

Residential Sewer

This document provides guidance when applying for a sewer permit associated with residential construction projects. This includes install, repair, and reroute of new or existing building sewer.

All work on existing or new sewer systems must be performed by a [Pierce County Registered Sewer Contractor](#) and meet the requirements of [Pierce County Code Title 13](#).

Note for registered sewer contractors: Emergency sewer repairs and capping permits are issued immediately through PierceCountyWa.gov/Permit.

Table of Contents

Application Types included in this Guide.....	2
Process Overview.....	2
Guide for Required Submittal Forms	4
Completed Application Form.....	4
Residential Sewer Completeness Certification	4
Compliant Building Sewer Plan	4
Sewer Line Extension Application	4
Sewer Availability and Connection Charge Requests	4
Payment of Fees	4
Appendices.....	5
Appendix A: Document Minimum Submittal Requirements.....	5
Residential Grinder Pump Intake Completeness Checklist.....	6
Residential Pump Station Design Intake Completeness Checklist.....	8
Appendix B: Permit Issuance Requirements	10
Appendix C: General Information.....	11
Appendix D: Residential Sewer Site Plan Examples	13
Glossary of Terms:	15

Application Types included in this Guide

Project Type	Use this Application and Checklist Form
• Building Sewer (New, dryline or repair) • Grinder Pump	Residential Sewer Construction Application and Checklist

Do not use this application for Sewer Line Extensions

Note for registered sewer contractors: Emergency sewer repairs and capping permits are issued immediately through [PierceCountyWa.gov/Permit](https://www.piercecountywa.gov/Permit).

Process Overview

Step One: Gather information for your application

- Parcel numbers, addresses
- History and status of previous permits
- Site specific Design Criteria
- Code references and interpretations
- Clarification of requirements
- Information requested during any pre-application screening, environmental, and land use reviews

Note: Other permits or applications may be needed before you can apply for your construction permit. These may include a well permit, water connection, right-of-way permit, residential construction application, subdivision, or zoning approvals.

Customer Submittal Standard Checklists

Refer to the following resources to ensure you have a complete application:

- [Residential Sewer Application and Submittal Standard Checklist](#)

Step Two: Apply for your permit

Once you are confident you have all required items to submit your application, apply for your permit at [PierceCountyWa.gov/Permit](https://www.piercecountywa.gov/Permit). You must ensure your documents comply with the submittal standards in this guide and on the checklist.

- The email address for the Primary Contact provided in the application will be the main method of communication for all notifications
- Incomplete applications will receive instructions from our permit technicians to help you complete your application process
- You can always check status of your application through your online permitting portal account

Step Three: Pay fees

Once your application is ready to be accepted, the permit technician will send an invoice for payment via email. Once your fees are paid, you will receive a determination that your application is

complete and ready for technical review. The application will be cancelled if fees are not paid within 5 days.

Step Four: Technical review

If our technical review team needs additional information or corrections are required, they will add a “request” comment in the online permitting portal. Sign up for email alerts so you are notified when any actions occur on your permit approval process.

Step Five: Approval and issuing of your permit

All stamped documents, including your permit and inspection requirements, will be emailed to the applicant.

Print these documents and have them available on site for every inspection.

Note: You will likely have multiple permits for your project. Each permit will require different inspections.

Some of these may include:

- Construction permits
- Site development permits
- Fire prevention permits
- Gas line permits (for exterior gas lines)
- Electrical permits (contact [WA L&I](#) or [Tacoma Public Utilities](#))
- Tacoma Pierce County Health Department Permits (Well and Septic)

Step Six: Start work, schedule inspections

Be sure to setup your inspections to occur *before* each phase of construction is covered up. [Learn more about scheduling inspections.](#)

If you have questions about what is required for an inspection, contact your site inspector prior to the inspection either by phone or email.

Step Seven: Complete all related permits

It is the property owner’s responsibility to verify that all permits have been completed. The final inspection cannot be approved if related permits have not been completed.

Step Eight: Final inspection

Once your inspector has completed your final inspection, verify that your account profile and billing information is accurate with Pierce County Sewer billing services. Call (253) 798-4020 to verify the account has been set up and it has the correct contact information.

Guide for Required Submittal Forms

Completed Application Form

Must be filled out completely and signed by legal owner of the property and any authorized agent. This application should not be used for sewer line extensions.

