



Separate Water Meter Code Guide

Updated: June 30, 2021

TOPIC: Separate meter requirements and opportunities

CODE: [Portland City Code, Title 21](#)

EFFECTIVE: July 1, 2021

Background

In December 2020, City Council approved an update to Portland City Code Title 21, which included updates to the water metering policy. These new requirements and opportunities to install separate meters went into effect July 1, 2021 after the passage of updated System Development Charges and meter installation costs in the Portland Water Bureau's (Water Bureau) [Annual Rate Ordinance](#).

This update to Title 21 reflects an update in the Water Bureau's policy on water metering. We encourage installing separate meters to conserve water, provide tenants more control over their own water use, help property owners and managers know where water leaks are, and allow more water users access to utility programs, including financial assistance programs. You can find more explanation of these benefits under "Why we made these changes."

All terms used in this document are defined in [Title 21 Chapter 21.04, Definitions](#).

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Code language: Title 21.12.070 Separate Meters

CODE: [Portland City Code, Title 21](#)

- A.** Separate meters are required to supply water to:
 1. Each separate lot, parcel, house or building under separate ownership;
 2. Buildings on multiple contiguous lots under the same ownership;
 3. New mixed-use buildings will be required to have a separate commercial meter;
 4. New non-residential developments which will include irrigation of 1,000 square ft or greater will be required to install a separate irrigation meter.

- B.** Separate meters may be installed to supply water to:
 1. New accessory dwelling units (ADU's);
 2. New residential and multifamily developments with more than one unit;
 3. Developments that are required to upsize their meter; or,
 4. Other developments approved by the Chief Engineer.

Effective Date: This Subsection will go into effect on July 1, 2021.

Regulatory authority

We developed this guide to explain the policy authorized by Portland City Code Section 21.12.070 and inform you about the new choices you have when installing a meter or meters on your property. These procedures implement PCC Section 21.12.070.

What's new

The January 2021 update to Title 21 includes new updates. These updates are reflected in the fiscal year (FY) 2021–22 [Annual Rate Ordinance](#), which includes SDCs and meter installation costs.

- Clarification on when “header services,” when two or more metered services are tapped off a single service pipe, may be used. Using header services lowers the installation cost of separate meters. This is reflected in the FY 2021–22 [Annual Rate Ordinance](#).
- An update to SDCs when installing separate meters on header services. With the new code, SDCs for separate meters installed on a header service assembly are based on the equivalent shared meter size that would be required for the development. For example, if you install both a 5/8” meter and a 1.5” meter on the same property at the same time, we charge you as if you installed a single 2” meter. This “meter equivalent” is a key concept of the updated Title 21 and is reflected in the FY 2021–22 [Annual Rate Ordinance](#).
- An update to meter installation costs to reflect that the cost to install up to six separate meters on a header service is equivalent to the cost to install one shared meter.
- Two new requirements for separate metering of mixed-use buildings and non-residential commercial irrigation uses.

Use of header services

One substantial shift in policy that supports this new Code is the use of header services to install multiple meters serving the same property. A header service is two or more metered services tapped off a single service pipe.

Header services are more efficient and cost effective than using multiple separate services. Header services provide cost savings to customers, reduce the impact to the right-of-way, and lead to more efficient use of resources.

Figure 1, below, is a simple example of a fourplex served by one shared water meter. This type of installation limits the tenant’s ability to control their own water use and limits their eligibility for financial assistance from the Water Bureau and Bureau of Environmental Services (BES). Figure 2 shows the same fourplex with a separate meter for each unit. This installation uses a header service.

Figure 1. One water service line with one shared meter serving a fourplex

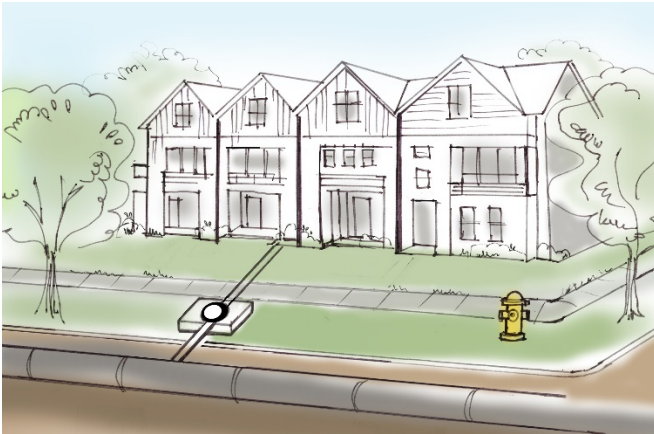
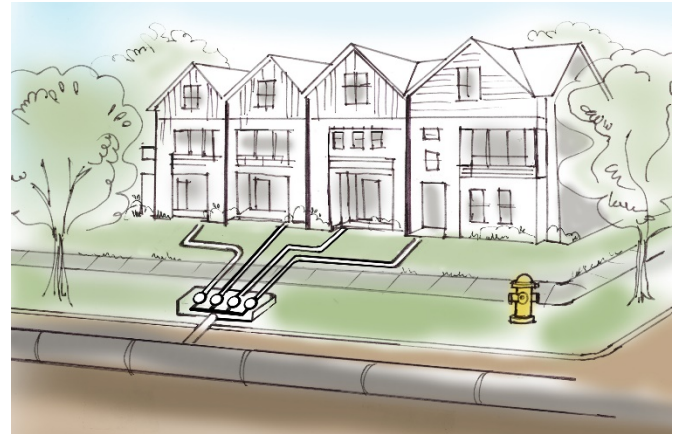


Figure 2. One water service line with a header allows for four separate meters serving a fourplex



Water System Development Charges for separate meters

Water System Development Charges (SDCs) are fees charged by the Water Bureau for new connections to Portland's water system. Through SDCs, new water connections "buy in" to the water system per Oregon Revised Statutes. [We share the method for calculating SDCs on our website.](#)

With the update to Title 21, SDCs for separate meters installed on a header service are based on the equivalent shared meter size that would be required for the development. This "meter equivalent" is a key concept of the updated Title 21 and is reflected in the FY 2021–22 [Annual Rate Ordinance](#).

Cost neutrality for new multifamily developments up to six units

The use of header services and the use of meter equivalents to calculate SDC costs means that a shared meter has the same SDC fee as separate meters for up to six units. We refer to this as cost neutrality. If you are developing a property with seven or more units and want separate meters for each unit, we can't guarantee cost neutrality. Seven or more separate meters on a single property require more infrastructure, such as a larger vault to house the meters, and a site-specific estimate will be needed. If you're developing seven or more units on a single property, we encourage you to request a site-specific estimate. This is because using header services for separate meters might still result in lower costs and other benefits to you and the future tenants.

Why we made these changes

The Water Bureau and Portland City Council decided to update the separate metering policy to encourage and allow a cost-effective way for developers to install separate water meters for certain applications. Separate metering provides some key public benefits, described below.

Tenant control of water use and costs

Many multifamily properties use one meter to serve all the units on the property. For renters at these properties, water use is included in rent, and tenants are not eligible for utility bill discount programs

provided by the Water Bureau and BES. Separate water meters let a tenant control their water use and manage their own water costs.

Access to customer service programs

Separate meters are individually billed, creating a direct relationship between the Water Bureau and our customers. This allows for better communication about water quality, financial assistance options, bill discounts, and access to water efficiency programs.

Water and energy efficiency

Individual meters reduce a tenant's water use. [National studies show](#) that those who receive a water bill that reflects their own consumption use 20% less water than those who don't. The bill gives customers direct feedback about their usage habits. The customer then feels motivated to cut their water use. Because water use also includes energy use to heat water, energy costs are also reduced as customers take shorter showers or run only full dishwasher loads. Conserving energy and water is critical to helping Portland prepare for our changing climate.

Leak management and property maintenance

Individual meters allow a property manager to more quickly find and repair leaks. Many multifamily properties struggle with leaks and high bills due to leaks because leaks can be hard to find. A separate meter, rather than a shared meter, provides the information needed to detect leaks. Finding leaks early supports water efficiency, helps prevent high bills, and helps limit property damage from leaks.

Program fees, charges, and credits

Our [Annual Rate Ordinance](#) outlines the costs of installing water services and meters. The FY 2021–22 Annual Rate Ordinance reflects the policy update to encourage the installation of separate meters for multifamily properties.

Water System Development Charges (SDCs)

Water SDCs for separate meters on header services are based on the single meter equivalent. The charges for FY 2021–22 listed below are extracted from the [Annual Rate Ordinance](#).

Table 1. Fiscal year 2021–22 System Development Charges by meter size (or meter equivalent)

Meter size (or meter equivalent)	System Development Charge
5/8"	\$3,699
3/4"	\$5,548
1"	\$9,247
1½"	\$18,495
2"	\$29,592
3"	\$55,485
4"	\$92,474
6"	\$184,949
8"	\$295,918
10"	\$531,912

Water System Development Charges (SDCs) exemptions and waivers

Qualified affordable housing and mass shelters can apply for an SDC exemption. Qualified accessory dwelling units (ADUs) can apply for an SDC waiver. Please see the [Annual Rate Ordinance](#) for details.

Sewer System Development Charges

Sewer SDCs are not affected by our change in metering requirements.

Meter installation charges

If you would like to install separate meters on your property, we will use header services when possible to maximize efficiency in meter installation. Installing up to six individual meters on a header service is cost neutral in FY 2021–22 compared to installing the equivalent shared meter. Developments with more than six meters might be able to use header services, but we'll need to make a site-specific estimate for the cost of installing separate meters. The meter installation charges for FY 2021–22 listed below are extracted from the [Annual Rate Ordinance](#).

