED BY DISTRICT ENGINEER. USE ELLS, AS NECESSARY, TO MEET ELEVATION OF VAULT.
4. TEE, VALVE AND PIPE MUST BE WRAPPED WITH 8 ML POLYETHYLENE PIPE ENCASEMENT. IT IS TO BE INSTALLED PER D.I.P.R.A. AND IN ACCORDANCE WITH A.W.W.A. C105.
5. BLOCK TEE/TAPPING SLEEVE WITH POURED CONCRETE ON ALL WATER MAINS OTHER THAN DUCTILE IRON. IN ADDITION, THE SERVICE PIPE FROM VALVE AT MAIN TO METER AND THE PRIVATE SERVICE LINE FROM METER TO PRIVATE PROPERTY SHALL BE RESTRAINED USING MEG-A-LUGS OR "FIELD LOCK" GASKETS (OR APPROVED EQUIVALENT). THE LENGTH OF RESTRAINED PIPE ON PRIVATE PROPERTY SHALL BE DETERMINED BY THE DEVELOPER ENGINEER.
6. SET VAULT ON MIN. 8" OF 3/4" MINUS CRUSHED GRAVEL, MECHANICALLY TAMPERED TO 95% COMPACTION.
7. FLUSH OUT PIPELINE BEFORE INSTALLING METER. DO NOT ALLOW ANY MUD OR FOREIGN MATERIAL TO ENTER PIPE OR FITTINGS.
8. IF CONNECTION IS NOT CONNECTED TO CUSTOMER'S PIPE, INSTALL M.U., TAP 2", CAP OVER OPEN END OF PIPE OR PLUG TAP 2", IN VALVE AND FLUSH OUT PIPE AND METER. MAKE WATER TIGHT.
9. METER SENSING PAD IS TO BE LOCATED WITHIN 8" HINGE ON VAULT Lid AT STREET (INLET) END OF VAULT.
10. 4-INCH VALVES SHALL BE A.W.W.A. 509 STANDARD, "O" RING PACKING, NON-RISING STEM, 2" OPERATING NUT, RESILIENT WEDGE, GATE VALVES. (WHEEL OPERATORS INSIDE VAULT)-
11. NON-SHRINK GROUT/FOAM AROUND PIPE. MAKE WATER TIGHT.
12. 2" BALL VALVES SHALL BE LOCKED UPON INSTALLATION W/P.U.D.-SUPPLIED PADLOCKS.
13. BACKFILL AROUND VAULT SHALL BE EMBENeal TAMPERED TO ELIMINATE SETTLEMENT.
14. CONCRETE BLOCK OR EQUIVALENT UNDER VALVE IS TO KEEP VALVE FACE VERTICAL DURING INSTALLATION.
15. A SHUT-OFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER. PER M.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

---

**PLAN VIEW**

REFER TO SHEET 2/2 FOR ELEVATION VIEW.

---

**PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER**

APPROVED ON: MAY 16, 2014

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**STANDARD INSTALLATION OF 4" COMPOUND METERED SERVICE PLAN VIEW**

---

**STANDARD**

WS4-1a

---

**DRAWN BY:** CAS

APPROVED BY: GJS
### BILL OF MATERIALS

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<td>PLUG, 2&quot; BRASS (SEE NOTE B)</td>
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**Notes:**

1. SET VALVE BOX AND VAULT TO FINISH GRADE. SEE P.U.D. VALVE BOX DETAIL.
2. SEAL VAULT LIDS AND RISERS OF VAULT WITH 1-1/2" X 1" JOINT MASTIC. INSTALL 3" PVC PIPE TO DRAIN TO DAYLIGHT IF POSSIBLE.
3. INSTALL SERVICE PIPE PERPENDICULAR TO MAIN OR AS SHOWN ON WATER PLANS APPROVED BY DISTRICT ENGINEER. USE ELB. AS NEEDED, TO MEET ELEVATION OF VAULT.
4. TEE, VALVE AND PIPE MUST BE WRAPPED WITH 8 ML POLYETHYLENE PIPE ENCASEMENT. IT IS TO BE INSTALLED AS PER D.U.P.R.A. AND IN ACCORDANCE WITH A.W.W.A. C100.
5. IF SERVICE PIPE IS LONGER THAN ONE (1) LENGTH OF PIPE (12'), THEN U.S. PIPE "FIELD-LOCK" GASKETS WILL BE INSTALLED IN T.J., OR EBA " MEG-A-LUG" IN M.J.
6. SET VAULT ON MIN. 6" TO 3/4" MINUS CRUSHED GRAVEL, MECHANICALLY TAMPERED TO 95% COMPACTION.
7. FLUSH OUT PIPELINE BEFORE INSTALLING VAULT. DO NOT ALLOW ANY MUD OR FOREIGN MATERIAL TO ENTER PIPE OR FITTINGS.
8. IF CONNECTION IS NOT COMPLETED TO CUSTOMER'S PIPE, INSTALL M.J., TAP 2", CAP OVER OPEN END OF PIPE OR PLUG, TAP 2", IN VALVE AND FLUSH OUT PIPE AND METER. MAKE WATER TIGHT.
9. WATER SENSING PAD IS TO BE LOCATED WITHIN 6" OF HINGE ON VAULT LID AT STREET (INLET) END OF VAULT.
10. 4-INCH VALVES SHALL BE A.W.W.A. C559 STANDARD, "O" RING PACKING, NON-RESIST STEAM, 2" OPERATING NUT, RESILIENT WEDGE, GATE VALVES. (WHEEL OPERATORS INSIDE VAULT)
11. NON-SHRINK GROUT/FOAM AROUND PIPE. MAKE WATER TIGHT.
12. 2" BALL VALVES SHALL BE LOCKED UPON INSTALLATION W/P.U.D.-SUPPLIED PAVCLOCKS.
13. CONCRETE BLOCK OR EQUIVALENT UNDER VALVE IS TO KEEP VALVE FACE VERTICAL DURING INSTALLATION.
14. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

---

**Plan View**

Refer to Sheet 2/2 for Elevation View.

---

**Plan View**

Refer to Sheet 2/2 for Elevation View.

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**Standard Installation of 4" Turbine Metered Service Plan View**

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**Skagit Public Utility District**

---

**Standard**

**WS4-2a**

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**Scale:** 1" = 2'

**Date:** 3-25-05

**Revised:** 5/16/14

**Drawn By:** CAS

**Approved By:** GJS
BILL OF MATERIALS

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<td>CLAMP, 1-1/4&quot;, ALL STAINLESS -Stub Only</td>
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ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874.

