DATE: January 1, 2025

TO: Water Utilities Customers

FROM: Greg Baier, P.E., Interim Director of Water Utilities
Gilbert Quant, Chief Building Official

SUBJECT: **Grease Interceptor Regulations**

The Water Utility manages regulations on the discharge of fats, oils, and grease (FOG) into the sewer system. Eliminating FOG minimizes damage to the sewer system, reduces clogs and blockages to sewer flow, and prevents wastewater overflows, which violate state and federal regulatory compliance regulations.

In compliance with state regulations to reduce the damaging effects of FOG in the public sanitary sewer systems, the City of Lubbock Ordinances Chapter 22, Article 4, entitled *Wastewater System*, prohibits the passing of "solid or viscous substance capable of causing obstruction to the flow in sewers" (22.04.083 b.4) and limits the amount of fat, oil or grease a waste water can contain to maximum of 250 mg/L by weight (22.04.255). The Ordinance further prescribes that pretreatment of such substances be accomplished through the construction of a *grease trap*, *grease interceptor*, or *oil separator* (22.04.256).

The City of Lubbock Building Safety Department will require an approved design and installation of a pretreatment device any time that the Plumbing Code requires a permit for such construction or remodeling. The 2021 International Plumbing Code requires grease traps and interceptors to be designed and constructed according to Section 1003 *Interceptors and Separators*.

After construction of an approved pretreatment device, periodic evaluations from Water Utilities inspectors may occur at any time to assure compliance with ordinance, applicable codes, and state and federal laws. Additional inspections are likely if (1) there is a change in ownership, use, or occupancy of a facility, or (2) there is a related construction or remodeling project that requires a permit from the City. Pretreatment units will also be inspected if there are indications or evidence that illegal discharges may be occurring.

Compliance with these regulations is required by law and very much appreciated by the City, but a system designed and maintained as per these standards will often minimize potentially significant wastewater surcharges and fines to the owner/operator. For additional information, helpful materials, or special assistance, please visit the Grease Interceptor page on the City's webservice by scanning the QR code below, or call either of the following numbers.

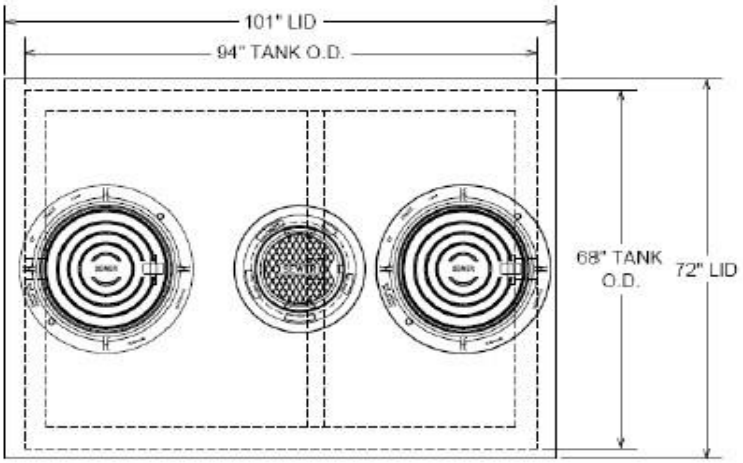
Building Safety Department, (806) 775-2087