Table 2. Meter installation fees for domestic services

Type of meter installation/meter equivalent	Fee
1" service activation with a 1" or smaller meter (or meter equivalent)	\$375
1" header service activation with a 1" or smaller meter for ADU header service that does not require a new or upsized service	\$375
1" service with a 1" or smaller meter (or meter equivalent), no paving required	\$6,200
1" service with a 1" or smaller meter (or meter equivalent), with paving	\$7,160
1" service with a 1" or smaller meter (or meter equivalent) installed with main extension, no paving required	\$3,125
1" service with a 1" or smaller meter (or meter equivalent) installed with main extension, with paving	\$4,085
1 ½" and 2" service activation	\$3,900
1 ½" and 2" meter (or meter equivalent) with service, no paving required	\$12,755
1 ½" and 2" meter (or meter equivalent) with service, with paving	\$14,045
1 ½" and 2" meter (or meter equivalent) with service installed with main extension, no paving required	\$7,175
1 ½" and 2" meter (or meter equivalent) with service installed with main extension, with paving	\$8,465
3" meter (or meter equivalent) with service, no paving required	\$32,585
3" meter (or meter equivalent) with service, with paving	\$34,510
3" meter (or meter equivalent) with service installed with main extension, no paving required	\$15,415
3" meter (or meter equivalent) with service meter installed with main extension, with paving	\$17,345
4" meter (or meter equivalent) with service, no paving required	\$33,185
4" meter (or meter equivalent) with service, with paving	\$35,115
4" meter (or meter equivalent) with service installed with main extension, no paving required	\$16,020
4" meter (or meter equivalent) with service installed with main extension, with paving	\$17,945
6" meter (or meter equivalent) with service, no paving required	\$38,315
6" meter (or meter equivalent) with service, with paving	\$40,245
6" meter (or meter equivalent) with service installed with main extension, no paving required	\$23,450
6" meter (or meter equivalent) with service installed with main extension, with paving	\$25,375

When are separate meters required?

Separate meters are required for four types of development. Below are excerpts from Title 21, descriptions of what the excerpts mean, and examples of what type of development fall under each requirement. We also explain when header services can be used and how SDCs apply to different types of development. The meter installation costs listed in the examples below use the “with paving” rate, which is most common.

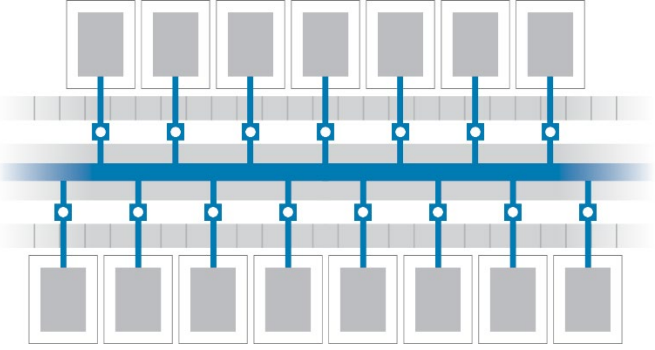
These requirements are for domestic water meters only. Requirements for fire lines have not changed and are not part of this Code guide. Fire line requirements can be found in Title 21.12.220.

A1: Separate meters are required to supply water to each separate lot, parcel, house, or building under separate ownership.

Paragraph A1 is not a new requirement. Each separate lot must have a water service line and meter. This requirement applies to new and existing developments. If your property has an existing service, this requirement will go into effect when you apply for a building permit, or when a new service installation is needed or requested to serve a lot or building under separate ownership. This requirement doesn’t apply to condominiums, but we encourage developers to consider installing separate meters when possible.

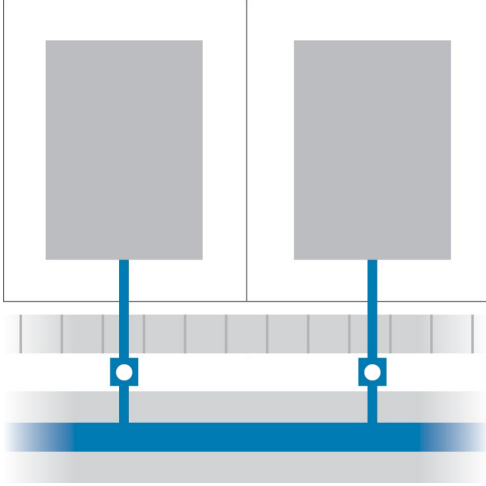
Use of header services for A1: Header services cannot be used for meters serving separate lots, regardless of same or separate ownership. A header service can only serve one lot.

SDC costs for A1: Each separate lot is a separate development. SDCs will be assessed per lot.

Example A1-1: 15 separate homes on separate lots You are building 15 homes on separate lots. You must install separate water services and meters for each lot that will be individually owned. In other words, you’ll have to install 15 services lines and meters.	
Meter configuration	Each lot has its own service line and ¾" meter
Diagram	
SDC	\$5,548 x 15 = \$83,220
Installation	\$7,160 x 15 = \$107,400
Total	\$190,620

Example A1-2: Dividing a lot

You're a developer, and you split a lot into two separate lots. The new lot must have its own separate water service line and separate meter; it cannot be served by a header.

Meter configuration	Installing new 1" service and 1" meter	
Diagram		
SDC	\$9,247	
Installation	\$7,160	
Total	\$16,407	

A2: Separate meters are required to supply water to buildings on multiple contiguous lots under the same ownership.

This requirement is a clarification of a previous requirement. A single building spanning multiple lots, all under the same ownership, can be served by a single meter unless requirements in A3 and A4 are triggered. If you have multiple buildings on separate lots, all under the same ownership, each lot must have its own separate meter.

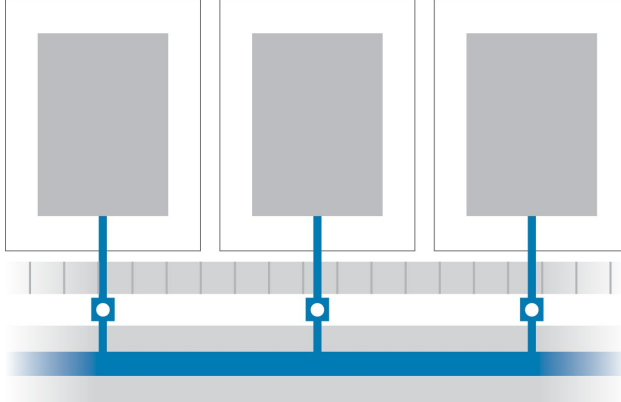
This requirement applies to new and existing development. If your property has an existing service, this requirement will go into effect when the review of a building permit requires a new service installation or meter upsize, or when one is requested to serve a separate building on a separate lot under the same ownership. Campuses will be reviewed on a case-by-case basis.

Use of header services for A2: Header services cannot be used for meters serving separate lots.

SDC costs for A2: Each separate lot is a separate development, and SDCs will be assessed per lot.

Example A2-1: Three separate lots under the same owner

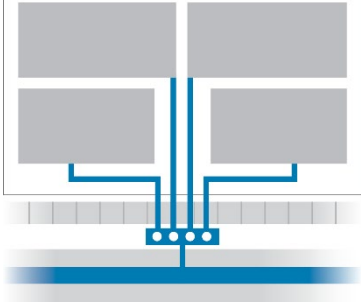
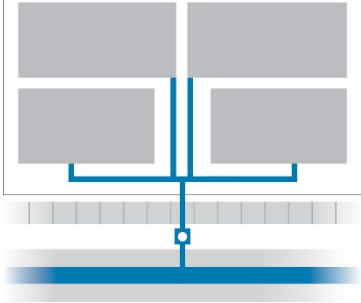
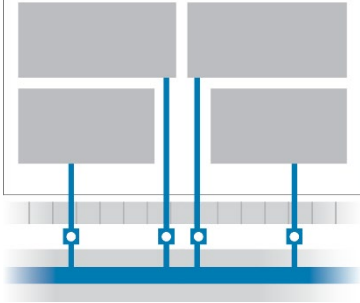
You're a developer who owns three contiguous lots (that is, the three lots are next to each other, with no other lot between them) and are constructing one building on each lot. You must install a separate meter for each lot. Meter size is based on the fixture count of each of the buildings. For this example, we'll use one 1" meter per building. If any of the buildings are of mixed-use, such as for commercial and residential dwelling occupancies, requirements under paragraph A3 will apply. We also encourage you to install individual meters for each tenant, and dwelling space.

Meter configuration	Three new water service lines and three 1" meters	
Diagram		
SDC	\$9,247/lot x 3 = \$27,741	
Installation	\$7,160/lot x 3 = \$21,480	
Total	\$49,221	

Example A2-2: Multiple buildings on one lot (four detached dwelling units)

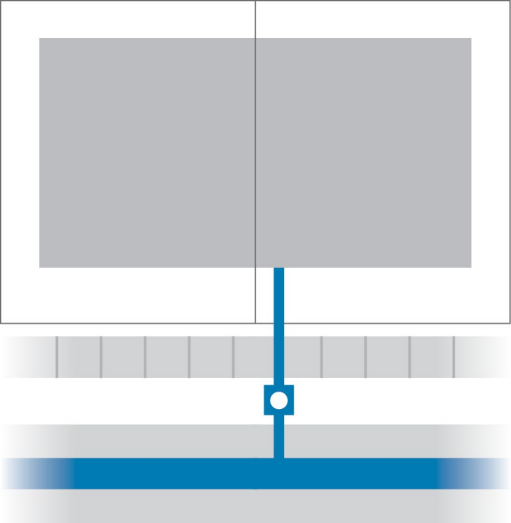
You're a developer building four detached dwelling units/condos (multiple buildings on one lot) under the same ownership. While you're not required to have separate meters for each building, we encourage you to install individual meters for each building, tenant, and dwelling space. You have three options:

1. The four condos can be served with water through separate meters installed on a header.
2. The four condos can share a meter.
3. Each condo could have its own water service line and meter.