Residential Sewer Completeness Certification

Checklists in [Appendix A](#) used by the Engineer of Record to prepare the required submittal information. A signature on the [Residential Sewer Application and Checklist](#) will certify the checklist is complete.

Grinder Pump Plans and Report

Installing a grinder pump with a building sewer requires Grinder Pump Plans and a Grinder Pump Report, both of which must include pump calculations and be signed and stamped by a Professional Engineer. Also see [Grinder Pump Standard Plan](#).

Compliant Building Sewer Plan

See [Appendix A](#) for submittal requirements. A compliant sewer plan is required for any proposed connection to a new or existing structure. If a dryline sewer is proposed, a separate application and compliant sewer plan showing the connection is required.

Sewer Line Extension Application

A [Sewer Line Extension application](#) may be required if you need to install a sewer main in order to access Pierce County sanitary sewer. See [Sewer Line Extension Customer Guide](#) for additional information.

Draft private easement documents

If there are off-site or on-site Private Sanitary Sewer Easements required, submit the draft private easement documents for our review prior to execution and recording with the Pierce County Auditor's Office.

Draft Perpetual Reciprocal Easement, Mutual Maintenance Agreement and Covenant Running with the Land

If the proposed private sewer line will serve more than one existing parcel, a draft Perpetual Reciprocal Easement, Mutual Maintenance Agreement and Covenant Running with the Land must be submitted for our review and approval prior to execution and recording with the Pierce County Auditor's Office. Off-site private easements must be executed and recorded prior to plan approval.

Sewer Availability and Connection Charge Requests

Request information about sewer availability and connection options, verification of existing connections, and connection charges associated with proposed development or changes to existing development. Complete and submit the [Sewer Information Request form](#).

Payment of Fees

Your application cannot be deemed complete until the required fees are paid.

Appendices

Appendix A: Document Minimum Submittal Requirements

All building sewer plans are required to follow the installation guidelines of the [Sanitary Sewer Standard Details Manual](#).

Building Sewer Plans

- North Arrow
- Scale, such as 1" = 10'
- Tax Parcel Number
- Site Addresses
- Dimensions and Use information
 - Property lines and building dimensions
- Utilities
 - The plan view must show and label the existing and proposed building sewer pipe and grinder pumps.
 - Show existing sewers as dashed lines, and proposed sewer as solid lines. Pipe must be labeled with the length, diameter, type, and slope.
 - Show existing and proposed cleanouts
 - Sewer pipes must be dimensioned from buildings, property lines, and water lines.
 - Show and label existing on-site septic system components (i.e., septic tank), if any.
 - Show and label the water service lines, wells, and meters as well as other utilities.
 - Identify depth of pipe 2-ft from building and label the plumbing outlet(s).

Residential Grinder Pump Intake Completeness Checklist

This checklist reflects the minimum requirements for creation of application at intake for Development Services. It is intended to be used as an aid for completeness in the application process. All items may not be applicable in the review of each project and all items of concern may not be covered on this checklist.

X or N/A	Item No.	Residential Grinder Pump Checklist
		Drafting
	1.	Vicinity Map: Identify project location on map, provide a north arrow and identify the scale used. Vicinity Maps must include a major arterial (e.g., SR512, I-5, Canyon Road East, etc.)
	2.	Plan size is 22" x 34" with sheets numbered consecutively (1 of 3, 2 of 3, etc.).
	3.	Blank approval signature block in upper right hand corner must be five inches wide.
	4.	Place "Plan approval expires three years from the date of approval" inside or under signature block.
	5.	Engineering scale and north arrow: North arrow must point toward top half of sheet.
	6.	Existing adjacent roads: Show and label road names, include existing right of way, edge of pavement, road centerline, utilities, shoulder ditch, etc. if any side sewer work is required within existing right of way, easements or proposed right of way. Clearly identify roads as public or private.
	7.	Show and label all existing structures on the site to remain or to be demolished. All plumbed buildings to remain must be connected to the existing or proposed sanitary sewer system.
	8.	Color text and graphics are not allowed.
	9.	Minimum text height is 0.08 inches. Minimum line width is 0.005 inches. Smaller text and lines may be allowed if they are legible, able to be scanned, and are reproducible.
	10.	Hatching patterns (lines or dots) must be used in lieu of solid hatching (fill).
	11.	Show Standard Pierce County Planning & Public Works construction notes for residential pump station on the plans.
		Survey
	12.	Note the name of the licensed surveyor/engineer who provided the field topography on the plans. Include the date when the survey was completed.
	13.	Two-foot contour intervals: Show the existing and proposed topography for entire property. If the property is flat, provide spot elevations. If the plan requires a cover sheet, the existing topography shall be shown on the cover sheet and the proposed topography shall be shown on the design sheets.
	14.	Elevations and contours must be based on NAVD 88.
	15.	Pierce County Benchmark or Temporary Benchmark: Location and elevation must be shown on the plans.