NOTES

1. CORP TO BE IN FULL OPEN POSITION BEFORE BACKFILL.
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS TYPICALLY 1/8" TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLATTED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DEVELOPER FROM THE PIPELINE TO BEYOND THE PROPERTY LINE. IF METER BOX AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STUBBED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATERSHIELD WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN BOX.
6. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METERS. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. FILL BOX WITH FINE DIRT TO TOP OF METER.
8. IF THE METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (MID-STATES PLASTICS, INC., MSBC1324-18) WILL BE REQUIRED. NOT FOR THROUGH-WAY TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
10. IF SERVICE LINE HAS LESS THAN 2" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FREEZE PROTECTION REQUIREMENTS.
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

STANDARD INSTALLATION OF
SINGLE 5/8" OR 3/4" METERED SERVICE
WITH 200 P.S.I. POLYETHYLENE
SERVICE LINE

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 6, 2014
BILL OF MATERIALS

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<td>ADAPTER, BRASS, 1&quot; F.I.P.T. X 1&quot; INSERT</td>
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<td>6</td>
<td>WIRE, BLDG. COPPER, BLUE COATED, EXTEND 18&quot; INTO BOX, NEAR PAD</td>
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<td>ADAPTER, 1-1/4&quot; MIP T. X 1-1/4&quot; INSERT W/CAP (GALVANIZED)</td>
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<td>21</td>
<td>NIPPLE, BRASS, 1x1</td>
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* OR EQUIVALENT APPROVED BY THE DISTRICT

** BLDG. 90 ST STREET, 3/4" M X F I.P.T. (IF NEEDED)

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874.

NOTES

1. CORP TO BE IN FULL OPEN POSITION BEFORE BACKFILL.
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS TYPICALLY 1/8" TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLATTED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DEVELOPER FROM THE PIPELINE TO THE PROPERTY LINE. IF METER BOX AND COPPERSTUD ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STUBBED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED IN COPPERSTUD, INSTALL PLugs IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATERFURTHER WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE. SET COPPERSTUD FLUSH, PLUMB AND CENTERED IN BOX.
6. FLUSH OUT SERVICE TUBING AND COPPERSTUD BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. INSTALL BOX WITH FINE DIRT TO TOP OF METER.
8. IF METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (MOE-STATES PLASTICS, INC., M82EF1324-18) WILL BE REQUIRED. NOT FOR THROUGH-WAY TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER SERVICE DETAIL. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
10. IF SERVICE LINE HAS LESS THAN 2/0" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FREEZE PROTECTION REQUIREMENTS.
11. A SHUT-OFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

STANDARD INSTALLATION OF
SINGLE 5/8" OR 3/4" METERED SERVICE
WITH 200 P.S.I. POLYETHYLENE SERVICE
LINE W/DEDUCT METER

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER
APPROVED ON: MAY 16, 2014

WS58-2

STANDARD
### BILL OF MATERIALS

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<td>TUBING, 1-1/4&quot; Copper, TYPE K</td>
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<td>COPPERSETER, 3/4&quot;, Ford ASME-233&amp;</td>
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<td>CAP, 1&quot; (GALVANIZED)</td>
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<td>16</td>
<td>ADAPTER, Brass, 1&quot; F.I.P.T. x 1&quot; INSERT</td>
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**NOTES**

1. CORP TO BE IN FULL OPEN POSITION BEFORE BACKFILL.
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS USUALLY 1/8" TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLATTED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DEVELOPER FROM THE PIPELINE TO BEYOND THE PROPERTY LINE. IF METER BOX AND COPPERSETER ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STUBBED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATER-TIGHT WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE. SET COPPERSETER FLUSH, PLUMB AND CENTERED IN BOX.
6. FLUSH OUT SERVICE TUBING AND COPPERSETER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. FILL BOX WITH FINE DIRT TO TOP OF METER.
8. IF THE METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (Mid-States Plastics Inc., MSB31324-16) WILL BE REQUIRED. NOT FOR THROUGH-WAY TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
10. IF SERVICE LINE HAS LESS THAN 20" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FREEZE PROTECTION REQUIREMENTS.
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

**ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874.**

---

### STANDARD INSTALLATION OF

**SINGLE 5/8" OR 3/4" METERED SERVICE**

WITH COPPER TYPE K

**SERVICE LINE**

---

**WS58-3**

**STANDARD**

**DATE:** 3-01-05

**REVISED:** 5/16/14

**DRAWN BY:** CAS

**APPROVED BY:** GJS

**APPROVED ON:** MAY 16, 2014
**NOTES**

1. CORP TO BE IN FULL OPEN POSITION BEFORE BACKFILL.
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS TYPICALLY 1/8" TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLATTED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DEVELOPER FROM THE PIPELINE TO BEYOND THE PROPERTY LINE. IF METER BOX AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STUBBED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED IN COPPERSETTER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATERPROOF WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE. INSTALL COPPERSETTER FLUSH, PLUMB AND CENTERED IN BOX.
6. Flush OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. FULL BOX WITH FINE DIRT TO TOP OF METER.
8. IF THE METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (MID-STATES PLASTICS INC., MSBF1324-18) WILL BE REQUIRED. NOT FOR THROUGH-WAY TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD PUD COPPER SERVICE DETAIL.
10. IF SERVICE LINE HAS LESS THAN 20" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FREEZE PROTECTION REQUIREMENTS.
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

---

**STANDARD INSTALLATION OF DOUBLE 5/8" OR 3/4" METERED SERVICE WITH 200 P.S.I. POLYETHYLENE SERVICE LINE**

**MAINLINE WIRE CONNECTION DETAIL**

**NOTE:** ALL THREE WIRES ARE TO BE TIED TOGETHER IN AN OVERHAND KNOT APPROXIMATELY 6" FROM WIRE NUT. BARE 5/8" OF WIRES. CONNECT WITH #02325 I.N.G. WATERPROOF WIRE CONNECTOR.

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**BILL OF MATERIALS**

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---

**ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874.**

---

**STANDARD**

**DATE:** 3-01-05

**REVISED:** 5/16/14

**DRAWN BY:** CAS

**APPROVED BY:** GJS

**APPROVED ON:** MAY 16, 2014

---

**SKAGIT COUNTY ENGINEERING MANAGER**

---

**PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER**

---

**WS58-4**
BILL OF MATERIALS

NO. NOMENCLATURE   REQ'D. NO. NOMENCLATURE   REQ'D.
1 WATER MAIN 10 WATER METER BADGER MV25 (5/8") OR MV35 (3/4") BRONZE METER 1
2 CLAMP, SERVICE, DOUBLE STRAP X 1" I.P.T., ALL BRASS, (FORD #20289) 1
3 CORP, 1", (FORD #79-500) 1
4 ADAPTOR, BRASS PAK JOINT, 1" F.I.P.T. X 1-1/4" POLY, (FORD #016-44) 1
5 NIPPLE, BRASS, 1" x 6" 1
6 WIRE, #10 SOD MOTHER, BLUE COATED, EXTEND MIN.18" INTO BOX, NEAR LID 1
7 PIPE, 1-1/4" PE 3408, SDR 7, 200 PSI 1
8 COPPERSETER, 3/4", (FORD #632-8W-11-44) 1
9 ADAPTOR, BRASS PAK JOINT, 3/4" M.I.P.T. X 1-1/4" POLY, (FORD #088-44) 1
10 NIPPLE, BRASS, 1" x 4" 1
11 F4Y, 1" MILIONS 8000 R, SC, 1", (FORD #72) 1

60" FINISHED GRADE

MAINLINE WIRE CONNECTION DETAIL

NOTE: ALL THREE WIRES ARE TO BE TIED TOGETHER IN AN OVERHAND KNOT APPROXIMATELY 6" FROM WIRE NUT. BAR & 5/8" OF WIRE. CONNECT WITH #02325 KING WATERPROOF WIRE CONNECTOR.