Meter configuration	Option 1: One lot with four condos with header service and four 3/4" separate meters	Option 2: One lot with four condos with shared 1.5" meter	Option 3: One lot with four condos with four separate services and four 3/4" separate meters
Diagram			
SDC	\$18,495	\$18,495	4 x \$5,548 = \$22,192
Installation	\$14,405	\$14,405	4 x \$7,106 = \$28,640
Total	\$32,900	\$32,900	\$50,832

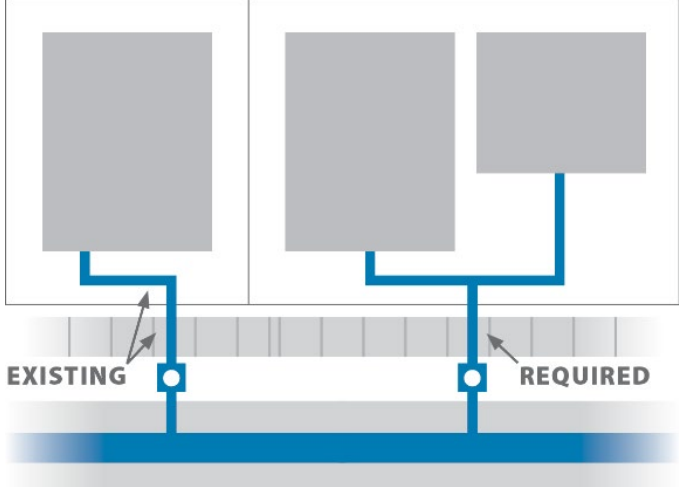
Example A2-3: A single building covering two lots

You're a developer who is constructing a single building on two lots. The building is a "shell building" with unknown tenants and uses. The building may have one water service and one meter. If the building will be used for both commercial and residential use, requirements under section A3 may apply.

Meter configuration	One water service and one 1.5" meter	
Diagram	 The diagram illustrates a building footprint divided into two equal rectangular sections by a vertical line, representing two lots. A single vertical blue line, representing a water service, originates from the center of the bottom boundary of the building footprint and extends downwards. This line passes through a horizontal grey band representing the ground level, where it is connected to a small blue square with a white circle in the center, representing a meter. Below the meter, the line continues as a horizontal blue bar, representing the water service connection to the street.	
SDC	\$18,495	
Installation	\$14,405	
Total	\$32,900	

Example A2-4: Separate lots with new development

You own two lots, each with a separate building on it. The two buildings are served by a single water meter. You decide to construct a new building on one of the lots. This triggers a requirement to install a larger water service and meter. If the meter is located on the developing lot's frontage, then only a meter upscale is required. If the meter is located on the other lot, then the developing lot must install a separate water service line and meter, sufficient for that meter to serve that lot exclusively. The existing meter can remain to serve the site that isn't being developed.

Meter configuration	New development triggers separation of services and requires new 5/8" meter	
Diagram		
SDC	\$3,699	
Installation	\$7,160	
Total	\$10,859	

A3: New mixed-use buildings will be required to have a separate commercial meter.

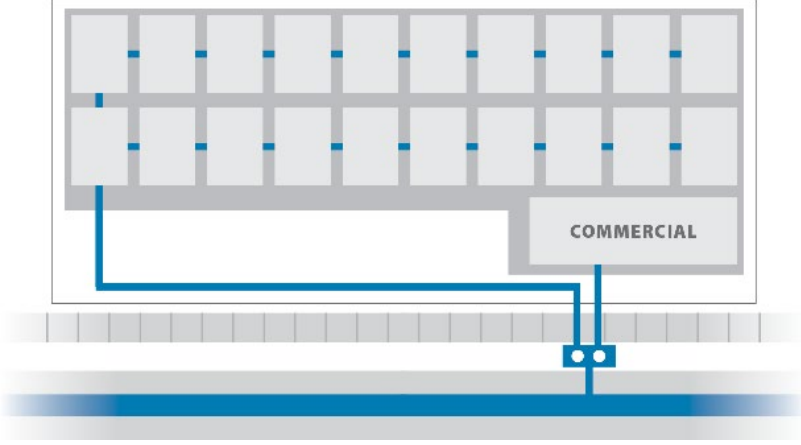
This is a new requirement. Newly constructed mixed-use buildings must have a separate commercial meter and a separate meter for the noncommercial/residential portion of the buildings. This requirement does not apply to remodels.

Use of header services for A3: Header services can be used for the separate meters serving both residential and commercial spaces in mixed-use developments.

SDC costs for A3: When using a header service, SDCs will be assessed for the overall development. The development will be charged for the equivalent meter.

Example A3-1: New mixed-use building

You're constructing a new mixed-use building. The building will have 20 residential units and one commercial space. You must install at least one meter for the residential areas and at least one meter for the commercial area. The commercial meter and residential meter can use a header service if the service is appropriately sized for the forecasted demand. You may install additional water meters to separately meter the individual dwelling spaces and each retail space, as described in B2, below, but you're not required to do so.

Meter configuration	One water service line with header service for two meters: one 5/8" for the commercial uses, and one 1.5" for the residential units (2" equivalent)
Diagram	 A schematic diagram of a building's water service. A horizontal header pipe runs along the bottom of the building footprint. From this header, vertical lines branch out to connect to a grid of 20 small rectangular units (representing residential units) and one larger rectangular unit labeled 'COMMERCIAL'. Below the building footprint, a thick blue line represents the main water service line. A vertical pipe with a meter symbol (two circles) connects this main line to the header pipe inside the building.
SDC	\$29,592
Installation	\$14,045
Total	\$43,637

A4: New non-residential developments which will include irrigation of 1,000 square ft or greater will be required to install a separate irrigation meter.

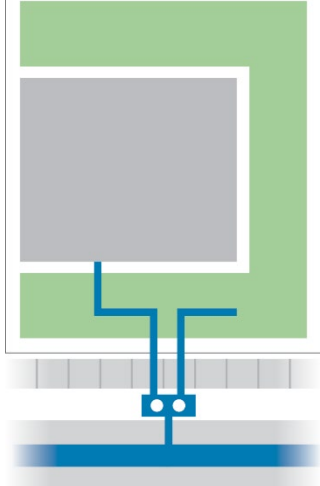
This is a new requirement for permanently irrigated areas totaling 1,000 square feet or more (including areas irrigated in the right-of-way). This requirement only pertains to non-residential commercial buildings and mixed-use buildings. If irrigation is only temporary, it doesn't need to be counted as part of the total irrigated area. However, it must be clearly marked on the site plan as temporary, and the plan must state that the irrigation hardware will be removed within two years.

Use of header services for A4: Header services can be used for the separate meters serving the irrigation and the commercial spaces in the development, if the primary domestic service size is appropriate.

SDC costs for A4: When using a header service, SDCs will be assessed for the overall development. The development will be charged for the equivalent meter.

Example A4-1: Commercial building with required irrigation meter

You're developing a new commercial building that will have 1,200 total square feet of irrigated areas, including landscaped areas and an ecoroof. You must install a separate meter for the irrigation system. This meter can be served by the same water service line as the primary domestic water service using a header installation method.

Meter configuration	Header service for two meters: one 1" for domestic use and one 5/8" for the irrigation system (1.5" equivalent)
Diagram	 A schematic diagram showing a header installation. A green rectangular area represents the irrigated area, with a grey square inside representing a building. A blue line representing the water service line enters from the bottom, passes through a meter assembly (indicated by two small circles), and then splits into two horizontal branches. One branch goes up into the building, and the other goes up into the green area, illustrating how a single service line can serve two separate meters via a header.
SDC	\$18,495
Installation	\$14,045
Total	\$32,540

When are separate meters allowed and encouraged?

Separate meters are allowed and encouraged for four types of development. Below are excerpts from Title 21, a description of what they mean, and examples of what types of development fall under each requirement. The meter installation costs listed in the examples below are using the “with paving” rate, which is most common.

B1: Separate meters may be installed to supply water to new accessory dwelling units (ADUs).

With separate metering, long-term ADU tenants can pay the City directly for their own sewer, stormwater, and water utility charges. This lets them access financial assistance programs and water conservation services provided by the Water Bureau. Having a separate meter for an ADU can also prevent disputes between an owner and tenant about water consumption and charges owed. We've updated our meter installation policies to encourage the use of header water services to separately meter ADUs cost-effectively. The [Annual Rate Ordinance](#) provides rates for separate meter installations and SDCs specific to ADUs.

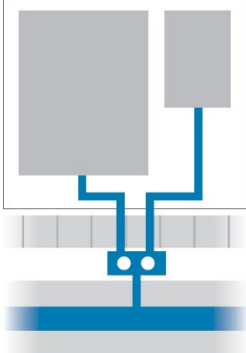
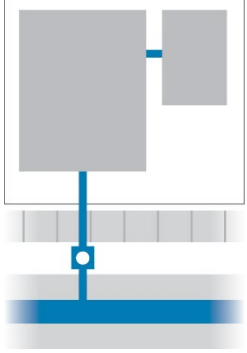
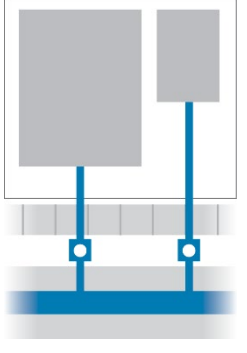
Use of header services for B1: Header services can be used for the separate meters serving an ADU, if the primary domestic service size is appropriate.