X or N/A	Item No.	Residential Grinder Pump Checklist
	16.	Bearings and distances for all existing property lines: Show parcel number(s) and property lines of the existing and adjacent parcel(s).
	17.	Show 100-year flood plain elevation on plans. All manholes, cleanouts, and vaults shall be set a minimum of one foot above floodplain elevation. If the property is not in the floodplain, make note of this on the plans.
	18.	All public and private off-site sewer easements must be recorded and shown on the plans along with the respective Auditor's File Numbers (AFN) prior to plan approval.
	19.	All existing public and private sewer easements must be shown on the plans prior to plan approval and must be recorded and their respective Auditor's File Numbers (AFN).
	20.	Show the bearings and distances of existing and proposed sewers within existing and proposed easements as well as the easement boundaries.
		Utilities
	21.	All existing/proposed utilities in vicinity of residential grinder pump station and building sewer shown on plans.
	22.	Parallel sewer and water lines must have 10 feet of horizontal separation (separation shall be measured from the outer wall of the pipes).
	23.	Sanitary sewer lines and water crossings: • The standard minimum vertical separation for water lines is 1.5 feet above the sanitary sewer line. Separation shall be measured from the outer walls of the pipes. • For unusual circumstances, contact the Planning & Public Works Sewer Division to determine if a reduced minimum vertical separation will be allowed. Additional provisions will be required. • If concrete encasement of the sanitary sewer is provided, then a reduced minimum vertical separation of 0.75 feet will be allowed. The concrete encasement shall extend 10 feet on each side of the crossing. • For pressure sewer lines Class 52 ductile iron pipe may be used for the sanitary sewer in lieu of concrete encasement provided that there is no transitioning to other pipe materials between manholes.

Residential Pump Station Design Intake Completeness Checklist

This checklist reflects the minimum requirements for creation of application at intake for Development Services. It is intended to be used as an aid for completeness in the application process. All items may not be applicable in the review of each project and all items of concern may not be covered on this checklist.

X or N/A	Item No.	Residential Grinder Pump Station Design Checklist
		Pump Calculations must be provided with the commercial sewer construction plans
	1.	Total dynamic head (TDH) (Static head and friction loss calculated to point of discharge into gravity system).
	2.	Size of impeller.
	3.	Type of pump(s), manufacturer and model number.
	4.	Pump curve with the appropriate flow rate and head characteristics plotted.
	5.	Catalog cut sheet of selected type of pump.
	6.	Size of pipe (for handling minimum velocity of 2 fps velocity).
	7.	Size and dimensions of wet well.
	8.	Type of wet well. Provide manufacturer and model number for prefabricated fiberglass wet wells. Provide shop drawings for concrete wet wells (septic tanks not allowed).
	9.	24-hour holding capacity (from alarm-on to invert elevation of the lowest building sewer into the wet well). A dedicated emergency generator with an automatic transfer switch may be substituted for 24-hour holding capacity*.
	10.	Specifications for wet well, pump(s), and all appurtenances.
	11.	Cycle time for pump-on and pump-off at peak flow.
	12.	Number of pump cycles per 24-hour period (minimum of 3 cycles per day suggested).
	13.	Specifications for control panel and alarm.
	14.	Supporting documentation for calculations (e.g., tables, charts, references).
	15.	If more than one pump system is connecting to a common pressure main, an engineering analysis is required that addresses the probability and effect of more than one pump operating at one time.
		Wet Well Detail
	16.	Pump installation and elevations (wet well base, pump off, pump on, alarm elevation, top of wet well, finished floor elevation etc.).
	17.	Dimensions of wet well.
	18.	Must maintain a minimum 1:1 slope set back from base of building foundation to the bottom of excavation where the wet well is to be installed.
	19.	One foot minimum separation between the bottom of wet well and pump off*