Industrial Waste Monitoring and Pretreatment (806) 775-3221

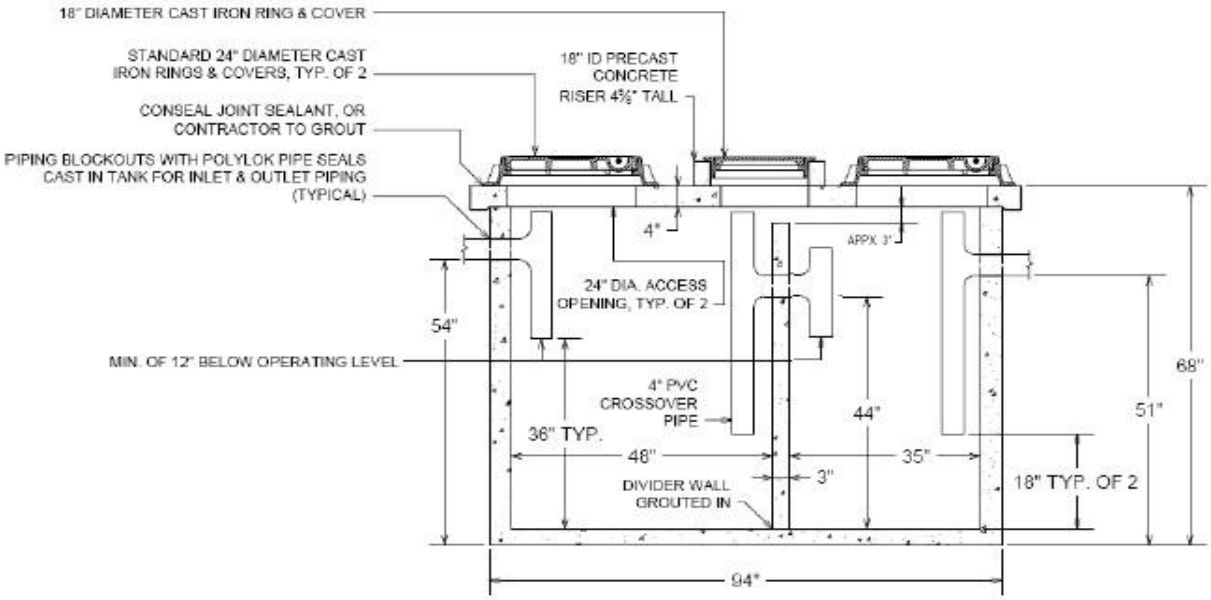
City of Lubbock TEXAS

WASTEWATER

GUIDANCE DOCUMENT FOR SIZING AND INSTALLATION OF GREASE INTERCEPTORS



PLAN VIEW



SECTION VIEW

Part I: Guidance for Grease Interceptor Sizing and Design Criteria

A. Introduction:

Information contained within this document is based on standard industry practices and guidance found in both the 2021 International Plumbing Code (IPC) Commentary and the Uniform Plumbing Code (UPC), Appendix H. Size, type, and location of grease traps shall be in accordance with the manufacturer's instructions, City of Lubbock Plumbing Codes Section, and Code of Ordinance, 22.04, Wastewater System, Division 7, Section 255.

B. Applicability:

These requirements are applicable to all commercial food service establishments, including those that are undergoing:

1. New construction.
2. Interior remodeling to accommodate expansion or operational modifications.
3. Changes of ownership/occupancy.
4. Any facility which may be experiencing difficulty achieving compliance with maintenance and/or wastewater discharge limitations.

B. Sizing Requirements:

Sizing methods described herein are intended as guidance in determining grease trap/interceptor sizes that will afford the City's sanitary sewer system a minimum degree of protection against grease and other obstructing materials. In approving a customer's plumbing or grease interceptor design, the City does not accept liability for the failure of a system to adequately treat wastewater to achieve effluent quality requirements specified under City of Lubbock, Code of Ordinance 22.04, Wastewater System, Division 7, Section 256. It is the responsibility of the generator and/or contractors to insure the appropriate level of treatment necessary for compliance with wastewater regulations.

Minimum acceptable grease interceptor sizing shall be accomplished as follows:

a. Sizing according to formulas found in Section D below.

b. Where sizing formulas result in determination of a grease interceptor less than 750 gallons in capacity, this minimum size is required wherever possible.

c. In the circumstance of "single service kitchens" with no food preparation (heat/serve only), and which use only paper service items, a minimum 50 gallon per minute (gpm) flow rated, or 100-pound grease retention, mechanical grease trap may be used. In these instances, the grease trap is to be installed in an area separate from food handling area, and the trap must be readily accessible for cleaning and maintenance. (See Section F, below)

D. Grease Interceptor Sizing Formulas:

It is the responsibility of the generator and his/her contractors to ensure that the wastewater discharged from their facility is in compliance with the City's discharge limitations. For the purpose of plans review, a general assessment of grease trap/interceptor design and size will be performed using the following formulas. (These formulas have been demonstrated as industry

standards capable of achieving the City's discharge criteria when systems are maintained in proper condition.)

Method 1: Uniform Plumbing Code, Appendix H (Grease Interceptor Sizing Worksheet Available)

Number of meals x waste flow x retention x storage = Size Requirement Per peak hour (1) rate (2) time (3) factor (4) (liquid capacity)

Factors:

1) Number of meals served at peak operating hour (Seating Capacity) x Peak Factor
    a. Where Peak Factor for Fast Food Restaurant is… 1.33
    b. And, Peak Factor for all other food service types is….1.00

2) Waste Flow Rate:
    a. With Dishwasher……6-gallon flow
    b. Without Dishwasher……...5-gallon flow
    c. Single Service kitchen……..……. 2-gallon flow
    d. Food waste disposer…….. 1-gallon flow
3) Retention Times
    a. Commercial kitchen waste/dishwasher……2.5 hours
    b. Single service kitchen/single serving……1.5 hours
4) Storage Factors
    a. Fully equipped commercial kitchen …..8 hr. operation…1
    b. ……..16 hr. operation…2
    c. ……....24 hr. operation…3
    d. Single Service Kitchen… 1.5

The Uniform Plumbing code includes a built-in safety factor that can yield very large grease interceptor size specifications. At this time, the City is not requiring interceptors larger than 2,000 gallons. However, the decision to use a trap smaller than that specified by the formula and calculations above is to be addressed in the plan submission.

