CHECKLIST
C3
Revised 8/13/2021

Oil-Water Separator Design Checklist

Pierce County

DISCLAIMER—This checklist is provided to Consulting Engineers for the express purpose of assisting them in compiling private oil-water separator design plans for submittal to Pierce County Planning & Public Works. This checklist is merely a guide to assist the design engineer in providing the minimum information required for plan submittal. This checklist should be used in conjunction with the oil-water separator standard plans in completing your design. The complexity of your design may require additional information not included on this checklist. This checklist may be revised from time to time and you should make sure you have the most recent copy prior to compiling a design.

If you have any questions regarding this checklist, please contact our office at (253) 798-2737.

Project/Development Name: _____

A. Submittals

1. All application submittals and resubmittals must be made at: https://pals.piercecountywa.gov/palsonline/#/dashboard.

B. Drafting

	Done	N/A	
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.	☐	☐	Approval signature block in upper right hand corner.
4.	☐	☐	Place "Plan approval expires one (1) year from the date of approval" inside or under signature block.
5.	☐	☐	Engineering scale and north arrow: North arrow must point to top, left or right of page.
6.	☐	☐	Existing/proposed adjacent roads: Show and label road names. Include existing/proposed edge of pavement, road centerline, utilities, shoulder ditch, existing/proposed right of way, and easements. Clearly identify roads (include street name) 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. Connection charges for each building to remain must be paid under a separate Sewer Service Permit (SWSR).
8.	☐	☐	Project description: Number of units/buildings/lots/seats/employees, etc., is to be identified on the plans. Include the proposed use for each building (commercial office building, process building, etc.).
9.	☐	☐	Color text and graphics are not allowed.
10.	☐	☐	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.

B. Drafting

	Done	N/A	
11.	☐	☐	Hatching patterns (lines or dots) must be used in lieu of solid hatching (fill).
12.	☐	☐	Show Standard Pierce County Planning & Public Works general notes for oil-water separator on the plans.
13.	☐	☐	Floor plan with schematic plumbing drawing of the tenant space: Show how all fixtures are plumbed to or around the oil-water separator. The schematic waste plumbing plans must match the plumbing drawing approved by the local plumbing jurisdiction.
14.	☐	☐	Oil-water separator design must be on one sheet if possible.

C. Survey

	Done	N/A	
1.	☐	☐	State the name of the licensed surveyor/engineer who provided the field topography on the plans. Include the date when the survey was completed.
2.	☐	☐	Two foot contour intervals: Show the existing and proposed topography for entire property. If the property is flat, provide spot elevations.
3.	☐	☐	Elevations and contours must be based on NAVD 88.
4.	☐	☐	Pierce County Benchmark or Temporary Benchmark: Location,and elevation must be shown on the plans.
5.	☐	☐	Show bearings and distances for all existing property lines: Show parcel number(s) and property lines of the existing and adjacent parcel(s).
6.	☐	☐	Show 100-year flood plain elevation on plans. All manholes, cleanouts, and vaults shall be set a minimum of one (1) foot above flood plain elevation. If the property is not in the flood plain, indicate this on the plans
7.	☐	☐	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.
8.	☐	☐	All public and private on-site sewer easements must be shown on the plans prior to plan approval, and must be recorded and their respective Auditor's File Numbers (AFN) added to the as-builts prior to final acceptance.
9.	☐	☐	Show the bearings and distances of existing and proposed sewers within existing and proposed easements as well as the easement boundaries.

D. Utilities

	Done	N/A	
1.	☐	☐	All existing/proposed utilities in vicinity of oil-water separator and building sewer shown on plans.
2.	☐	☐	Parallel sewer and water lines must have ten (10) feet of horizontal separation (separation shall be measured from the outer wall of the pipes).

D. Utilities

	Done	N/A	
3.			Sanitary sewer lines and water crossings:
	☐	☐	a. 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.
	☐	☐	b. 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.
	☐	☐	c. Class 52 ductile iron pipe may be used for sanitary sewer in lieu of concrete encasement provided that there is no transitioning to other pipe materials between manholes.
	☐	☐	d. Contact the Sewer Division for unusual circumstances for the Sewer Division to determine if a reduced minimum vertical separation will be allowed. Additional provisions will be required.

E. Building Sewer

	Done	N/A	
1.	☐	☐	The plan view must show and label the existing and proposed building sewer pipe and oil-water separator. Pipe must be labeled with the length, diameter, type, and slope. Sewer pipes must be dimensioned from buildings, property lines, and water lines. Show sleeves, trench dams, and concrete encasement of sewer pipe, if any. See the Building Sewer Installation Guidelines for more information.
2.	☐	☐	Show and label all existing and proposed manholes, cleanouts and sewer lines, located on or adjacent to parcel. Show existing sewers as dashed lines, and proposed sewers as solid lines.
3.	☐	☐	Prior to the submittal of plans the point of connection (sewer main and sewer manhole) must be field verified unless bubble data/information exists. The location of existing sewer manhole ladder, invert and rim elevations must be field verified and shown on the plans as "Field Verified."
4.	☐	☐	Show and label the existing side sewer stub "bubble" data. You can find the "bubble"data by researching the sewer main as-built plan drawings at https://matterhornwab.co.pierce.wa.us/publicgis/, or by contacting a Sewer Division Engineering Technician at (253) 798-2737 or Sewer Division Engineer at (253) 798-4050.
5.	☐	☐	If a side sewer stub does not exist, show the proposed tap, its 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. If the sewer stub will cross other existing or proposed utilities, show and label them.
6.	☐	☐	Side sewer taps will not be allowed to existing sewer lines 18 inches in diameter or greater.
7.	☐	☐	Any ductile iron pipe used must be Class 52 and lined per Pierce County Specifications. All sewers to be constructed in fill areas must be DIP.
8.	☐	☐	Minimum cover over pipe:

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

E. Building Sewer

	Done	N/A	
9.	☐	☐	Gravity building sewers shall have a minimum 2% slope.
10.	☐	☐	Show and label the existing and proposed cleanouts. Label all cleanouts with rim (top) elevation and invert (bottom) elevation.
11.	☐	☐	Cleanouts located in paved areas require rings and covers.
12.	☐	☐	Cleanouts are required at 100-foot intervals and at bends totaling 90 degrees or more.
13.	☐	☐	Show and label the plumbing outlets(s) from the building.
14.	☐	☐	Show and label existing on-site septic system components, if any.
15.	☐	☐	Show limits of paving (driveway or parking lot).

F. Oil-Water Separator Design

	Done	N/A	
1.	☐	☐	Oil-water separators must be coalescing plate-type separators.
2.			Sizing calculations shall be included in an engineering report and be in accordance with the manufacturer's published literature, recommendations and the following minimum criteria:
	☐	☐	a. All separators shall have a forebay to collect floatables and large solids; the forebay must be sized to provide a minimum of 20 sq. ft. of surface area per 10,000 sq. ft. of drainage area.
	☐	☐	b. The forebay shall be 1/4 to 1/3 the overall length of the separator.
	☐	☐	c. Provide additional pretreatment upstream (e.g. sand/grit separator vault) for solids that could cause clogging of the coalescing plates.
	☐	☐	d. Coalescing plates shall be no more than 3/4-inch apart and at 45 to 60 degrees from horizontal.
	☐	☐	e. Oil retaining baffles (top baffles) shall be located at least 1/4 of the total separator length from the outlet and must extend down at least half way into the liquid depth and be at least one (1) foot from the bottom of the separator.
	☐	☐	f. Designed to remove Fats, Oils, and Grease (FOG) and Total Petroleum Hydrocarbons (TPH) to 100 mg/l and 50 mg/l, respectively.
	☐	☐	g. The Reynolds number through the separator must be less than 500.
	☐	☐	h. Materials of construction (e.g. piping, separator, vault, etc.) must be suitable for long-term exposure to the expected corrosive environment (e.g. detergents, acids or oils).
3.	☐	☐	Each business for which an oil-water separator is required shall have a separator which shall serve only the business.
4.	☐	☐	Plans must list, show, and label all plumbing fixtures connected to the separator.
5.	☐	☐	The separator shall be installed as close as possible to source of oils.

F. Oil-Water Separator Design

	Done	N/A	
6.	☐	☐	The separator must be located where it is easily accessible for maintenance and unannounced inspections. The separator must be located outside of the building. American Petroleum Institute (API) or Spill Control type oil-water separators will not be accepted in lieu of external gravity coalescing-plate oil-water separators..
7.	☐	☐	Must maintain a minimum 1:1 slope set back from base of building foundation to the bottom of excavation where separator is to installed.
8.	☐	☐	Venting must be from separator access manholes or as approved by Public Works Sewer Division.
9.	☐	☐	Size of venting in accordance with chapters 9 and 10 of the Uniform Plumbing Code.
10.			Separator detail (top and side views) must include:
	☐	☐	a. Invert elevations at inlet and outlet.
	☐	☐	b. Elevation at base of separator, top of separator, and at ground level over separator.
	☐	☐	c. Manufacturer and Model Numbers of all manufactured units.
	☐	☐	d. Separator size (gallons) and interior dimensions (height to designed water level, width and length) to insure that proper volume is provided.
	☐	☐	e. A six (6) inch diameter cleanout (Straight Tee Riser) is required on the outlet side of the separator.
	☐	☐	f. Additional test tee located downstream from "Y" wherein the effluent from separator has been combined with the effluent from the restrooms and/or other facilities that are not allowed to be connected to the separator. If an additional sample point is not provided, the owner/tenant will not benefit from the diluted sample when the discharge is tested for compliance.
	☐	☐	g. 24 inch minimum access hole(s) with gas-tight manhole frame and cover over the grit chamber.
	☐	☐	h. Minimum of three (3) compartments with coalescing-media and fittings designed for oil retention.
	☐	☐	i. Adequate number of access manholes or hatches to provide for removal of the coalescing media and cleaning all compartments of the separator.
	☐	☐	j. If the separator is in a traffic area or loading area, adequate reinforcement is required to insure that it can sustain HS 20 loading.
	☐	☐	k. All sewer line connections to the separator shall be core-drilled and connected with a Kor-N-Seal gasket.
	☐	☐	l. The interior of the concrete vault shall be waterproofed with coal tar epoxy or Sewer Division approved equal.
	☐	☐	m. The separator must have a valve on the discharge pipe which can be closed during cleaning and in the event of a spill.
11.	☐	☐	Plans and report stamped, signed and dated by a professional engineer registered with the State of Washington.
12.	☐	☐	Any pump mechanism must be installed downstream of the separator to prevent emulsification.