X or N/A	Item No.	Residential Grinder Pump Station Design Checklist
	20.	24" minimum access hole into wet well. Duplex systems require a hatch and lifting rails.
	21.	Separation between pump on and pump off* • < 0.5': unacceptable • > 0.5' < 1.0': provide support letter from pump/float manufacturer • > 1.0': acceptable
	22.	Show bracket assembly used to attach float switch cables. The float switch cables shall not be attached to the discharge pipe. PVC or stainless steel fixtures must be used. Nylon wire ties, Velcro straps or predrilled holes shall be used to secure the float cables to the bracket assembly*.
	23.	The junction box shall be located outside wet well. It shall be a corrosion resistant application. Use PVC type meter box as the junction box with the lid marked ELECTRIC.
	24.	Rigid electrical conduit to be used from wet well to junction box.
	25.	A waterproof seal on all lids is required.
	26.	One half inch polyvinyl rope or stainless steel cable must be attached to the pump and secured to wet well for pump removal*.
	27.	A quick disconnect inside the wet well is required for the pump system and must be above the 24-hour storage elevation.
	28.	A check valve on each discharge line shall be provided inside of the wet well and must be above the 24-hour storage elevation.
	29.	For duplex systems, a separate vault shall be provided outside the wet well to house the gate valves and combine flows from the two discharge lines into a single force main.
	30.	The interior of concrete wet wells, if used, shall be waterproofed with coal tar epoxy per Pierce County Planning & Public Works specifications.
	31.	If the pump system is in a traffic area or loading area, the structure shall be designed to accommodate HS-20 loading standards.

*** Designs that specify an E-one pump system and a 237-gal w-series tank (aka "squat tank") are not required to meet these design requirements.**

Appendix B: Permit Issuance Requirements

In addition to the requirements in Appendix A, the following requirements are required prior to permit issuance. These requirements will be checked for completeness by a Review Engineer during review.

- Existing adjacent roads: Show and label road names, include existing property line, edge of pavement, road centerline, utilities, shoulder ditch, etc. if any side sewer work is required within existing right of way or easements. Clearly identify roads as public or private.
- Utilities
 - Show sleeves, trench dams, and concrete encasement of sewer pipe, if any.
 - If a side sewer stub exists, "bubble" data from the as-builts must be shown.
 - If a side sewer stub does not exist, identify the proposed tap location and connection specifications. Show and label the existing sewer manhole rims and pipe inverts. The tap's distance from the upstream and downstream sewer manhole, the pipe length, diameter, type, and the invert elevation of the proposed connection point to the existing sewer main. Show the existing sewer main, including pipe length, diameter, type and slope and both the upstream and downstream sewer manholes with the field verified rim elevations and invert elevations. Taps into sewer interceptors, 18-inch or larger, will not be allowed.
- Minimum cover over pipe:

Public ROW & Public Sewer Easement	Private Property not within a Public Sewer Easement
5 Feet (PVC)	3 Feet (PVC)

- Gravity building sewers shall have a minimum 2% slope
- Cleanouts are required at 100-foot intervals and at bends totaling 90 degrees or more.
- Cleanouts must be labeled with the cleanout type if other than wye-type cleanouts.
- Cleanouts located in paved areas require rings and covers.
- Parcel Encumbrances and Restrictions
 - Existing and proposed easements (include Auditor's File Number, or AFN if already recorded)

Appendix C: General Information

Are you making a new connection to an existing sewer main line?

Your home's sewer service consists of a single pipe that carries the wastewater from the inside of your house to the sewer main that runs beneath the street. This pipe is often referred to as a "side sewer".

Determine whether your property has an existing sewer connection or ability to connect (side sewer stub available to your property by researching property records or sewer main as-built plan drawings.

Find information about the sewer main lines on the [Pierce County Public GIS](#):

1. Search for your address or parcel number
2. Expand the "Utilities" layer and click on "Sewer Main Lines."
3. Click on the main line, select the Links Tool  on the bottom left of the screen to see links to the sewer main as-built.

You may also request this information from PPW_Sewer_BPAS@piercecountywa.gov.

If an existing side sewer stub does not exist, you will need to request approval to tap the sewer mainline or manhole.

If the sewer connection will be in the public right-of-way, an additional right-of-way permit will be required.

- Additional requirements are required for a Sewer Plan with a tap. Refer to Appendix B, the [Sewer Standard Details](#) and the [Sewer Standard Specifications](#) for specific design requirements.

Are you adding a connection to an existing sewer service?

