

2.8 SANITARY SEWER SERVICE CONNECTIONS

Sanitary sewer services shall be designed to transport the peak sewage flow from any residential or non-residential use to the sanitary sewer system. Services shall be sized by the Owner's Architect or Mechanical Engineer using the Uniform Plumbing Code (UPC) method, and shall be a minimum of four inches (4") in diameter. Service sizing calculations shall be submitted to the District for review whenever a new service line is proposed and whenever an existing service changes ownership or intended use. The District is not responsible for the sizing or adequacy of the service line to perform its intended use and assumes no responsibility for the service lines maintenance or operation.

Service wye locations, including size, manhole reach, lot or building number, stationing from nearest downstream manhole, right or left side connection (looking upstream), and the invert of the sewer main at wyes and plugs shall be shown in tabular form on the plans. Sanitary sewer services shall be located a minimum of ten (10) feet from water services, typically on the downhill side of the water service.

Sanitary sewer service connections shall only be made to District mains in public streets. Service connections to District mains in easements shall be reviewed and approved by the District on a case-by-case basis.

2.9 CLEANOUTS

Cleanouts are not permitted on Southgate Sanitation District lines (i.e. lines 8-inches in diameter or greater). Cleanouts should be installed on 4-inch and 6-inch private service lines at the following locations: any change in direction requiring horizontal or vertical bends, every 100 feet of installed service line, and at other locations as required to clean the entire service line by rodding.

2.10 OIL, SAND AND GREASE INTERCEPTORS

2.10.1 General

All restaurants, cafeterias, supermarkets, bakeries, food processing, or other food preparation facilities shall have a grease interceptor installed on the sewer service line. The grease interceptor sizing and location shall be determined by the Owner's Engineer based on the criteria outlined below. All calculations shall be submitted to the District for review. Construction, ownership and maintenance of the grease interceptor shall be the Owner's responsibility. Bypasses are not permitted around grease interceptors.

Facilities which discharge any quantities of sand, oil or other inert debris into the sanitary sewer service shall have a sand and oil interceptor installed on the sewer service line. Examples of such facilities include, but are not limited to: automobile service stations, mechanical repair shops, car washes, garden nurseries, warehouses, and parking garages with floordrains. The sizing and location of the sand and oil interceptor shall be determined, at a minimum, based on the criteria outlined below. All calculations shall be submitted to the District for review. Construction, ownership and maintenance of the sand and oil interceptor shall be the Owner's responsibility. Bypasses are not permitted around sand and oil interceptors.

In all cases, sand, oil and grease interceptors shall be located on the service line outside the building served, upstream of the location where human waste enters the service, and so installed and connected as to be easily accessible for inspection and cleaning. The District will determine whether a sand, oil, and grease interceptor is required whenever a new service line is proposed, and whenever an existing service line changes ownership or intended use. If the District determines that an existing facility needs to have a sand, oil, and/or grease interceptor installed, the Owner shall be required to provide the interceptor at his own cost, even if the interceptor was not originally required on the service line. Construction details for sand, oil and grease interceptors may be found in Section 5 of these Specifications.

- 2.10.2 Engineering Review - Two (2) sets of plans and specifications, including complete mechanical and plumbing sections with interceptor detail and calculations shall be submitted to the District for review prior to construction. This submittal will be accompanied by a narrative explanation of the operation or process from which the interceptor will be receiving drainage. Interceptor designs must meet the criteria set forth in the following paragraphs and in accordance with the appropriate sections in the District's Rules and Regulations.

Drawings shall be submitted to the District indicating, but not limited to the following:

- o Building use and size, site layout, proposed service locations, size, alignment, grades and tie-in locations.
- o Service sizing calculations.
- o Proposed interceptor location with respect to the building, street improvements and landscaping.
- o Interceptor sizing and by-product rate of generation calculations.
- o Interceptor shop drawings.
- o Process description of system generating sand, oil or grease.
- o The proposed maintenance schedule.

The District will review the above information in order to verify that an interceptor will be installed that is generally in conformance with accepted practices. The District is not responsible for the sizing or adequacy of the interceptor to perform its intended use, and assumes no responsibility regarding the interceptors' maintenance or operation.

The installation uses a two (2) stage precast vault located outside the building, in accordance with the Oil & Sand Interceptor and Commercial Grease Interceptor details found in Section 5 of these Specifications.

- 2.10.3 Criteria - It is the Owner's and/or Owner's Engineer's responsibility to determine the

adequate size of the interceptor. When determining the minimum size of interceptor required, the following criteria shall be observed.

(a) Common Provisions:

Grease interceptors shall conform to the "Commercial Grease Interceptor Detail," Drawing No. 26. The interceptor selection shall be based on the required capacity of the interceptor. If the interceptor must be installed within the building due to space limitations, prior written authorization must be obtained from the District. The basic formula for sizing grease interceptors is: (turnover rate) x (categorical use factor) x 2.5 (gallons of water) x (seating capacity). The categories and formulas for each type of establishment are as follows:

(b) Specific Category Criteria:

Category A - Restaurant/Cafaterias Full or limited service with the capability to serve or prepare 100 or more meals per day. Plumbing Fixtures: one pot sink, one 2- or 3-compartment sink, one hand sink, one mop sink, one floor sink, one dishwasher, one garbage disposal -- NOT CONNECTED TO THE GREASE INTERCEPTOR.