NOTES:
1. CORP TO BE IN FULL OPEN POSITION BEFORE BACKFILL.
2. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
3. SERVICE LINE IS TYPICALLY 1/8" TO NORTH OR WEST OF PROPERTY CORNER OR AS OTHERWISE SPECIFIED.
4. WATER SERVICE TUBING INSTALLATION IN PLATTED AREAS WILL BE COMPLETED BY THE CONTRACTOR/DUTCHER/DEVELOPER FROM THE PIPELINE TO THE PROPERTY LINE. IF METER BOX AND COPPERSETER ARE NOT INSTALLED AT TIME OF SERVICE PIPE INSTALLATION, THEN TUBING IS TO BE STUBBED UP AND COMPLETED AS PER DETAIL A. THE DISTRICT WILL COMPLETE THE ACTUAL METER AND BOX INSTALLATION WHEN NEEDED.
5. IF METER IS NOT INSTALLED IN COPPERSETER, INSTALL PLUGS IN METER CONNECTIONS. IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A WATERPROOF WRAP OF ELECTRICAL TAPE OVER END OF NIPPLE. SET COPPERSETER FLUSH, PLUMB AND CENTERED IN BOX.
6. FLUSH OUT SERVICE TUBING AND COPPERSETER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUBING OR FITTINGS.
7. BOX WITH FINE DIRT TO TOP OF METER.
8. IF THE METER BOX IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (MD-STATES PLASTICS, INC., MSB-1324-18) WILL BE REQUIRED. NOT FOR THROUGHWAY TRAFFIC APPLICATIONS.
9. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS, SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
10. IF SERVICE LINE HAS LESS THAN 20" OF COVER, CONTACT DISTRICT ENGINEERING DEPARTMENT FOR FREEZE PROTECTION REQUIREMENTS.
11. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER, PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

STANDARD INSTALLATION OF SINGLE 5/8" OR 3/4" EXISTING METERED SERVICE WITH 200 P.S.I. POLYETHYLENE SERVICE LINE ON HIGH PRESSURE TRANSMISSION LINE
BILL OF MATERIALS

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<tr>
<td>7</td>
<td>PIPE, 1-1/4&quot; PE 3408, SDR 7, 200 P.S.I.</td>
<td></td>
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<tr>
<td>8</td>
<td>COPPERSETTER, 3/4&quot;, FORD (VIN) #12-2143-11-33</td>
<td>1</td>
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<tr>
<td>9</td>
<td>ADAPTOR, BRASS PK JOINT, 1&quot; M.P.T. X 1-1/4&quot; POLY (FORD #256)</td>
<td>2</td>
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<tr>
<td>10</td>
<td>METER, BADGER, MODEL MS3 (5/8&quot;) OR MS5 (3/4&quot;) BRONZE METER</td>
<td>1</td>
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<tr>
<td>11</td>
<td>CASING, 3&quot; PVC SEWER PIPE</td>
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<tr>
<td>12</td>
<td>METER BOX, CARSON IND. MODEL 1130-15 W/1130-3L COVER (LARGE BOX)</td>
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<tr>
<td>13</td>
<td>VALVE BOX, CAST IRON OLYMPIC FOUNDRY V8-007-SKAGIT (SEE P.U.D. DETAIL)</td>
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<tr>
<td>14</td>
<td>INSERT, STIFFENER, 1-1/4&quot; (FORD #72)</td>
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<tr>
<td>15</td>
<td>POST, 4&quot;-0&quot; MIN. METAL RING POST W/SPACE REMOVED</td>
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<tr>
<td>16</td>
<td>CAP, 1&quot; (GALVANIZED)</td>
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<tr>
<td>17</td>
<td>HOSE CLAMP, 1-1/4&quot; STAINLESS STEEL</td>
<td>1</td>
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<tr>
<td>18</td>
<td>REDUCER, 2&quot;X1&quot; BRASS</td>
<td>1</td>
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<tr>
<td>19</td>
<td>NIPPLE, BRASS 3/4&quot;&quot;X4&quot;</td>
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<td>20</td>
<td>FRY, 3/4&quot;&quot;X4&quot;X1&quot;&quot; &quot;HIGH RANGE PRIV&quot;</td>
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<td>21</td>
<td>NIPPLE, BRASS 1&quot;X4&quot;</td>
<td>1</td>
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<tr>
<td>22</td>
<td>CURB STOP, 1&quot; BRASS, B11-444</td>
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<tr>
<td>23</td>
<td>ADAPTOR, BRASS, 1&quot; F.P.T. X 1&quot; INSERT</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTES:
1. INSTALL SERVICE LINE PERPENDICULAR TO MAIN UNLESS OTHERWISE SHOWN ON WATER CONSTRUCTION PLAN.
2. IF METER IS NOT INSTALLED IN COPPERSETTER, OR IF CONNECTION IS NOT MADE TO CUSTOMER'S PLUMBING, INSTALL A TIGHT FITTING PLUG OR CAP IN OPEN END OF COPPERSETTER AND A TIGHT WRAP OF PLASTIC (ELECTRICAL) TAPE OVER END OF NIPPLE. MAKE WATER TIGHT.
3. IF VAULT AND COPPERSETTER ARE NOT INSTALLED AT TIME OF SERVICE TUBING INSTALLATION, THEN TUBING IS TO BE STUBBED UP ABOVE FINISH GRADE AND CAPPED. SEE DETAIL A.
4. SET COPPERSETTER FLUSH, PLUMB AND CENTERED IN VAULT/BOX.
5. FLUSH OUT SERVICE TUBING AND COPPERSETTER BEFORE INSTALLING METER. DO NOT ALLOW MUD OR FOREIGN MATERIAL TO ENTER ANY TUNING OR FITTINGS.
6. SET VALVE CASING AND VAULT/BOX TO FINISH GRADE. DO NOT REST CASING OR VAULT ON NIPPLES OR PIPE. PLACE 3 INCHES OF 3/4" MINUS CRUSHED GRAVEL, COMPACTED TO 95% UNDER CONCRETE VAULTS. SUPPORT VALVE CASING WITH 0.2 SQ.FT. OF CONCRETE ON EACH SIDE OF VALVE. SUPPORT 2" VALVE WITH MIN. OF 1 SQ.FT. OF CONCRETE BLOCK ON UNDISTURBED GROUND OR COMPACTED 3/4" CRUSHED GRAVEL.
7. IF METER IS LOCATED IN ASPHALT OR CONCRETE AREA, A TRAFFIC BOX (MID-STATES PLASTICS, INC., MS2013-18) WILL BE REQUIRED. NOT FOR THROUGH-WAY TRAFFIC APPLICATIONS.
8. IF THERE IS PETROLEUM-BASED CONTAMINATED SOIL PRESENT, THE PIPELINE SHALL BE OF TYPE K COPPER WITH BRASS AND COPPER FITTINGS. SEE STANDARD P.U.D. COPPER SERVICE DETAIL.
9. METER SENSING PAD TO BE LOCATED IN STEEL LID OF UTILITY VAULT WITHIN 6 INCHES OF HINGE NEAR THE STREET END. IN A CARSON INDUSTRIES BOX PAD IS TO BE LOCATED AT THE STREET END OF BOX.
10. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.
11. SET PRIV TO 125 P.S.I.