- If connecting to an existing sewer service of an adjacent property, an additional easement for access and maintenance will be required. Refer to the [Perpetual Reciprocal Easement, Mutual Maintenance Agreement and Covenant Running with the Land \(PREMMA\)](#) template.
- When connecting to an adjacent property's sewer service, it is considered a shared connection. At the point where the two sewer services connect, all downstream piping needs to be a minimum of 6-inches in diameter. Note: A maximum of two gravity services are allowed to a single side sewer stub or tap connection, per Pierce County Code.
- If more than two gravity services are proposed to a single side sewer stub or tap connection, a [Waiver Request Review](#) will be required to be submitted and approved. This may add significant time to your project schedule.

Are you performing a repair or reroute of an existing sewer?

- Repairs that involve Pipe Bursting or Slip Lining require pre-approval prior to permit application submittal. [Submit a video of the existing pipe conditions](#).
- Emergency repairs are allowed only when sewer services are offline or non-functioning. Apply for emergency repair permits online at PierceCountyWa.gov/Permits

Not able to use gravity for your proposed building sewer?

For residential properties that cannot obtain gravity service due to site constraints, a grinder pump system will be required.

- Grinder pump systems require Construction Plans and Reports. For installation guidelines, refer to [Appendix A: Grinder Pump Checklist](#) and [Grinder Pump Standard Plan](#)

Where can I find sewer as-builts?

Side Sewer

Please email the Sewer Division at PPW_Sewer_BPAS@piercecountywa.gov to request the side-sewer plumbing record drawings. Be aware that these are sketches and not surveyed or stamped by an engineer so the accuracy of them is not guaranteed.

Sewer Main Line

Sewer as-builts can be found on [Pierce County's Public GIS](#). Search your property by address or parcel number and then add the "Sewer Main Line" layer from the "Data Menu", click on the link tool (bottom left), click on the sewer line you are interested in, and then click on the "Plan Drawing" or the "Profile Drawing" links.

When will sewer be available in my area?

Sewer extensions that have been approved by the County Council can be found in the most current copy of the [Capital Facilities Plan](#) or the [Sewer Improvement Program](#). If your area is not near one of the listed projects then unfortunately the Sewer Division does not have an estimate on when Sewers will be extended to your area.

Can I extend the sewer and what is it going to cost?

Yes anyone can propose a sewer line extension through the Sewer Line Extension permit process (more information on that process can be found [here](#)). The cost to extend sewers varies significantly due to location, depth of sewers, soil type, etc. Because of this we are unable to give a very good estimate on the cost but here are some ranges that the County experiences:

Gravity Sewer - \$500 to \$1000 per foot in the roadway

Side Sewer installation - \$15,000 to \$30,000 for work on private property only

Grinder Pump installation - \$20,000 to \$40,000 for work on private property only