SDC costs for B1: SDCs will be assessed for the overall development. The development will be charged for the equivalent meter.

Example B1-1: One accessory dwelling unit (ADU)

You're constructing a new ADU above the garage of your single-family home. You have three options for serving water to the ADU:

1. The ADU can be served with water through a separate meter installed on a header off of the existing water service line to the primary house, if the service line is adequately sized. This installation would use the existing properly sized water service line as the header.
2. The ADU can be served using the same meter as the primary house by connecting to the water supply of the primary house, if the service line and meter are adequately sized.
3. A new separate meter and water service line could be installed to serve the ADU.

Meter configuration	Option 1: Install a header service with one new 5/8" separate meter	Option 2: No new water service line, but meter upsize required for shared meter	Option 3: Install new separate water service line with one new 5/8" meter
Diagram			
SDC	\$3,699 (waiver available)	\$1,849–\$5,548 (depending on meter sizes)	\$3,699 (waiver available)
Installation	\$375	none	\$7,160
Total	\$4,074	\$1,849–\$5,548	\$10,859

Example B1-2: Six homes with two ADUs on each lot

You're a developer, and you're building six new homes. Each home will be on its own lot and have two ADUs. In other words, each lot will have a primary house and two ADUs for a total of three dwellings per lot. Each of the six lots must have its own water service line and water meter. A separate water meter for each ADU is also possible, encouraged, and more economically feasible with header services. You have two options to serve the ADUs:

1. The ADUs can each have their own separate meter installed on a header off of the existing water service line to the primary house, if the service line is adequately sized. This installation would use the properly sized water service line for the primary house as the header.
2. The ADUs can use the same meter as the primary house by connecting to the water supply of the primary house, if the service line and meter are adequately sized.

Meter configuration	Option 1: Header services: separate meters for six new homes, each with two ADUs = one ¾" meter (for the house) and two 5/8" meters (one for each ADU) = 1" meter equivalent	Option 2: Six new homes, each with two ADUs using one shared meter = six 1" meters
Diagram		
SDC	6 x \$9,247 = \$55,482	6 x \$9,247 = \$55,482
Installation	6 x \$7,160 = \$42,960	6 x \$7,160 = \$42,960
Total	\$98,442	\$98,442

B2: Separate meters may be installed to supply water to new residential and multifamily developments with more than one unit.

This is a new policy that encourages developers of new multifamily housing to install separate meters for each dwelling unit. Whether you can install separate meters for each unit depends on the space available in the right-of-way or space on private property where an easement would be granted. See the “Easements” section below for more details.

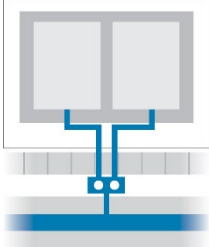
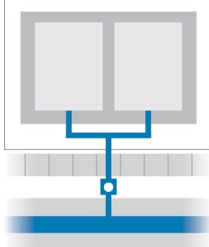
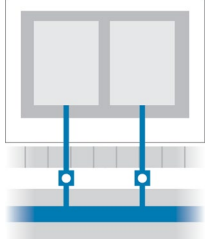
Use of header services for B2: Header services can be used for separate meters on new ADUs and multifamily developments, if the primary domestic service size is appropriate.

SDC costs for B2: SDCs will be assessed for the overall development. The development will be charged for the equivalent meter.

Example B2-1: New duplex

You’re building a duplex. You have three options for serving water to the building:

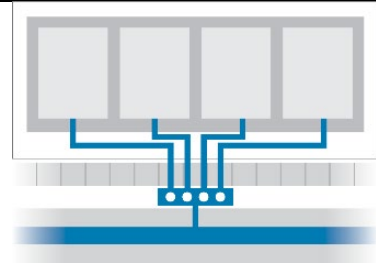
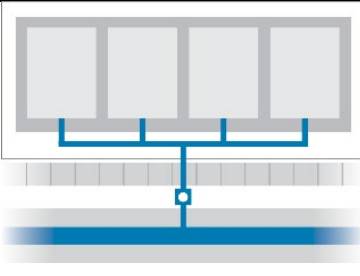
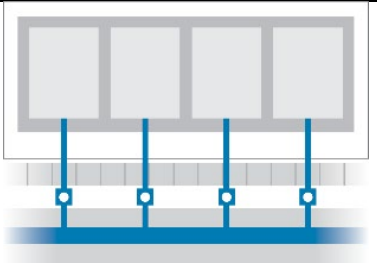
1. The building could be served by one water service line, with a header service feeding two separate meters, one for each dwelling.
2. The building can be served by one shared domestic meter.
3. The building could be served by two separate water service lines feeding two separate meters, one for each dwelling.

Meter configuration	Option 1: New header service for two meters (3/4" meter equivalent)	Option 2: New 3/4" shared meter	Option 3: Two new separate water service lines with two 5/8" meters
Diagram			
SDC	\$5,548	\$5,548	$\$3,699 \times 2 = \$7,398$
Installation	\$7,160	\$7,160	$\$7,160 \times 2 = \$14,320$
Total	\$12,708	\$12,708	\$21,718

Example B2-2: New fourplex

You're constructing a new four-unit multifamily building. You have three options for providing domestic water service:

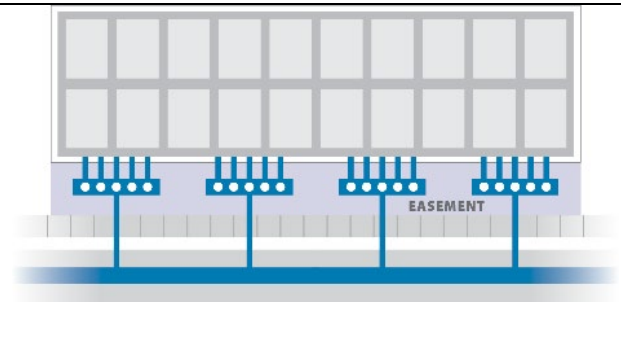
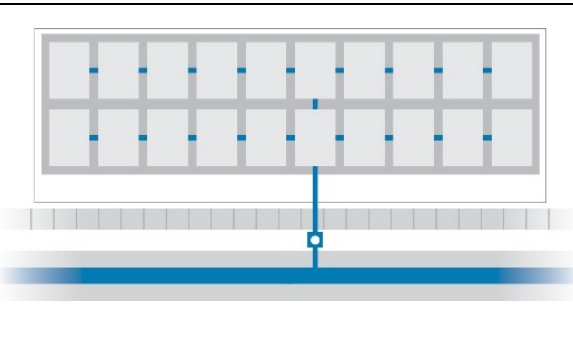
1. The building could be served by one water service line with a header service serving four separate meters.
2. The building can be served by one shared domestic meter.
3. The building could be served by four separate water service lines feeding four separate meters.

Meter configuration	Option 1: Header service feeding four new 3/4" meters (1.5" meter equivalent)	Option 2: New 1.5" shared meter	Option 3: Four new 3/4" meters with separate water service lines
Diagram			
SDC	\$18,495	\$18,495	$\$5,548 \times 4 = \$22,192$
Installation	\$14,045	\$14,045	$\$7,160 \times 4 = \$28,640$
Total	\$32,540	\$32,540	\$50,832

Example B2-3: 20-unit multifamily building

You're constructing a new 20-unit multifamily building. You have two options for providing domestic water service:

1. You can request a site-specific cost estimate from the Water Bureau to install separate meters for each unit.
2. The building can be served by one shared domestic meter.

Meter configuration	Option 1: Site-specific estimate for header service to provide separate meters for each unit	Option 2: New 1.5" shared meter
Diagram		
SDC	\$18,495	\$18,495
Installation	Variable depending on installation costs	\$14,045
Total	TBD	\$32,540

B3: Separate meters may be installed to supply water to developments that are required to up-size their meter

When you're redeveloping a building or a site, you might be required to upsize or change the building's water meter to meet the new level of demand. You can choose to install separate meters on a header service. You can do this only if there is sufficient capacity in the existing service as approved by the Water Bureau. As in some other examples provided above, we encourage you to install a header service instead of upsizing a meter on an existing adequately sized service line.

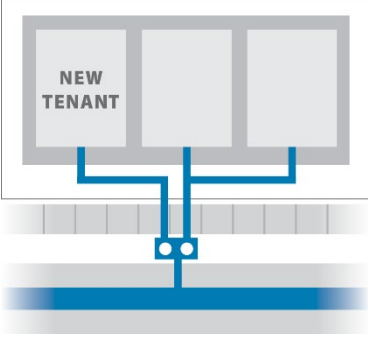
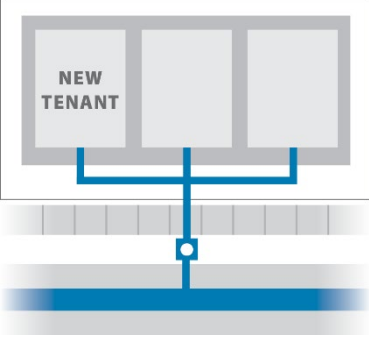
Use of header services for B3: Header services are approved for separate meters serving more than one unit, if the primary domestic service line size is adequate.

SDC costs for B3: The Water Bureau will assess SDCs for the overall development and will charge the development for the equivalent meter.