STANDARD INSTALLATION OF SINGLE
5/8" OR 3/4" METERED SERVICE WITH 200 P.S.I.
POLYETHYLENE SERVICE LINE OFF HIGH PRESSURE MAIN LINE GREATER THAN 150 P.S.I.

SCALE: NTS
DATE: 6-26-07
REVISED: 8/13/13
DRAWN BY: CAS
APPROVED BY: GJS
APPROVED ON: MAY 21, 2014
1. SET VALVE BOX AND VAULT TO FINISH GRADE. SEE P.U.D. VALVE BOX DETAIL.
2. SEAL VAULT LIDS AND RISERS OF VAULT WITH 1-1/2" x 1" JOINT MATERIAL. INSTALL 3" PVC PIPE TO DRAIN TO DAYLIGHT IF POSSIBLE.
3. INSTALL SERVICE PIPE PERPENDICULAR TO MAIN OR AS SHOWN ON WATER PLANS APPROVED BY DISTRICT ENGINEER. USE ELS., AS NEEDED, TO MEET ELEVATION OF VAULT.
4. TEE, VALVE AND PIPE MUST BE WRAPPED WITH 6 MIL POLYETHYLENE PIPE ENCASEMENT. IT IS TO BE INSTALLED AS PER D.I.P.R.A. AND IN ACCORDANCE WITH A.W.W.A. C105.
5. BLOCK TEE/TAPPING SLEEVE WITH Poured CONCRETE ON ALL WATER MANS THAT OTHER THAN DUCTILE IRON. IN ADDITION, THE SERVICE PIPE FROM VAULT AT MAIN TO METER AND THE PRIVATE SERVICE LINE FROM METER ON TO PRIVATE PROPERTY SHALL BE RESTRAINED USING NOSE-AND-UDS OR "FIELD LOCK" GASKETS (OR APPROVED EQUIVALENT). THE LENGTH OF RESTRAINED PIPE ON PROPERTY SHALL BE DETERMINED BY THE DEVELOPER ENGINEER.
6. SET VAULT ON MIN. 6" OF 3/4" MINUS CRUSHED GRANULAR. MECHANICALLY TAMPAED TO DESS COMPACTION.
7. FLUSH OUT PIPELINE BEFORE INSTALLING METER. DO NOT ALLOW ANY MUD OR FOREIGN MATERIAL TO ENTER PIPE OR FITTINGS.
8. IF CONNECTION IS NOT COMPLETED TO CUSTOMER'S PIPE, INSTALL 3/4" TAP 2", CAP OVER OPEN END OF PIPE AND FLUSH OUT PIPE AND METER. MAKE WATER TIGHT.
9. METER SENSING PAD IS TO BE LOCATED WITHIN 6" OF MUNGE ON VAULT LID AT STREET (NILET) END OF VAULT.
10. 4-INCH VALVES SHALL BE A.W.W.A. CS09 STANDARD, "O" RING PACKING, NON-RISING STEM, 2-OPERATING NUT, RESISTENT WEDGE, GATE. VALVES.
11. NON-SHRINK GROUT/FOAM AROUND PIPE. MAKE WATER TIGHT.
12. BACKFILL AROUND VAULT SHALL BE FIRMLY TAMPAED TO ELIMINATE SETTLEMENT.
13. CONCRETE BLOCK OR EQUIVALENT UNDER VALVE IS TO KEEP VALVE FACE HORIZONTAL DURING INSTALLATION.
14. A SHUTOFF VALVE SHALL BE INSTALLED ON CUSTOMER'S PLUMBING AFTER DISTRICT'S METER. PER U.P.C. SUCH VALVE SHALL BE ACCESSIBLE AT ALL TIMES.

** OR EQUIVALENT APPROVED BY THE DISTRICT
** LOCATION OF LADDER TO BE DETERMINED AT INSTALLATION BY PUD REPRESENTATIVE.

ALL BRASS FITTINGS TO BE LEAD FREE DOMESTIC BRASS PER UNITED STATES BILL S.3874
STANDARD INSTALLATION OF
6" COMPOUND METERED SERVICE
ELEVATION VIEW

REFER TO SHEET 1/2 FOR PLAN VIEW

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER
APPROVED ON: MAY 16, 2014

STANDARD
WS6-1b

PUBLIC UTILITY DISTRICT
Skagit

SCALE: 1" = 2'
DATE: 5-7-07
REVISED: 5/16/14
DRAWN BY: CAS
APPROVED BY: GJS
SHEET 2/2
STANDARD INSTALLATION OF CAST IRON VALVE BOX & VALVE OPERATING NUT EXTENSION

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 6, 2014

VALVE CASING IN PAVED AREAS, STREETS AND SIDEWALKS

REFER TO "RECOMMENDED PROCEDURE FOR SETTING VALVE BOXES IN ASPHALT PAVING" (SHEET 2)

VALVE CASING IN UNPAVED AREAS

CAST IRON COVER AND RING

FINISHED GRADE

COMPACTED BACKFILL AROUND CASING TOP

95% COMPACTED 5/8" CRUSHED ROCK OR STONE SAND

#10 SOLID COPPER WIRE BLUE COATED

CUT PLAIN END OF 6" PVC SEWER PIPE SO IT IS A MINIMUM OF 4" OR A MAXIMUM OF 8" BELOW FINISHED GRADE.

5/8" CRUSHED ROCK OR STONE SAND

#10 WIRE

MAINLINE WIRE CONNECTION DETAIL

NTS

NOTE: BARE 3/8" OF WIRE. CONNECT WITH #82225 KING WATERPROOF WIRE CONNECTOR.