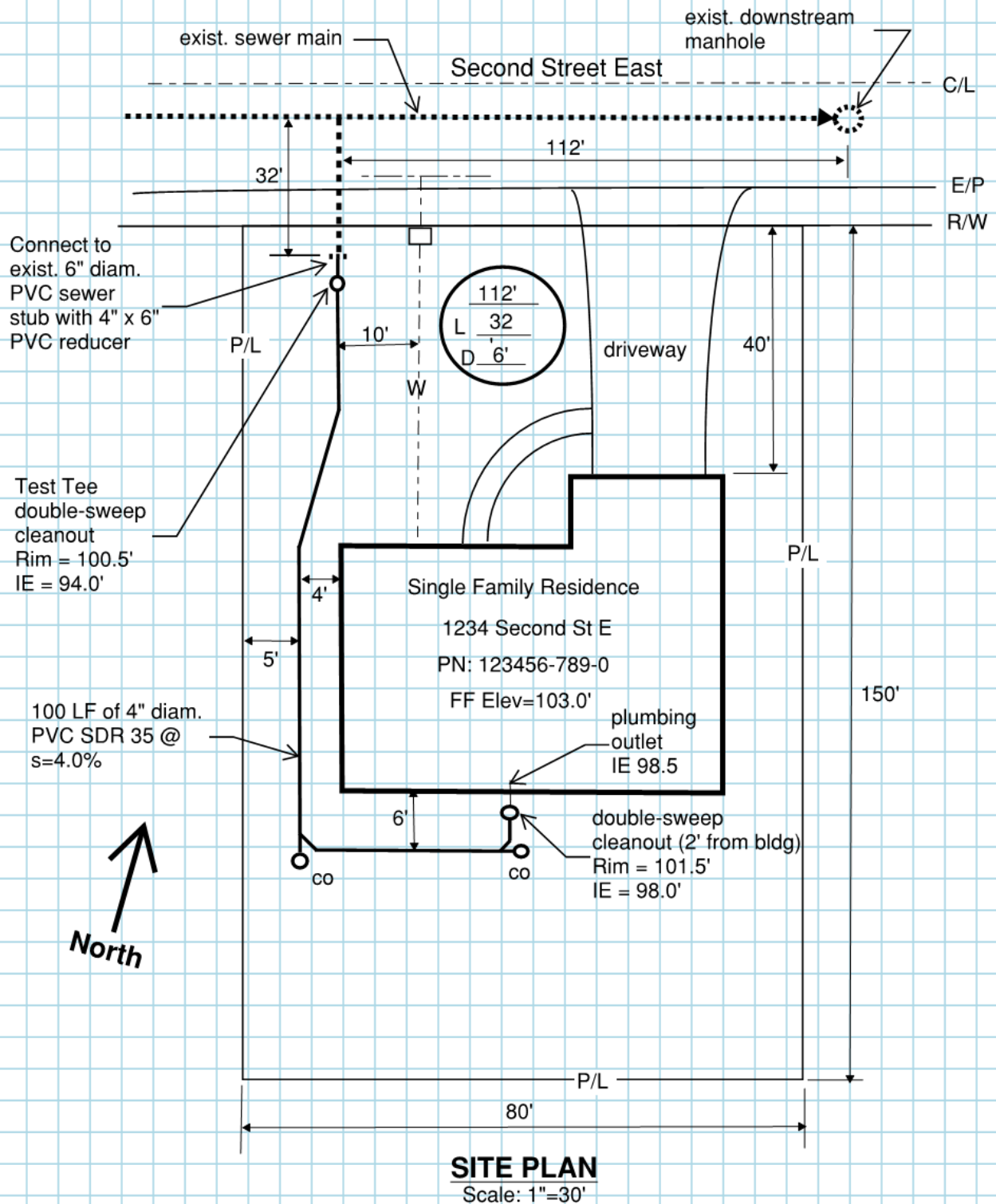
The above do not include engineering costs, permit fees, or connection charges. These are only estimates, to get a more accurate number please reach out to an engineering firm or a contractor to get a better idea of the cost to extend sewers in your area.

Can I request a waiver from the requirements of the Sewer Code?