Example B3-1: Commercial building with new tenant and increased water use

A new tenant will occupy space in an existing commercial building. This increases the building's demand for water and requires a larger meter: the new demand requires a 2" meter. You have two options:

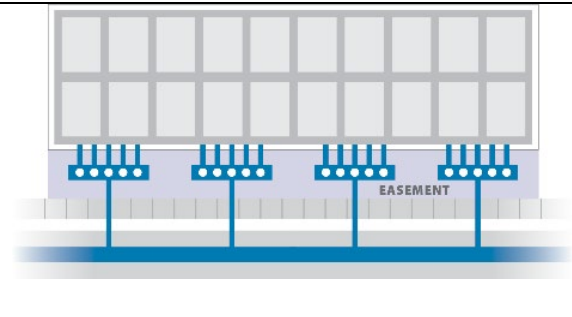
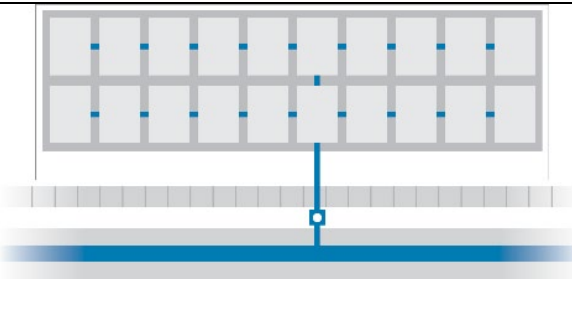
1. If the existing water service line is adequately sized, it can be converted into a header service, and a new, separate meter for this space can now be installed.
2. The existing meter may be upsized to serve all uses.

Meter configuration	Option 1: One new 5/8" meter for the new tenant use installed using a header service assembly off of the existing service line	Option 2: Upsize existing 1.5" meter to a 2" meter
Diagram		
SDC	\$3,699	\$11,097
Installation	\$375	\$770
Total	\$4,074	\$11,867

Example B3-2: Redevelopment requires increase in meter size, options for metering

You're a building owner who is planning to convert existing commercial spaces into 20 micro living units. The existing water service line is large enough for the new demand, but the current meter is too small. To convert the building, you'll need to increase the size of the meter. You can also request an assessment from the Water Bureau about the potential to install meters for each unit. Whether you can install separate meters for each unit depends on the ability to install a header and on space available in the right-of-way or space on private property where an easement would be granted. See the "Easements" section below for more details. You have two options:

1. Install 20 separate meters, one for each unit.
2. Upsize existing meter to have one adequately sized shared meter.

Meter configuration	Option 1: Header service feeding 20 meters (1.5" meter equivalent)	Option 2: Shared meter: Upsize existing meter
Diagram		
SDC	Site-specific estimate required (minus credit for existing meter)	Site-specific estimate required (minus credit for existing meter)
Installation	Site-specific: variable depending on installation costs	Site-specific: variable depending on installation costs
Total	To be determined	To be determined

B4: Separate meters may be installed to supply water to other developments approved by the Chief Engineer.

We know that there may be some new developments where separate meters would have public benefits and benefits to the developer and tenants. We'll consider allowing separate meters for other types of development.

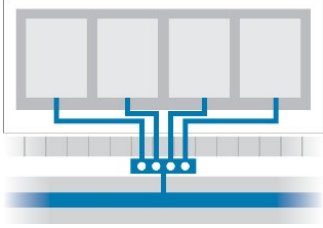
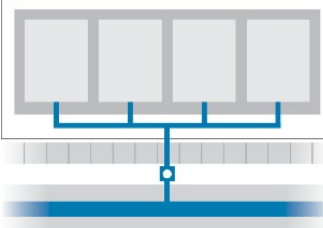
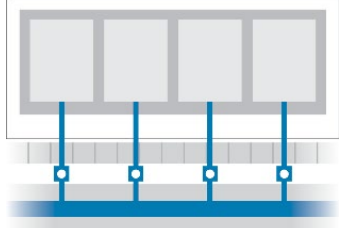
Use of header services for B4: Header services are approved for the separate meters serving more than one unit if the primary domestic service size is appropriate.

SDC costs for B4: The Water Bureau will assess SDCs for the overall development. We'll charge the development for the equivalent meter.

Example B4-1: New commercial development with four tenant spaces, options for metering

You're building a new commercial development with four separate tenant spaces. You can choose to serve water in one of three ways:

1. The building could be served by one water service line with a header service serving four separate meters.
2. The building can be served by one shared domestic meter.
3. The building can be served by four separate water service lines and four separate meters.

Meter configuration	Option 1: Four new 5/8" meters and header service with header	Option 2: New 1" shared meter	Option 3: Four new separate water service lines with four 5/8" meters
Diagram			
SDC	\$9,247	\$9,247	$\$3,699 \times 4 = \$14,796$
Installation	\$7,160	\$7,160	$\$7,160 \times 4 = \$28,640$
Total	\$16,407	\$16,407	\$43,436

Location of separate meters

As outlined in Title 21 section 21.12.250, Location of Meters Inside City, the Water Bureau standard is to install water meters in the public right-of-way. This allows for unobstructed access to meters and water services for maintenance and meter reading. Newly installed separate meters must meet this requirement unless the developer and the Water Bureau agree upon a different location (typically an easement).

Guidance for separate meters in the right-of-way

Whether adding one additional meter or several meters inside a meter box or vault, the site utility plan that accompanies the permit application must clearly show the meter location(s). Some general rules of thumb are:

- All water meters are installed adjacent to the curb in the furnishing zone or right-of-way, but not in the wing portion of a driveway.
- All water meter boxes and vaults must be at least three feet away from side property lines and five feet away from all obstructions, above- and below-ground utilities, and power poles. Distance is measured from the outside edges of the box or vault.

- A new water service line cannot be installed in the same location as an existing line. New service lines must be installed 18"–36" away from the existing line. More space might be required depending on the tap size, main material and age, etc.
- Please refer to the [Water Bureau Development Services webpage](#) for more information regarding permit submittal requirements and standard separations.

Standard drawings for separate meter installation

The Water Bureau has developed standard drawings to show how header service assemblies can be used to install separate meters. See Appendix A for detailed drawings.

Easements for separate meters on private property

Sometimes, space in the right-of-way is limited, and new meters can't be installed there. In this instance, we'll consider placing a meter on private property within an easement granted to the City of Portland for Water Bureau access. See sample easement contract in Appendix B for details.

The minimum requirements for locating Water Bureau meters and associated facilities within an easement are as follows:

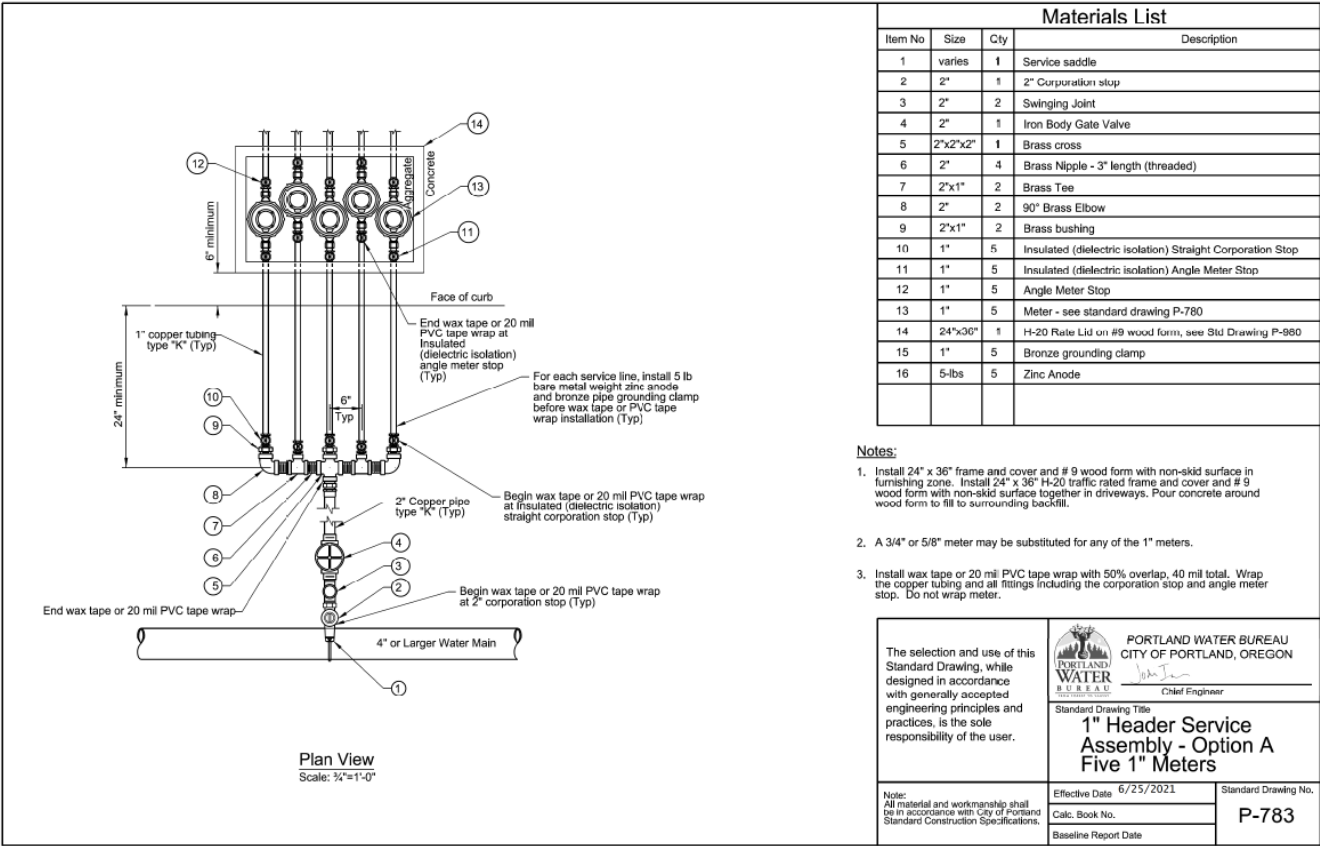
- All water vaults/boxes must be placed adjacent to the right-of-way and not more than 10 feet into the private property to ensure safe, unobstructed access to Water Bureau assets.
- The easement area must remain free of encroachments and available to Water Bureau staff at all times.
- The site utility plan must clearly show the exact location of the easement area with all dimensions labeled. This must include distances from the nearest property line, building, or private driveway.
- The developer must provide a legal description and exhibit map of the easement area. These items must be prepared by a licensed surveyor at the developer's expense and provided to the Water Bureau. Staff in the bureau's right-of-way department will include these items as exhibits in the easement document.
- All piping and valves between the water main and vault, as well as the vault itself, must be within the right-of-way or the easement area.
- No part of the vault can be farther than 10 feet from the right-of-way.
- The easement area must extend five feet past the meter box/vault on all sides. Any associated piping from the main to the vault/meter box area will need, at minimum, a 10-foot-wide easement centered on the piping. For example, a 2' x 3' meter box abutting the public right-of-way would have an easement area of 91 square feet (7' x 13'). A 2' x 3' meter box located at the maximum distance of 10 feet into private property would have an easement area of 186 square feet (12' x 13' over the meter box, plus 10' x 3' centered on the piping). See example diagram below.