#10 SOLID COPPER WIRE BLUE COATED

FINISHED PAVEMENT GRADE

PAVING

BARE 1" OF WIRE AT LOOP

95% COMPACTED 5/8" CRUSHED ROCK OR STONE SAND

OLYMPIC FOUNDRY, PART NO. VB007/SKAGIT

Olympic Foundry, Part No. VB007/Skagit

CAST IRON VALVE BOX

2-1/2" INSIDE MEASUREMENT DEPTH

3/16" MIN. THICKNESS

5/8" DIA COLD ROLL ROD

5-1/2" DIA 3/16" MIN. THICKNESS

UNDER NUT

2" SQUARE OPERATING NUT

EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN THREE (3) FEET BELOW FINISHED GRADE. THE FINISH ELEVATION OF THE OPERATING NUT IS TO BE 2" - 3" BELOW FINISH GRADE. EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG, ONLY ONE EXTENSION TO BE USED PER VALVE.

NOTE:
1) ALL EXTENSIONS ARE TO BE MADE OF STEEL SIZED AS NOTED, AND PAINTED WITH TWO COATS OF METAL PAINT. WELD ALL PARTS.
2) A CARBONATE CVW-116 BLUE MARKER POST WILL BE INSTALLED AT ALL VALVE(S) LOCATIONS UNLESS DIRECTED OTHERWISE BY DISTRICT REPRESENTATIVE.

VALVE CASING EXTENSION

IF THE 6" PVC VALVE CASING PIPE DOES NOT EXTEND HIGH ENOUGH TO SUPPORT THE CAST IRON VALVE BOX, AN EXTENSION CAN BE ADDED FOLLOWING THE PROCEDURE BELOW:

1. CUT A 6" PVC SEWER PIPE 6" - 8" LONGER THAN THE RISE NECESSARY.
2. SPLIT THE 6" PVC SEWER PIPE TO THE FULL LENGTH.
3. CURL CASING EXTENSION INTO ITSELF AND PLACE INSIDE EXISTING PVC VALVE CASING THE 6"-8" ALLOWED FOR IN STEP 1. INSTALL VALVE BOX.
RECOMMENDED PROCEDURE FOR RAISING AND SETTING CAST IRON VALVE BOX IN ASPHALT PAVING

1. LOCATE BURIED VALVE BOX USING REFERENCE MEASUREMENTS AND/OR ELECTRONIC OR MAGNETIC LOCATOR. MARK LOCATION WITH WHITE PAINT.
2. BREAK OUT SMALL HOLE IN PAVEMENT AND LOCATE THE VALVE BOX COVER.
3. CAREFULLY BREAK OUT AN 18-INCH DIAMETER HOLE WITH 8-INCH RADIUS FROM THE CENTER OF THE VALVE BOX. A CIRCLE TEMPLATE 18 INCHES IN DIAMETER IS HANDY TO MARK OUT THE PERIMETER OF THIS HOLE. USE A CURVED SPADE WITH A JACKHAMMER TO CUT A NEAT VERTICAL FACE HOLE IN THE ASPHALTIC CONCRETE PAVEMENT. DO NOT CRACK OR DAMAGE THE PAVEMENT BEYOND THIS HOLE. IF IT IS SUSPECTED THE VALVE CASING IS NOT VERTICAL OR CENTERED OVER THE VALVE OPERATING NUT, REMOVE JUST ENOUGH PAVEMENT TO ALLOW REMOVAL OF THE VALVE BOX LID SO IT CAN BE DETERMINED IF CASING ADJUSTMENT IS NEEDED. IT IS VERY IMPORTANT TO NOT REMOVE ANY MORE FINISHED PAVEMENT THAN ABSOLUTELY NECESSARY.
4. COMPLETELY REMOVE THE WHOLE VALVE BOX. DO NOT DISTURB THE SURROUNDING EARTH ANY MORE THAN NECESSARY. EXAMINE THE CASING PIPE. MAKE SURE IT IS VERTICAL, SYMMETRICAL AROUND THE VALVE NUT AND CLEAN OF ALL ROCKS, DEBRIS AND DIRT. CLEAN AND CORRECT AS NECESSARY. CHECK WITH A VALVE WRENCH TO VERIFY OPERATION IS SMOOTH.
5. TRIM OR ADD TO THE CASING PIPE (6-INCH PVC PLASTIC OR CONCRETE) AS NEEDED SO THE TOP OF THE CASING PIPE IS AT LEAST 4 INCHES TO MAXIMUM OF 8 INCHES BELOW THE FINISHED PAVEMENT GRADE. THE LID WILL NOT FIT TIGHT IF THE CASING IS HIGHER. VALVE BOX WILL HAVE POOR SUPPORT IF THE CASING PIPE IS LOWER. TO ADD CASING PIPE, USE A PIECE OF 6-INCH PVC PLASTIC SEWER PIPE CUT 12 INCHES LONGER THAN NEEDED. SAW-CUT THIS PIECE ALONG ONE SIDE IN A STRAIGHT LINE THE FULL LENGTH. FOLD THE PIPE OVER THE SAW-CUT AND INSERT IT INSIDE THE CASING PIPE IN THE GROUND. SLIDE UP OR DOWN TO ACHIEVE DESIRED LEVEL.
6. IF THE VALVE OPERATING NUT IS OVER 3 FEET BELOW FINISH PAVEMENT GRADE, INSTALL A STANDARD VALVE OPERATING EXTENSION, PER STANDARD SPECIFICATIONS.
7. USING A 1-INCH ROD OR CAPPED 3/4-INCH PIPE, THOROUGHLY POUND THE EARTH ALL AROUND THE CASING PIPE TO OBTAIN MAXIMUM EARTH COMPACTION.
8. FILL THE VOID BETWEEN THE CASING PIPE AND EARTH WALL UP TO EXACTLY 12 INCHES (1 FOOT) BELOW FINISH PAVEMENT GRADE WITH 5/8-INCH MINUS CRUSHED ROCK AND THOROUGHLY COMPACT USING A ROD OR PIPE AS IN STEP 7. KEEP ADDING AND COMPACTING CRUSHED ROCK UNTIL HARD, TIGHT LEVEL SURFACE IS EXACTLY 12 INCHES BELOW PAVEMENT GRADE.
9. INSERT THE VALVE BOX. USING A STRAIGHT BOARD OR ROD, CHECK THAT THE TOP RIM OF THE VALVE BOX IS EXACTLY LEVEL WITH THE FINISHED PAVEMENT. THE BOX MUST SET EVENLY ON THE CRUSHED ROCK BASE. IT MUST NOT ROCK OR WIGGLE. REMOVE THE BOX AND ADJUST THE CRUSHED ROCK AS OFTEN AS NECESSARY TO ACHIEVE EXACT GRADE WITH PAVEMENT AND UNIFORM BOX SUPPORT. PUT CAST IRON LID ON THE BOX. MAKE SURE IT FITS CORRECTLY AND IS FLUSH WITH THE BOX RIM. REPLACE LID IF INCORRECT FIT. REPLACE ENTIRE VALVE BOX IF BOX RIM PREVENTS A SNUG FIT OF THE LID.
10. ADD 5/8-INCH MINUS CRUSHED ROCK UNIFORMLY IN THE SPACE BETWEEN THE VALVE BOX AND OUTSIDE EARTH WALL IN MAXIMUM 4-INCH LIFTS. COMPACT EACH LIFT COMPLETELY WITH 1-INCH ROD OR PIPE AS BEFORE. FILL AND COMPACT THE SPACE UP TO 2 INCHES BELOW FINISHED PAVEMENT GRADE.
11. ADD HOT MIX ASPHALTIC CONCRETE MATERIAL AND THOROUGHLY COMPACT WITH ROD OR PIPE TO THE FINISH PAVEMENT GRADE. SMOOTH OFF THE SURFACE AS MUCH AS POSSIBLE.
12. USING A BRUSH, PAINT THE SURFACE OF THE PATCH WITH ASPHALT TACK MATERIAL, EXTENDING MINIMUM OF 1 INCH OVER PAVEMENT AND ONTO Edge OF VALVE BOX METAL RIM. DO NOT ALLOW ANY TACK MATERIAL TO FLOW INTO METAL RIM OR ON BOX COVER. USE A BRUSH TO CONTROL APPLICATION OF THIS TACK COAT AND PROVIDE A NEAT SEAL SURFACE.
13. CHECK AGAIN THAT VALVE CASING IS CLEAR, THAT VALVE WRENCH CAN BE PUT ON OPERATING NUT AND VALVE CAN BE OPERATED PROPERLY.
14. SPREAD CLEAN FINE SAND OVER THE TACK COAT SO THAT VEHICLE TIRES WILL NOT LIFT THE TACK MATERIAL BEFORE IT CURVES AND SETS UP.
15. EACH VALVE BOX IN A CLUSTER OF TWO TO FOUR VALVES MUST BE ADJUSTED INDEPENDENTLY AS OUTLINED ABOVE. CUTTING OUT TRIANGLES OR SQUARES OF FINISHED PAVEMENT RESULTS IN VALVE BOXES THAT DO NOT REMAIN EVEN WITH PAVEMENT, LEAN TOGETHER, AND BREAK OUT UNDER TRAFFIC BEATING.

