Cross Valley
WATER DISTRICT

SPECIFICATIONS FOR GREASE INTERCEPTOR AND OIL/WATER SEPARATOR

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SECTION 1: GREASE INTERCEPTOR

1.01 GENERAL

Whenever a commercial and/or retail food preparation operation, regardless of size, generates animal/vegetable fats, oils or grease (FOG) waste, which causes a visible sheen or accumulations in the effluent, to be discharged to the sanitary sewer, pre- treatment is required. A grease interception device, if required, shall be installed by the property owner as specified herein. Selection and sizing of the grease interceptor shall be subject to the approval of the District and/or King County/METRO. Effluent discharged from any grease interceptor shall not contain a visible sheen or accumulations of FOG, and shall be in compliance with Cross Valley Water District and King County/METRO regulations for discharge to the sanitary sewer.

Before a grease interceptor is installed, the property owner shall submit all plans to Cross Valley Water District and/or King County/METRO for review and approval. The property owner will need a letter approving the design and allowing discharge of wastewater from the properly installed tank. When submitting plans, include the following information:

- Name and address of the facility, and the phone number and mailing address of the person legally responsible for operation and maintenance.
- Drawing of the grease interceptor with capacities and dimensions. See Standard Details.
- Site map detailing all drains and the interceptor location.
- Location of the water sources and maximum water flows (in gallons per minute) from all potential service areas and equipment discharging to the grease interceptor.

A. Size and design of the grease interceptor shall conform to the uniform plumbing code, appendix H standards, and shall be subject to approval by the District. Minimum capacity shall be 600 gallons and the minimum criteria for sizing shall be as follows:

Interceptor Capacity (Gallons)	=	Waste Flow Rate X Retention Time X Storage Factor
Waste Flow Rate (GPM)	=	Provided by Developer, with approved supporting documentation
Retention Time	=	150 minutes minimum
Storage Factor	=	1 for 8 hour Operation 2 for 16 hour Operation 3 for 24 hour Operation

B. Fixtures in the kitchen area which discharge wastewater containing grease are to be connected to the grease interceptor. Such fixtures include, but may not be limited to dishwashers, pot sinks, range woks, janitor's sink, floor sinks, and rotoclones. Toilets, urinals, and wash basins shall not flow through the interceptor.

C. The interceptor shall be located outside the building within twenty feet of drive for access by maintenance vehicles.

D. The interceptor shall be filled with clean water prior to start-up of system.

E. Allowable materials for construction are as follows:
   Tank – concrete
   Baffles - concrete, plastic

F. Access to the interceptor shall be maintained free for inspection and compliance determination sampling at all times.

G. When pre-treatment is no longer required, the inlet and outlet pipes shall be permanently plugged, the separation chambers pumped out, and the vault removed, or filled with compacted crushed rock or controlled density fill. The property owner will need to apply for an revision side sewer permit and pay for the District and/or King County/METRO inspection fees.

1.02 VAULT

Grease Interceptor Vaults shall be of precast concrete construction. Cement concrete shall have a minimum 28-day compressive strength of 4,500 psi.

Deformed bars for steel reinforcement shall be in accordance with ASTM A615, grade 60. Welded-wire fabric reinforcement shall be in accordance with ASTM A185, grade 65. All interior piping shall be PVC sized to match side sewer line size.

Interior baffle shall be precast reinforced concrete, 4 inches thick. Concrete baffle shall be secured in place by slotted vault walls or with stainless steel angles as shown in the Standard Detail.

Vault cover shall include 24 inch diameter bolt-locking manhole covers and frames located over inspection tees. Manhole covers shall not allow passage of air or gases. Vault cover shall be designed for AASHTO H-20 load with 30% impact factor. See the Standard Details for vault sizes and miscellaneous details.

1.03 CONSTRUCTION

Grease interceptors shall be constructed as shown in the Standard Details. Excavation for precast vault shall be sufficient to provide a minimum of 12 inches (12") between the vault and the side of the excavation.

24-inch (24") diameter manhole frame and cover shall be adjusted to the elevation required by the Engineer prior to final acceptance of the work. Adjusting rings shall be manufactured from precast reinforced concrete. Total height of rings shall be from 8 inches (8") minimum to 20 inches (20") maximum.

The grease interceptor shall be placed on firm soil. If the foundation material is inadequate, the Contractor shall use foundation gravel or bedding concrete under the normal base to support the interceptor.

Vault shall be placed and set plumb so as to provide vertical sides. The completed interceptor shall be rigid and watertight.

The outside and inside of manhole adjusting rings, joints of precast concrete sections and the perimeter of precast baffle shall be thoroughly wetted and completely filled with mortar, plastered, and troweled smooth with 3/4" of mortar in order to attain a watertight surface.

All lift holes, if any, on precast items shall be completely filled with expanding mortar, smoothed both inside and out, to ensure water-tightness. All steel loops, if any, on precast section must be removed flush with the vault wall.

The stubs shall be covered with mortar and smoothed. Rough, uneven surfaces will not be permitted.