Equipment: one grill, one fryer, one to three ovens.

FORMULA:

$2.0 \times 1.0 \times 2.5 \times \text{seating}$

Category A-1 - Same criteria as the previous category with the additions listed:

Plumbing Fixtures: The same as previously listed; however, the garbage grinder will be directed to the interceptor.

Equipment: The same as previously listed.

FORMULA:

$2.0 \times 1.25 \times 2.5 \times \text{seating}$

Category A-2 - Same criteria as A-1 with the following additions and differences listed:

Plumbing Fixtures: For each additional garbage grinder and dishwasher that is to be directed to the grease interceptor, there will be a factor of .25 added to the Categorical Use Factor (C.U.F.).

Equipment: For each additional "Wok" stove, deep fryer and grill, there will be a factor of .50 added to the categorical factor.

Category B - This category is for hospitals, schools, institutions, and care facilities.

FORMULA:

Hospitals/Schools: $2.0 \times .75 \times 2.5 \times$ bed usage or seating
Institutions/Care Facilities: $2.0 \times 1.0 \times 2.5 \times$ seating or bed usage

These formulas will be adjusted by the following when necessary:

A value of .25 will be added to the Categorical Use Factor for each dishwasher or garbage disposal directed to the grease interceptor above the number of one each.

A value of .50 will be added to the C.U.F. for each additional deep fryer or grill above the number of one each.

Category C - This category encompasses deli stores with meat cutting facilities, supermarkets with meat cutting capabilities, and/or bakeries retail and wholesale bakery facilities and butcher shops.

FORMULA:

(hours of operation) $\times 4.0 \times 10$

For each of the following conditions, a factor of .50 is to be added to the C.U.F. value of 4.0 when dealing with meat cutting:

- More than one floor drain
- Complete cooking of meats

When dealing with retail type bakeries or supermarkets that have bakery facilities in addition to a deli and/or meat cutting, the bakery shall be sized separately using the same formula as above with the deletion of the .50 adjustment for the cooking of meats. There is an adjustment of an addition of 1.5 to the C.U.F. when dealing with bakeries that are wholesale only or are of the industrial classification.

Category D - This category is for food courts or "common" traps. Each case shall be sized by separating each of the potential contributors into its own category, then combining the operations for a total trap size.

Example: Mile High Food Court Tenants List: McDonalds, Taco Bell, Wong Le's Mongolian, Mrs. Fields Cookies, Little Caesars Pizza.
McDonalds, Taco Bell, and Wong Le's would be sized using the formula applicable for Category A-2; Little Caesars could be sized by using

Category A-1; and Mrs. Fields would use the formula for Category C.

Category E - Commissaries, commercial kitchens, and caterers must be sized on an individual case-by-case basis. However, it should be noted that the minimum acceptable size for a commercial kitchen shall be 1,500 gallons.

Category F - This category shall include all food manufacturing types. Each case is evaluated separately. Whenever a manufacturing operation is evaluated, it must be noted that a control manhole will be required in most cases in addition to a minimum of a 1,500 gallon grease interceptor.

Note: Seating capacity can be approximated, using 10 sq. ft. of dining area per person.

- (c) Commercial oil and sand trap interceptors shall conform to the "Oil and Sand Trap Interceptor Detail," Drawing No. 25, unless the District has accepted an alternative.
- (d) Oil and Sand Interceptor Sizing - The formula is: volume = (flow rate from building x 2.0 hours of retention time) x 2. The minimum size shall be 300 gallons.

2.10.4 Connections

- (a) All drains from the kitchen, food preparation, and dishwashing areas shall be connected to the grease interceptor.
- (b) Garbage grinders not connected to the grease interceptor shall not be used for disposal of grease. However, the District, at its discretion, may require any garbage grinder to go through the grease interceptor.
- (c) All drains from automotive servicing areas, etc., will be connected to oil and sand interceptors.

2.10.5 Maintenance

The responsibility of cleaning and maintaining the interceptor in efficient operating condition shall be the Owner's and/or lessee's responsibility. Grease interceptor shall be accessible and shall be inspected on a periodic basis by representatives of the District.

All sand, oil and grease interceptors must be pumped out at a maximum interval of every quarter year. Cost of pump out shall be at Owner's expense.

No testing will be performed by the District. The District does retain the right as allowed by Colorado State Statute, to review all interceptors during regular business hours, on an unscheduled basis, to determine if the unit is operating and being maintained on a regular basis.

2.11 INDUSTRIAL PRETREATMENT

Any development which generates industrial wastewater will be required to install a pretreatment process prior to the sewage effluent entering the public sanitary sewer system. It is the industrial Property Owner's responsibility to be in compliance with the City of Englewood's "Wastewater Utility Ordinance." The Owner is required to contact the City of Englewood/City of Littleton Bi-City Sewage Treatment Plant (phone no. 762-2600) to determine the type and degree of pre-treatment required.

2.12 UNDERDRAINS

For the purposes of this section 2.12, Underdrains are defined as facilities and systems designed to collect and convey groundwater which may accumulate around building foundations.

Underdrains shall not be installed within any sanitary sewer trench, public or private, without the express written consent of the District, and then only upon the terms and conditions stated herein