CAREFULLY FOLLOWING THE OUTLINED PROCEDURE RESULTS IN VALVE BOX SETTLEMENTS THAT WILL REMAIN FIRM AND IN PLACE, AND ARE VIRTUALLY UNNOTICED BY THE PUBLIC PASSING OVER THEM IN THEIR VEHICLES.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 6, 2014
# BILL OF MATERIALS

<table>
<thead>
<tr>
<th>NO.</th>
<th>NOMENCLATURE</th>
<th>REQ'D.</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>TEE WITH FLANGED BRANCH</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>8&quot; VALVE WITH FLANGED CONNECTIONS (SEE NOTE B)</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>CASING, 6&quot; PVC SEWER PIPE</td>
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<tr>
<td>4</td>
<td>PIPE, 8&quot; CLASS 50 DUCTILE IRON, FIELD CUTOFF</td>
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<tr>
<td>5</td>
<td>FIRE HYDRANT WITH PUMPER PORT, LOW MEDALLION, OR AS APPROVED BY JURISDICTIONAL FIRE DEPARTMENT DISTRICT</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>VALVE BOX, CAST IRON OLYMPIC FOUNDRY 18007/SKAGIT (SEE P.U.D. DETAIL)</td>
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</tr>
<tr>
<td>7</td>
<td>BLOCK, Precast Concrete, SEE NOTE B</td>
<td>1</td>
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<tr>
<td>8</td>
<td>FABRIC, GEOTEXTILE, NON-WOVEN (MIRAFF 140N)</td>
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<tr>
<td>9</td>
<td>1/4 CT DRAIN ROCK, 1-1/2&quot;-3/4&quot;, NO FINES</td>
<td>2</td>
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<tr>
<td>10</td>
<td>ENG-A-LUG, 8&quot; GRIP RING 8&quot;</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>HYDRANT ADAPTER STORZ STYL S-37 W/SC CAP &amp; CABLE, 5&quot; x 1/2&quot;</td>
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</tbody>
</table>

*OR EQUIVALENT APPROVED BY THE DISTRICT

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**NOTES:**

1. ALL MATERIALS AND BRANDS MUST BE APPROVED BY P.U.D.
2. BLOCK TEE AND HYDRANT WITH POURED CONCRETE ON ALL MAINS OTHER THAN DUCTILE IRON AND ON ALL TAPPING SLEEVES AS REQUIRED PER DISTRICT BLOCKING DETAIL. IN ADDITION, 8" MEALUGS (OR APPROVED EQUIVALENT) ARE TO BE INSTALLED AT VALVE AND HYDRANT M.J. OUTLETS. RESTRAIN ANY JOINTS IN THE PIPELINE WITH "FIELD LOC K" GASKETS (OR APPROVED EQUIVALENT) INSTALLED IN THE BELLS OF TYTON JOINT PIPE OR "MEALUGS" ON M.J. BELLS.
3. NO TUBULAR BLOCK REQUIRED BEHIND TEE ON 8" DUCTILE IRON OR LARGER MAINS.
4. PROTECTIVE BARRIER POSTS MAY BE NECESSARY AT SOME HYDRANT INSTALLATIONS. CONTACT FIRE DEPARTMENT/DISTRICT FOR SPECIFIC REQUIREMENTS.
5. HYDRANT LENGTH AND TRENCH DEPTH SHALL BE SO AS TO PROVIDE FOR HYDRANT SETTING AT 2" MIN. AND 6" MAX. ELEVATION ABOVE FINISH GRADE.
6. SET HYDRANT VERTICAL USE LEVEL, COMPACT ALL BACKFILL.
7. VALVE SHALE BE ANWA STANDARD GATE, "O" RING PACKING, NON-RISE STEM, 2" OPERATING NUT, RESILIENT WEDGE.
8. HYDRANT LOCATIONS ARE DETERMINED BY THE FIRE MARSHAL WITH AUTHORITY FOR AREA CONCERNED.
9. CONCRETE BLOCK WILL BE BELOW THE DRAIN HOLES AND DRAIN ROCK. TAKE CARE TO NOT Plug DRAIN HOLES OR CONTAMINATE DRAIN ROCK.
10. SET MINIMUM 1 SQ.FT. CONCRETE SUPPORT TIGHT UP UNDER VALVE AND HYDRANT.
11. HYDRANT BARREL, LEAD, TEE, AND VALVE MUST BE WRAPPED WITH POLYETHYLENE PIPE ENCASEMENT TAPE WHICH IS A MINIMUM OF 8-MIL THICK. IT MUST BE INSTALLED AS PER W.S.D.O.T. STANDARDS AND IN ACCORDANCE WITH A.W.W.A. C105.
12. PROVIDE A MINIMUM 3'-0" EXPANSION JOINT AROUND THE BARREL OF THE HYDRANT AND AN EXPANSION JOINT PERPENDICULAR AROUND THE SIDEWALK INTERSECTING THE HYDRANT BARREL.