Appendixes

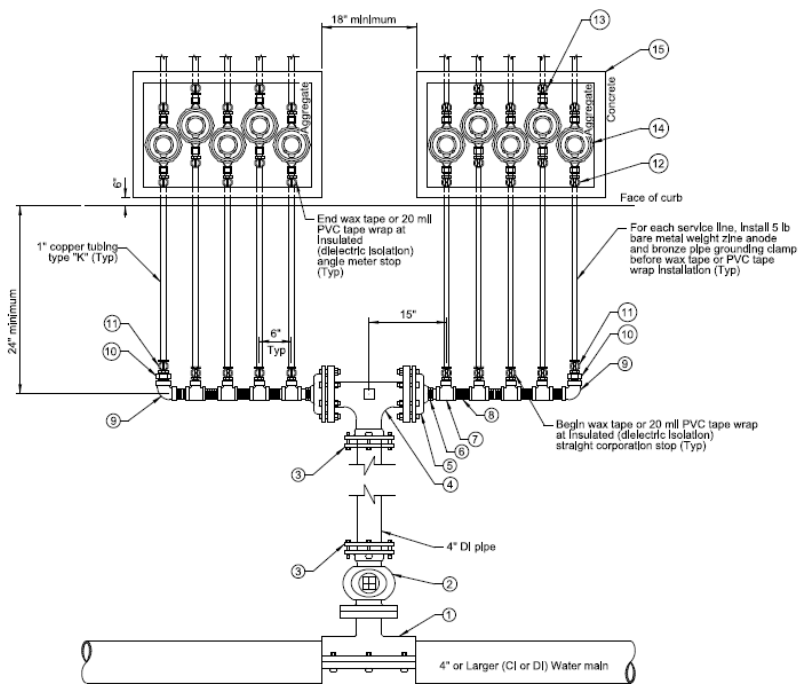
Appendix A: Standard drawings for separate meters

P783: 1" Header service assembly—Option A (five 1" meters).

NOTE: The Water Bureau will allow up to six meters. This standard drawing will be updated to reflect that.



P784: 1" Header service assembly—Option A (ten 1" meters)




Plan View
Scale: $\frac{3}{4}''=1'-0''$

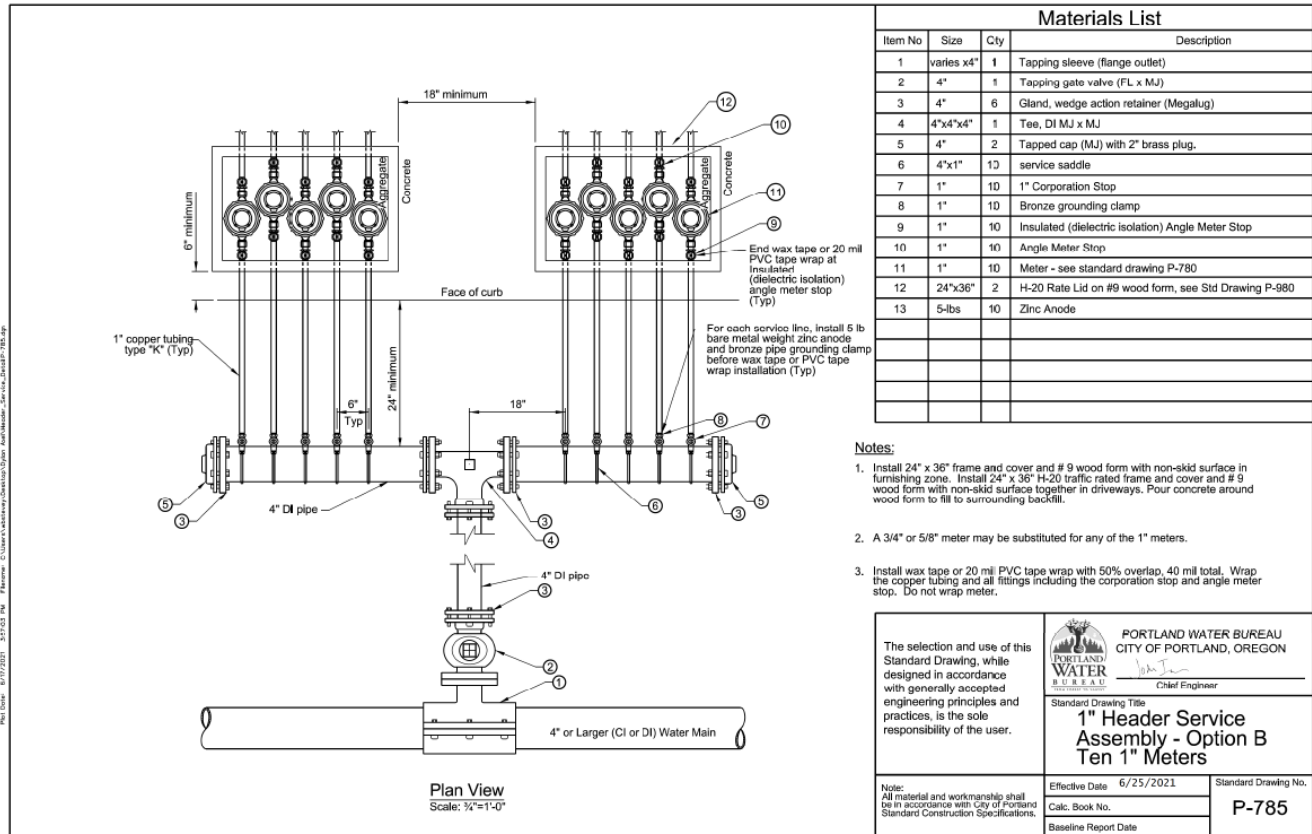
Item No	Size	Qty	Description
1	varies x4"	1	Tapping sleeve (flange outlet)
2	4"	1	Tapping gate valve (FL x MJ)
3	4"	2	Gland, wedge action retainer (Megalug)
4	4"x4"x4"	1	TEE, DI MJ x MJ
5	4"x2"	1	Tapped plug (MJ x MJ)
6	2"	2	Brass Nipple (field verify length)
7	2"x1"	8	Brass Tee
8	2"	8	Brass Nipple - 3" length (threaded)
9	2"	2	90° Brass Elbow
10	2"x1"	2	Brass bushing
11	1"	10	Insulated (dielectric isolation) Straight Corporation Stop
12	1"	10	Insulated (dielectric isolation) Angle Meter Stop
13	1"	10	Angle Meter Stop
14	1"	10	Meter - see standard drawing P-780
15	24"x36"	2	1/20 Rate Lid on #9 wood form, see Std Drawing P-980
16	1"	1	Bronze grounding clamp

Notes:

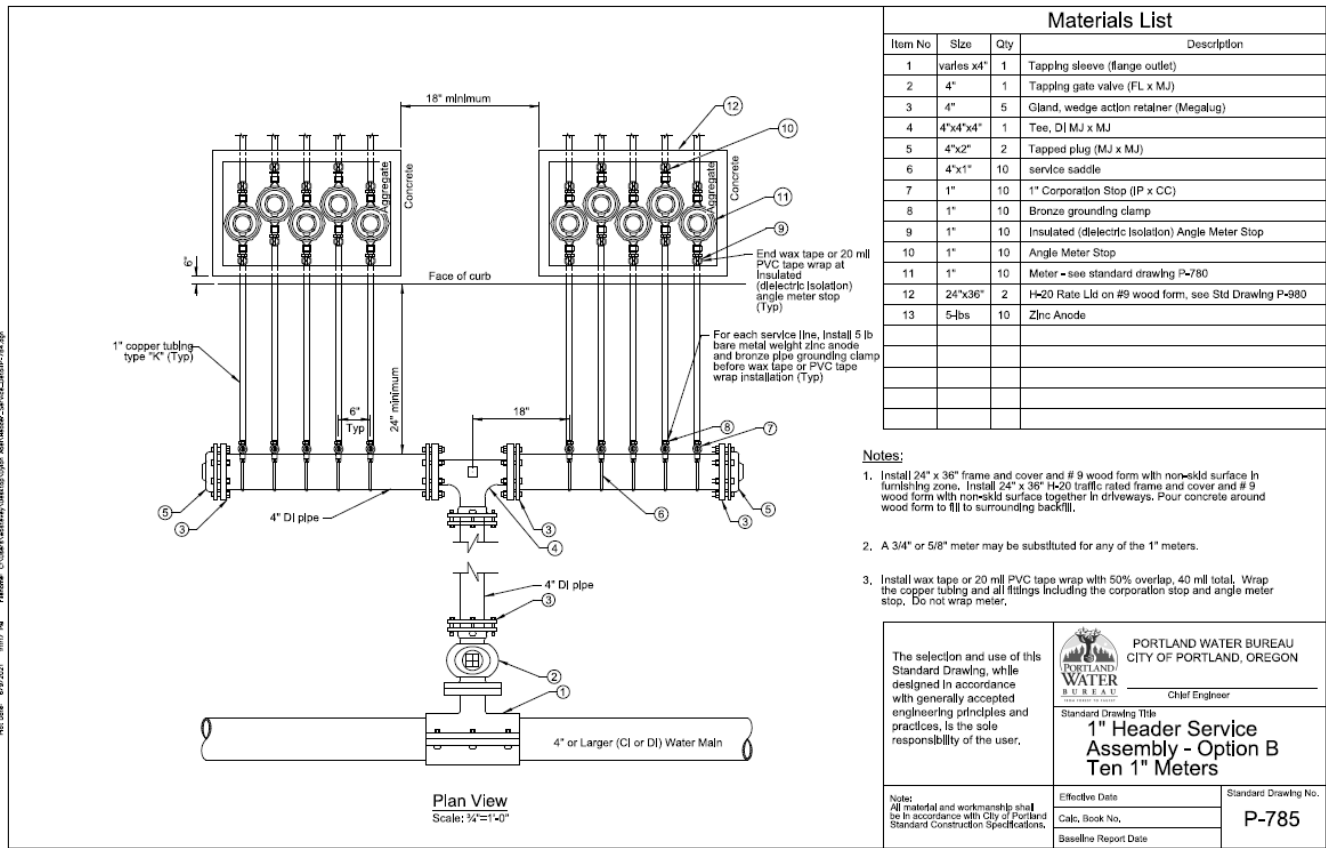
1. Install 24" x 36" frame and cover and # 9 wood form with non-skid surface in surrounding zone. Install 24" x 36" H-20 traffic-railed frame and cover and # 9 wood form with non-skid surface together in driveways. Pour concrete around wood form to fill to surrounding backfill.
2. A 3/4" or 5/8" meter may be substituted for any of the 1" meters.
3. Install wax tape or 20 mil PVC tape wrap with 50% overlap, 40 mil total. Wrap the copper tubing and all fittings including the corporation stop and angle meter stop. Do not wrap meter.

<p>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.</p>	 <p>PORTLAND WATER BUREAU <small>of the CITY OF PORTLAND</small></p>	<p>PORTLAND WATER BUREAU CITY OF PORTLAND, OREGON</p>
<p>Notes: All material and workmanship shall be in accordance with City of Portland Standard Construction Specifications.</p>	<p>Standard Drawing Title 1" Header Service Assembly - Option A Ten 1" Meters</p>	<p>_____ Chief Engineer</p>
	<p>Effective Date Calc. Book No. Baseline Report Date</p>	<p>Standard Drawing Number P-784</p>

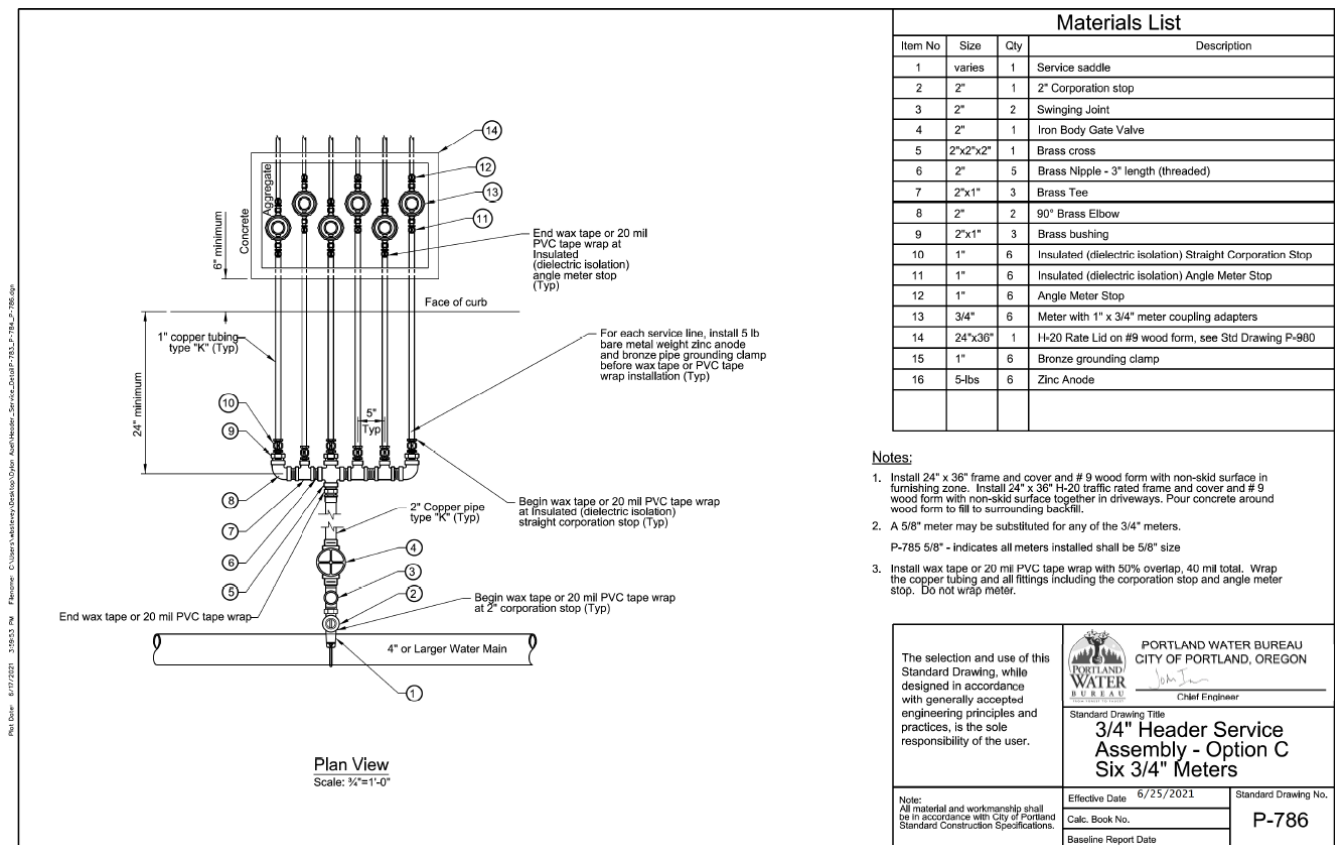
P785: 1" Header service assembly—Option B (ten 1" meters)



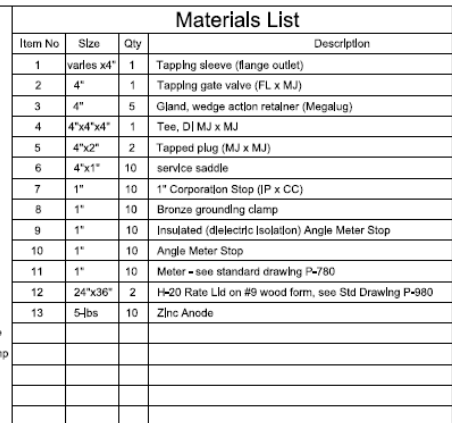
P785: 1" Header service assembly—Option B (ten 1" meters)




P786: 3/4" Header service assembly—Option C (six 3/4" meters)