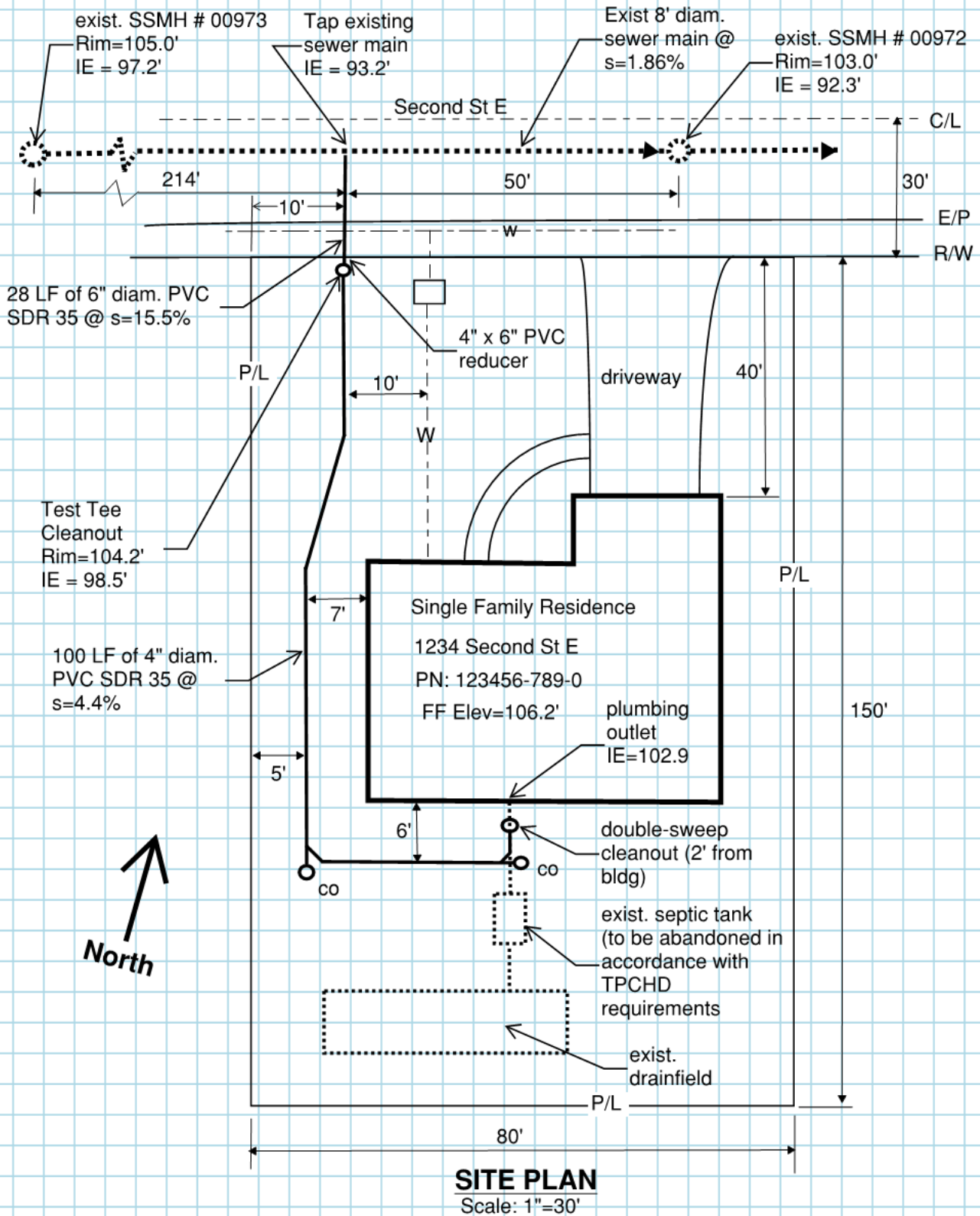
Yes. Complete and submit the [Sewer Waiver Request form](#) to request a waiver from the requirements set forth in [Pierce County Code Title 13](#).

Appendix D: Residential Sewer Site Plan Examples

Residential Sewer Site Plan Example 1: New House w/ exist. side sewer stub



Residential Sewer Site Plan Example 2: Exist. house w/ new side sewer stub



Glossary of Terms:

As-built Drawings: Post-construction drawings that provide a certified record of the work as constructed.

Building Sewer: The portion of a sewer pipe connecting one or more structures from the plumbing outlets to a sewer main. The building sewer, including that portion called the "side sewer stub," is constructed in accordance with Pierce County Sewer Standards and is not part of the public sewer facilities. Building sewers shall be maintained by the property owner.

Force Main: A sewer pipe connected to a pump station that transports wastewater under pressure and/or against the force of gravity.

Grinder Pump: A device that grinds up solids and pumps collected wastewater from a building to the sewer system.

Perpetual Reciprocal Easement, Mutual Maintenance Agreement and Covenant Running with the Land agreement

(PREMMA): A legally binding agreement between two or more property owners for the purpose of connecting two or more structures to a single building sewer located on private property and specifying for the mutual maintenance of the single building sewer by the property owners.

Private Easement: A legally binding agreement between two or more property owners for the purpose of installing sewers outside of the Public Right-of-Way.

Professional Engineer: An individual or corporation holding a currently valid license

to practice engineering in the State of Washington.

Registered Sewer Contractor: Any contractor who is duly registered pursuant to the requirements of this Sewer Code to construct, install, repair, reconstruct, excavate, or connect any building sewer, side sewer stub, or sewer line extension to the public sewer system.

Repairs, Building Sewer: Repairs to the building sewer that don't meet emergency or health safety standards.

Repairs, Emergency: Emergency repairs are any repairs done to the building sewer or private sewer main to prevent the continued spill of wastewater or backup of wastewater into a building.

Sewer Line Extension: The construction, upgrading, and/or extension of public or private sewer facilities including, but not limited to, collector lines, interceptor lines, and or pump stations; or those sewer facilities of sufficient complexity to require a Sewer Facilities Plan by a professional engineer.

Stub "Bubble" Data: Bubble data is found on sewer main as-builts. This data can be obtained by requesting information about your property.

Side Sewer Stub: That portion of a building sewer constructed from a sewer main to a property line or the edge of a perpetual easement of a property being served. The side sewer stub shall be considered part of the building sewer and shall be maintained by the property owner.