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**STANDARD INSTALLATION OF FIRE HYDRANT "CENTER STEM TYPE"**

A STORZ QUICK COUPLER CONNECTED TO THE PUMPER PORT MAY BE REQUIRED. CONTACT FIRE DISTRICT/DEPARTMENT.

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**PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER**

APPROVED ON: May 6, 2014

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**SCALE: NTS**
**DATE: 3-25-05**
**REVISED: 6/4/14**
**DRAWN BY: CAS**
**APPROVED BY: GJS**

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**Skagit PUD**
**PUBLIC UTILITY DISTRICT**

---

**WH-1a**
LEGEND

1. INSTALL CORNERSTONES F100 BLOCK UNITS WITH CAPS, STACK TO DESIRED HEIGHT (4' MAX). ADHERE CAPS TO THE BLOCK UNITS WITH A CONCRETE ADHESIVE.

2. COMPACTED SELECT FILL MATERIAL AS REQUIRED BY THE DISTRICT'S INSPECTOR.

3. ESTABLISH A COMPACTED AGGREGATE LEVELING PAD USING 5/8" MINUS CRUSHED ROCK COMPACTED TO 95% BASE SHALL BE A MINIMUM 6" DEEP PLUS ONE INCH FOR EVERY ONE FOOT OF WALL HEIGHT. PLACE FIRST COURSE OF BLOCKS ON LEVELING SAND.

4. FILL ANY VOIDS IN BLOCKS WITH GRAVEL.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER
APPROVED ON: MAY 16, 2014

PUBLIC UTILITY DISTRICT

STANDARD INSTALLATION OF FIRE HYDRANT "CENTER STEM TYPE"

WH-1b

SCALE: NTS
DATE: 3-25-05
REVISED: 5/27/14
DRAWN BY: KDM
APPROVED BY: GJS

SHEET 2/2
NOTES:
1. FOR ADDITIONAL DETAILS SEE WSDOT STANDARD PLAN L-3.
2. FENCE TO BE PER WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, SECTION 8-12.
3. GATE KEEPERS WITH AUTOMATIC LATCH TO BE PROVIDED TO HOLD GATES OPEN.

DOUBLE SWING GATE

1. MINIMUM GATE POST LENGTH SHALL BE 6'10".
2. CHAIN LINK FENCE TO MATCH FABRIC ON CHAIN LINK FENCE.

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY16, 2014
NOTE: REUSE EXISTING BOLLARDS IF POSSIBLE

4 1/2" Ø STD. PIPE FILLED WITH CONCRETE (ROUNDED TOP)

RUSTOLEUM PRIMER WITH EPOXY PAINT (YELLOW)

SLOPE CONCRETE AWAY FROM BOLLARD

ASPHALT PARKING AREA

HOLE FOR FOUNDATION TO BE DRILLED, OR USE SONOTUBE

CONCRETE CLASS B

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 16 2014

STANDARD INSTALLATION OF CONCRETE BOLLARD

WCB-1
NOTES

1. VAULTS SHALL BE PRECAST CONCRETE MEETING ASTM C476. TOP SLAB SHALL BE DESIGNED TO CARRY HS-20 LOADING.
2. RIGID NON-METALLIC CONDUIT (PVC) FOR FIBER SHALL BE U.L. 651 LISTED, NEMA TC-2, SCHEDULE 40 APPROVED FOR CONCRETE ENCASEMENT. PVC CONDUIT SWEPS SHALL NOT BE USED.
3. FIBERGLASS CONDUIT FOR FIBER SHALL BE U.L. 1684 LISTED, NEMA TC-14, APPROVED FOR CONCRETE ENCASEMENT. FIBERGLASS CONDUIT SWEPS SHALL BE A MINIMUM RADIUS OF 36 INCHES.
4. CONDUTS SHALL CONTAIN NO MORE THAN THREE-QUARTER BENDS (270 CUMULATIVE DEGREES) BETWEEN FIBER OPTIC VAULTS.
5. DURING FIBER OPTIC CABLE INSTALLATION, A MINIMUM OF 150 FEET OF SLACK CABLE SHALL BE INSTALLED ON MOUNTING HARDWARE WITHIN EACH FIBER OPTIC VAULT.
6. FIBER OPTIC VAULTS SHALL BE A MAXIMUM OF 2,500 FEET APART.

TYPICAL FIBER OPTIC VAULT LAYOUT

GRADE SHOULDER AND PROVIDE 6" THICK CRUSHED SURFACING TOP COURSE AROUND VAULT

2" LONG GALVANIZED C CHANNEL
(1 EACH WALL)

12" X 18" KNOCKOUT
(2 EACH WALL)

1" DIA. GROUND ROD KNOCKOUT

8" DIA. SUMP

GALVANIZED PULL/LIFT IRON
(1 EACH CORNER)

ELEVATION

PLAN VIEW

ROAD C/L

4" PVC CONDUIT W/FIBER

PROPOSED WATERLINE

FIBER OPTIC VAULT

RESTORE SHOULDER - 2 FT. AROUND FIBER OPTIC VAULTS AND CONDUIT WITH 6" THICK CRUSHED SURFACING TOP COURSE.

SHAPE COLUMN

(2) 2-TON LIFT ANCHORS

(2) 5/8" DIA. INSERTS

SPRING ASSISTED GALVANIZED DIAMOND PLATE DOOR W/LOCKING LATCH

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 16, 2014
**CAP OR PLUG**

**TEE**

**90° BEND**

**45° BEND**

**22-1/2° BEND**

**11-1/4° BEND**

**SECTION AT ALL FITTINGS**

---

### THRUST BLOCK REQUIREMENTS

<table>
<thead>
<tr>
<th>Thrust Block &amp; Fitting</th>
<th>Bearing Area Required in Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Block</strong></td>
<td><strong>Fitting</strong></td>
</tr>
<tr>
<td><strong>90° Bend</strong></td>
<td><strong>45° Bend</strong></td>
</tr>
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<td><strong>22-1/2° Bend</strong></td>
<td><strong>11-1/4° Bend</strong></td>
</tr>
</tbody>
</table>

#### PIPE SIZES

- **200**: 1.5, 2.0, 2.5, 2.5
- **225**: 2.0, 2.5, 3.0, 3.0
- **250**: 2.5, 3.0, 3.5, 3.5