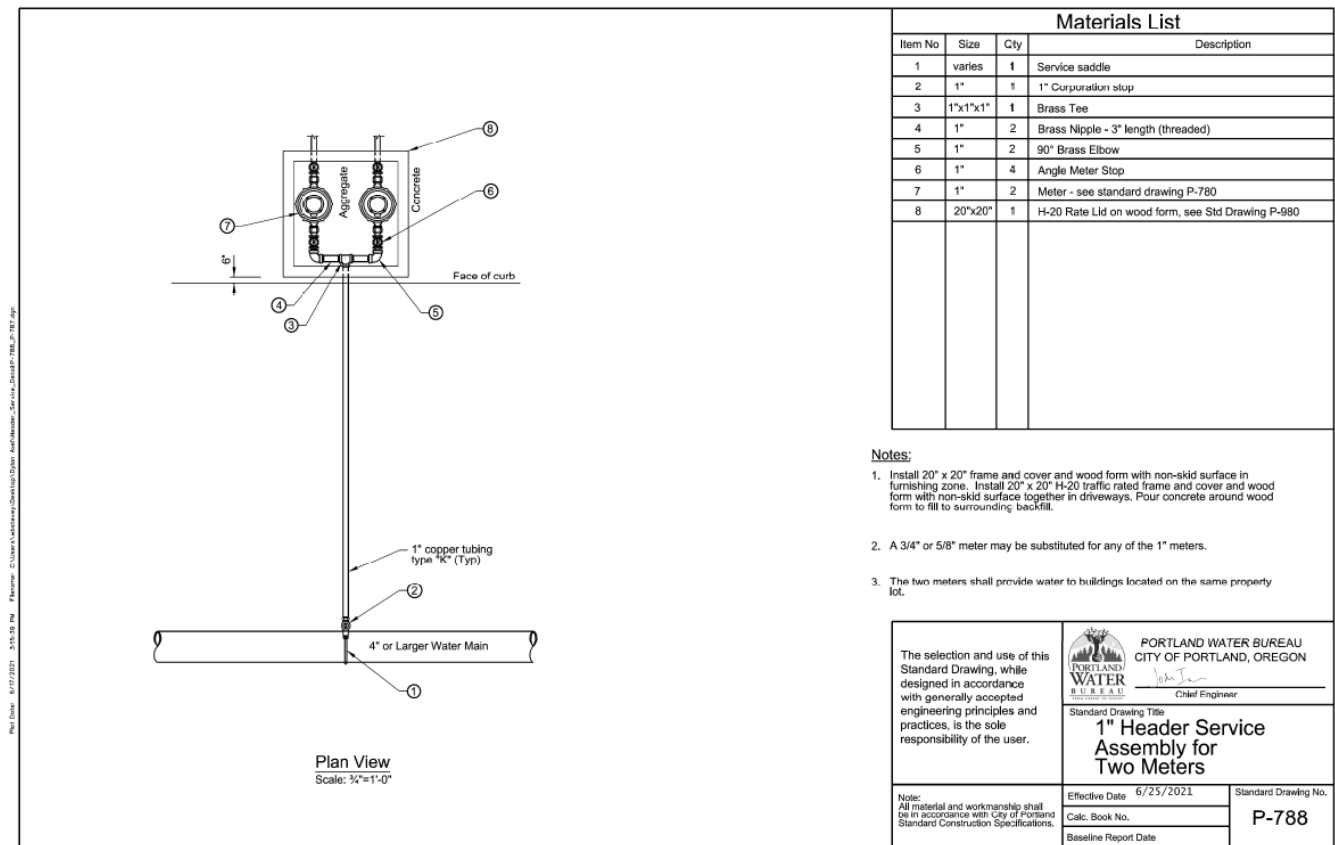
Print Date: 6/9/2021 11:52:22 AM Filename: C:\Users\labsterary\Desktop\Olan Abafleender_Service_Data\IP-786P-787.jpg



1. Install 24" x 36" frame and cover and # 9 wood form with non-skid surface in furnishing zone. Install 24" x 36" H-20 traffic rated frame and cover and # 9 wood form with non-skid surface together in driveways. Pour concrete around wood form to fill to surrounding backfill.
2. A 3/4" or 5/8" meter may be substituted for any of the 1" meters.
3. Install wax tape or 20 mil PVC tape wrap with 50% overlap, 40 mil total. Wrap the copper tubing and all fittings including the corporation stop and angle meter stop. Do not wrap meter.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.	 <div>PORTLAND WATER BUREAU CITY OF PORTLAND, OREGON</div> <div>_____ Chief Engineer</div>	
	Standard Drawing Title <div>1" Header Service Assembly - Option D Ten 1" Meters</div>	
	Notes All material and workmanship shall be in accordance with City of Portland Standard Construction Specifications.	Effective Date Cat#, Book No. Baseline Report Date

P788: 1" Header service assembly for two meters



Appendix B: Easement contract sample

Grantor:

<NAME>

<ADDRESS>

<CITY STATE ZIP>

After recording, return to:

Portland Water Bureau

Attn: Right-of-Way Section

1120 SW 5th Avenue, Suite 405

Portland, OR 97204

Send tax statements to:

No Change

WATER FACILITY EASEMENT

* (“Grantor”), for good and valuable non-monetary consideration, the receipt and sufficiency of which are hereby acknowledged, hereby grants unto the City of Portland (“Grantee”), a municipal corporation of the State of Oregon, by and through its Portland Water Bureau, a perpetual, non-exclusive easement (this “Easement”) for the purpose of constructing, reconstructing, accessing, operating, inspecting, monitoring, maintaining, upsizing, or replacing such surface or underground facilities as necessary or convenient for Grantee’s water system including, but not limited to, vaults, meters, water lines, drains, and related appurtenances of any kind (the “Facilities”), through, under, over and along the following described parcel (the “Easement Area”):

As described on Exhibit A and depicted on Exhibit B attached and incorporated by reference.

The Easement Area contains * square feet.

The terms of this Easement are as follows:

- A. Grantor will neither cause nor allow any permanent or temporary surface, overhead or underground structure, facility, improvement, or activity, including but not limited to public or private utilities, buildings, sheds, garages, barns, decks, walls, garbage enclosures, mailbox structures, swimming pools, hot tubs, septic systems, stormwater infiltration basins, sumps, large vehicle storage, material storage or tree planting within the Easement Area without the prior written consent of the Chief Engineer of Grantee. All structures, facilities, improvements, or activities permitted within the Easement Area by Grantee must comply with applicable local, state, and federal laws and regulations.
- B. Grantor will neither cause nor allow any change of grade in excess of one (1) foot of elevation within the Easement Area without the prior written consent of the Chief Engineer of Grantee.

- C. Grantor will keep the Easement Area open, accessible, and passable at all times. Grantor will erect no fence, gate, or other impediment to Grantee's access to or within the Easement Area without the prior written consent of the Chief Engineer of Grantee.
- D. Grantee will reasonably endeavor to minimize impacts to existing structures and surfaces. However, Grantee may remove any trees, shrubs, brush, paving or other materials or improvements necessary or convenient to facilitate its use of the Easement Area. Within a reasonable time after completion of any earth disturbing work undertaken by Grantee within the Easement Area, Grantee will restore the disturbed surfaces of the Easement Area to a grade and condition that, in the reasonable judgment of Grantee, is consistent with the grade and condition existing prior to Grantee's work within the Easement Area, except as to permanent changes made necessary by and authorized under this Easement. The area of restoration will not include any portions of the public right-of-way, as defined by Grantee, and will not include any structures, facilities, improvements, or activities permitted within the Easement Area under the prior written consent of the Chief Engineer of Grantee.
- E. Grantor will neither cause nor allow to be stored, used, manufactured, or disposed of within the Easement Area, any hazardous substances, or any substances or materials which constitute a public health hazard, as defined by rules of the Oregon State Health Division. Grantor will neither cause nor allow any condition to exist within the Easement Area that constitutes a health hazard, as defined by rules of the Health Division. As used in this Easement, "Hazardous Substance" means: (i) any hazardous substance as defined by the Comprehensive Environmental Response, Compensation and Liability Act, as amended from time to time; or (ii) any hazardous waste defined by the Resource Conservation and Recovery Act of 1976, as amended from time to time; or (iii) any hazardous substances as defined by Oregon Revised Statute 465.200 and/or implementing regulations of the Oregon Department of Environmental Quality; or (iv) any and all material or substance defined as hazardous pursuant to any federal, state or local laws or regulations or order; or (v) any and all material or substance which is or becomes regulated by any federal, state or local governmental authority; or (vi) any and all material or substance which contains oil, gasoline, diesel fuel or other petroleum hydrocarbons and their by-products.
- F. Grantor and Grantee each agree to notify the other no less than three (3) business days prior to the commencement of any earth disturbing work within the Easement Area approved pursuant to the provisions of this Easement, provided however that in the event of emergencies no such notice will be required.
- G. Grantor reserves all other rights not conveyed herein but will not exercise said rights in any manner that would be inconsistent or interfere with or materially affect rights herein granted to Grantee.
- H. This Easement will bind the heirs and assigns of Grantor and will inure to the benefit of the successors in title of Grantee.
- I. Grantor represents and warrants that Grantor has the authority to grant this Easement, that the Easement Area is free from all liens and encumbrances that would materially affect the grant of this Easement, and that Grantor will defend the same to Grantee against the lawful claims and demands of all persons whomsoever.

- J. Grantor agrees that the consideration recited herein is just compensation for this Easement, which includes damages to the remainder property, if any, resulting from Grantee's acquisition or use of the Easement Area.
- K. Grantor represents that, to the best of Grantor's knowledge after appropriate inquiry under the circumstances, there are no violations of local, state, or federal environmental laws or regulations related to the Easement Area.
- L. Grantor represents that Grantor has disclosed all knowledge of any release of hazardous substances onto or from the Easement Area and disclosed any known report, investigation, survey, or environmental assessment that may provide information relevant to the Easement Area. "Release" and "hazardous substance" will have the meaning as defined under Oregon law.
- M. Grantor warrants that, to the best of Grantor's knowledge after appropriate inquiry under the circumstances, there are no undisclosed underground storage tanks, as defined under Oregon law, presently on or under the Easement Area.
- N. Grantee, by accepting this Easement, is not accepting liability for any preexisting release of hazardous substances onto or from the Easement Area, and Grantor is not attempting to convey any such liability.
- O. Grantor holds Grantee, its officers, employees, and agents, harmless from any expense, loss, or liability, including legal fees, arising from claims for property damage or personal injury or death not caused by Grantee's Facilities or Grantee's use of the Easement Area, including from any liability imposed by law for the clean-up or damages caused by the release or disposal of hazardous substances within the Easement Area, except for release or disposal of hazardous substances caused by Grantee, its officers, employees or agents.

THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK.

INSERT APPROPRIATE DATE, SIGNATURE, AND NOTARY BLOCK FOR GRANTOR HERE

**INSERT APPROPRIATE ACCEPTANCE AND CITY ATTORNEY SIGNATURE BLOCK FOR PWB CHIEF
ENGINEER ON SEPARATE PAGE HERE**