Precast vault and baffle shall be provided with 8-inch (8") diameter knockouts at all pipe openings or have openings core-drilled prior to installation.

All rigid pipe entering or leaving the structure shall be provided with flexible joints within twelve inches (12") of the manhole structure and shall be placed on firmly compacted bedding. Special care shall be taken to see that the openings through which pipes enter the structure are completely and firmly filled with mortar from the outside to ensure water- tightness. All PVC pipe connections to vault and baffle shall be made with gasketed coupling as approved by the District.

SPECIFICATIONS FOR GREASE INTERCEPTORS AND OIL/WATER SEPARATORS

SECTION 2: OIL/WATER SEPARATOR

2.01 GENERAL

Whenever an industrial or commercial business generates mineral/petroleum oils exceeding 100 milligrams per liter to be discharged to the sanitary sewer, pre-treatment is required. Businesses that typically need oil/water separators include but are not limited to; quicklime stations, transportation fueling facilities, vehicle/heavy equipment repair shops, and businesses using steam or pressure washers. Except where otherwise specifically permitted, no wastes other than those requiring treatment or separation shall be discharged into any interceptor. An oil/water separation device, if required, shall be installed by the property owner as specified herein. Water discharged from any oil/water separator to the sanitary sewer system shall not contain in excess of 100 milligrams per liter of petroleum oil, non-biodegradable cutting oil or mineral products, and shall be in compliance with Cross Valley Water District and King County/METRO regulations for discharge to the sanitary sewer.

Before an oil/water separator is installed, the property owner shall submit all plans to Cross Valley Water District and/or King County/METRO for review and approval. The property owner will need a letter approving the design and allowing discharge of wastewater from the properly installed tank. When submitting plans, include the following information:

- Name and address of the facility, and the phone number and mailing address of the person legally responsible for operation and maintenance.
- Drawing of the oil/water separator with capacities and dimensions. The outlet to the sewer must have a sampling tee installed. See Standard Details.
- Site map detailing all drains and the separator location. Indicate if any drainage is from rain water runoff. This should be kept to a maximum of 200 square feet.
- Location of the water sources and maximum water flows (in gallons per minute) from all potential service areas and equipment discharging to the oil/water separator.

A. Sizing of a separator facility shall be based upon maximum available flow to the separator and provision of a forty-five minute retention time in the separator at that flow, with a minimum capacity of at least 100 gallons.

B. The oil/water separator shall be covered with removable sections. Access and inspection covers, weighing not more than 30 lbs. and with suitable hand holds, are to be provided directly above inspection "tee" and oil/grit collection compartments.

C. Only waste water from floor drains and covered parking areas shall drain to the separator. The following items should not be put through an oil/water separator: antifreeze, degreasers, detergents fuels, alcohols, solvents, concentrated amounts of oily products, or heavy metal bearing wastewater. The location and design shall minimize or eliminate the possibility of storm water reaching the separator - areas over two hundred square feet open to rainfall shall not drain to the separator. Sewage from restrooms and shower facilities shall not drain to the separator. See Standard Details.

D. Allowable materials for construction are as follows:
   Tank - concrete
   Baffles - concrete, steel plate

E. The separator shall be located within 20 feet of drive for access by maintenance vehicle.

F. A sampling tee shall be located on the outlet with a minimum 18 inch drop below the invert. Access to the separator shall be maintained free for inspection and compliance determination sampling at all times.

G. The effluent discharged from any oil/water separator to the sanitary sewer shall not exceed 100 parts per million total oil.

H. When pre-treatment is no longer required, the inlet and outlet pipes shall be permanently plugged, the separation chambers pumped out, and the vault removed, or filled with compacted crushed rock or controlled density fill.

2.02 VAULT

Oil/Water separator vaults shall be of precast concrete construction.

Cement concrete shall have a minimum 28-day compressive strength of 4,500 psi.

Deformed bars for steel reinforcement shall be in accordance with ASTM A615, grade 60. Welded-wire fabric reinforcement shall be in accordance with ASTM A185, grade 65. All interior piping shall be PVC sized to match side sewer line size. Baffles and weir shall be 1/2-inch-thick steel plates galvanized in accordance with ASTM A123. Vault covers shall be as shown on the Standard Details. Hatches shall be Bilco model, or equal. All covers, including hatches, clean-outs, and manhole frame and covers, shall be locking, watertight, and capable of AASHTO H-20 traffic loading. See the Standard Details for vault sizes, vault covers, and miscellaneous details required for various oil/water separator sizes.

2.03 CONSTRUCTION

Oil/water separators shall be constructed as shown in the Standard Details. Excavation for precast vault shall be sufficient to provide a minimum of 12 inches between the vault and the side of the excavations. Vault shall be placed at proper depth to set vault cover flush with finish grade. If additional depth of cover is required over inlet or outlet, piping vault riser sections shall be installed to raise vault cover a maximum of 24 inches.

The oil/water separator shall be placed on firm soil. If the foundation material is inadequate, the Contractor shall use foundation gravel or bedding concrete under the normal base to support the separator.

Vault shall be placed and set plumb so as to provide vertical sides. The completed separator shall be rigid and watertight.