#### AREA REQUIREMENTS

- **Tee/Cap or Plug**
- **Test Pressure**

#### NOTES:
1. All concrete blocking shall be poured against dry, undisturbed subgrade. Table is based on 2000 pounds per square foot allowable soil bearing. Weaker soil will require increased bearing area. Use soil bearing load chart.
2. Keep concrete clear of joints and accessories. Use forming as necessary.
3. Horizontal anchor blocking configurations for fittings not shown shall have approval of the P.U.D.
4. The square foot areas required for bearing are calculated by the following formulas:
   - Formulation at Tee & Cap or Plug:
     - **T** = PA
     - **K** = Bearing Area Required in Square Feet
   - Formulations at All Pipe Bends:
     - **T** = 2PA (Sin 1/2 Angle) Where Angle = Degree Bend of the Fitting
     - **K** = Bearing Area Required in Sq. Feet

#### BEARING AREA REQUIRED IN SQUARE FEET

- **Soil**: Safe bearing load = **LBS/SQ. FT.**
  - **Muck, Peat, Etc.**
  - **Deadend & Extension**
  - **Sand & Gravel**
  - **Sand & Gravel Cemented w/ Clay**
  - **Hard Shale**

#### KEY BLOCK USE

The installation of a key block is to be considered only for temporary blocking for 5-10 years. If the pipeline is to remain a deadend or an extension is likely to be more than 10 years away, then a standard block for cap or plug will be installed. Use of key block is to be approved by the district.

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**SKAGIT COUNTY ENGINEERING MANAGER

PUD NO. 1 OF SKAGIT COUNTY ENGINEERING MANAGER

APPROVED ON: MAY 6, 2014

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**STANDARD**

**WT-1**

**SCALE**: NTS

**DATE**: 3-05-05

**REVISIONS**: 5/6/14

**DRAWN BY**: CAS

**APPROVED BY**: GJS

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HORIZONTAL THRUST BLOCKING DETAILS

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**CAP OR PLUG**

**TEE**

**90° BEND**

**45° BEND**

**22-1/2° BEND**

**11-1/4° BEND**

---

**SECTION AT ALL FITTINGS**

---

**KEY BLOCK**

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**BENDING SPECIFICATIONS**

Materials shall include 3/4-inch restraining rods, hex nuts and washers of high strength low alloy steel. Wetting AWWA C-111/90.

**COMPOSITION SPECIFICATIONS**, ROMAC "DUCTILE LUG" OR "RO" EYE BOLTS AND "600" SERIES PIPE RESTRAINING SYSTEM. THRUST RESTRAINT TO BE CALCULATED AT 7500 POUNDS PER BOLT OR AS RECOMMENDED BY ENGINEER. ALL RODS, EYE BOLTS AND PIPE RECONSTANTS ARE TO BE PAINTED TWO SEPARATE BRUSH COATS OF ASPHALT COATING AS APPROVED BY THE ENGINEER TO BE APPLIED. A 3-INCH MINIMUM CLEARANCE IS REQUIRED BETWEEN WATER PIPE AND CONCRETE. SOIL IS TO BE COMPACTED TO 95% REBAR TO BE MINIMUM #2 (3/4") SIZE AND HAVE A MINIMUM 3-INCH CLEARANCE FROM ANY CONCRETE SURFACE.
NOTES

1. CASING PIPE DIAMETER AND THICKNESS DEPENDS ON SPECIFIC APPLICATION AND DESIGN LOAD. SUBMIT CASING PIPE DIAMETER AND THICKNESS TO DISTRICT ENGINEERING DEPARTMENT FOR APPROVAL.
2. CASING PIPE SHALL MEET ASTM A36, WITH MINIMUM 35,000 PSI YIELD STRENGTH.
3. SOILS INVESTIGATION REPORT SHALL BE CONDUCTED PRIOR TO CONSTRUCTION AND REPORT SUBMITTED TO DISTRICT FOR REVIEW.
4. CONTRACTOR IS RESPONSIBLE FOR DESIGN JACKING/RECEIVING PITS, INCLUDING DEWATERING.
5. CASING INSTALLATION SHALL BE PERFORMED IN A MANNER THAT WILL NOT INTERFERE WITH, INTERRUPT OR ENDANGER GROUND SURFACE AND OTHER ADJACENT UTILITIES. CONTRACTOR IS RESPONSIBLE FOR ALL SETTLEMENT FROM CASING PIPE INSTALLATION AND SHALL MAKE RESTORATION TO ALL DAMAGED PROPERTY.
6. CASING SPACER SHALL BE CONSTRUCTED OF TYPE 304 STAINLESS STEEL WITH MINIMUM THICKNESS OF 0.12 GAUGE. RUNNERS SHALL BE MADE OF REINFORCED POLYMER.
7. CASING END SEAL SHALL BE A SYNTHETIC RUBBER SLEEVE ATTACHED TO STAINLESS STEEL BAND CLAMPS. GROUT MAY BE USED IF APPROVED BY DISTRICT.
8. A CONDUIT FOR FIBER OPTIC CABLE MAY BE REQUIRED TO BE INSTALLED. IN THAT CASE, THE CASING PIPE WILL NEED TO BE LARGER AND THE CASING SPACERS AND END SEALS MAY NEED TO BE MODIFIED.
9. ALL PERMITTING FOR CASING PIPE INSTALLATION TO BE COMPLETED BY CONTRACTOR AND APPROVED PERMITS SHALL BE SUBMITTED TO DISTRICT.
10. ALL CARRIER PIPE WITHIN CASING TO BE POLY ENCASED PER DISTRICT STANDARDS, WITH TRACER WIRE ATACHED.
11. CARRIER PIPE WITHIN CASING TO BE PRESSURE TESTED SEPARATELY AND PRIOR TO CONNECTING TO PIPE AT EITHER END.
12. ALL CARRIER PIPE WITHIN THE CASING, AND FOR THE APPROPRIATE DISTANCE ON EITHER SIDE, SHALL HAVE RESTRAINED JOINTS.

PROFILE

CASING SPACERS INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. MINIMUM 3 PER PIPE.

NOTE: CASING END SEAL SHALL BE A CUSTOM PULL-ON OR WRAP-AROUND TYPE.
* CLEAN POTABLE-WATER HOSE ONLY. THIS HOSE MUST BE REMOVED DURING HYDRASTATIC PRESSURE TEST.
NOTES:

1. DEPTH OF BEDDING BELOW PIPE DEPENDANT ON SOIL CONDITIONS. CONSULT WITH ENGINEER.
2. ALTERNATE TRENCH BACKFILL MATERIAL TO BE USED ONLY WITH ENGINEER'S APPROVAL.
3. SURFACE RESTORATION TO MATCH EXISTING PAVEMENT / SHOULDER SECTION.

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