Method 2: Five (5) Hour Detention/Peak Flow

A. Gallons of water used per hour of operation
B. A x 0.75 = average "gray water" flow per hour
C. B x 1.9 peak flow factor
D. C x 5 hours detention = volume of trap Required volume of trap = A x B x C x D

E. Alternate Sizing Formulas / Proposals

Food service establishments that propose the use of alternate sizing techniques and/or procedures that result in specifications that differ from calculated requirements (or are less than the MIMIMUM 750-gallon recommendation), must submit:

1. Alternate Sizing Worksheet - must be signed by a licensed plumbing contractor or professional engineer.
2. Alternate Sizing Letter – must be signed by the owner/operator of the facility.
3. Data to support the installation of the proposed alternate size grease interceptor and any documentation that demonstrates the facility's ability to meet effluent quality requirements.
4. Detailed specifications on the grease interceptor/trap being proposed.

Grease and oil interceptors/traps shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight and equipped with easily removable covers which, when bolted in place, shall be gastight and watertight. Proposed grease interceptors/traps shall not:

a. Warp, twist, become distorted or deformed when properly installed.
b. Be constructed of materials that are easily corroded by wastewater and/or the gases associated with wastewater.

F. Construction/Installation:

All permitting, construction, and inspection activities must be completed in accordance with the City of Lubbock Plumbing Code. Additionally, the following specifications must be incorporated into grease interceptor design.

a. The grease interceptor shall be constructed with a minimum of one baffle.

b. Grease interceptors are to be installed at a minimum distance of 10 ft. from sinks and dishwashers to allow for adequate cooling of the wastewater. Water temperatures must be less than 120 degrees prior to entering grease interceptor.

c. All grease bearing waste streams should be routed through an appropriate grease interceptor, including: three-compartment sinks, pot/pan sinks, soup kettles, hand-washing sinks, dishwashers, mop sinks and floor drains.

   Notable Exceptions: Drains that receive "clear waste" only, such as from ice machines, and condensate from coils a may be plumbed to the sanitary system without passing through the grease interceptor with the condition that the receiving drain is a "hub" type that is a minimum of two inches above the finished floor.

d. All concrete grease interceptors will be equipped with three manholes. Two twenty-four-inch diameter manhole type rings and lids, one on the primary side and one on the secondary side to serve as maintenance access ports. The center inspection port shall be located over the baffle wall piping with a minimum eighteen-inch diameter cast iron ring and lid.
e. Acceptable materials that can be used to construct risers for manholes and/or center

inspection ports on concrete interceptors are as follows:

Traffic Rated locations:

1. Concrete Grade Rings- 4,000 PSI minimum
2. Reinforced Concrete Pipe (RCP) – 4000 PSI minimum

Non-Traffic locations:

1. Concrete Grade Rings - 4,000 PSI minimum
2. Reinforced Concrete Pipe (RCP) - 4000 PSI minimum
3. High Density Polyethylene (HDPE) Grade Rings
4. Black Double Wall Corrugated HDPE Pipe

Note: Bricks, cinder blocks, wood products, corrugated galvanized steel or aluminum pipe, PVC pipe and any other materials not listed above are not acceptable to construct manhole risers for concrete grease interceptors. If these materials are used, the materials will be required to be removed and corrected with ***no exceptions.***

Grout & Sealants:

1. Ram-Nek or its equivalent must be used to seal between the grease interceptor lid, each grade ring and the manhole ring.
2. The first grade ring must also be grouted to the grease interceptor lid.

Composite, Polyethylene, and Fiberglass Grease Interceptors:
These interceptors may only use manufacture supplied manhole and inspection port risers. If located in traffic areas the interceptors, risers and lids must be H-20 rated.

All Grease Interceptors are to be installed outside with an Effluent Sampling Well. Sample wells will have a **minimum 10" diameter access cover and a minimum 6" drop from inlet to outlet piping** through the sampling well. Sample wells must be located in areas that are protected from vehicle traffic, where they cannot be driven over or parked on. Mechanical grease traps that are installed must be equipped with an influent flow regulator. Mechanical grease traps and interceptors are required to have an Effluent Sampling Well that allow for sample collection.

G. Customer (Generator) Responsibilities:

It is the responsibility of the customer (waste generator) to insure compliance with the City of Lubbock's discharge limitations specified in City of Lubbock, Code of Ordinance 22.04, Wastewater System, Division 3, Section 83.

Hazardous wastes, such as acids, strong cleaners, pesticides, herbicides, paint, solvents, or gasoline shall not be disposed of where they would go through grease interceptors or grit traps. Care must be taken in system design when commercial dishwashers are discharged through a grease interceptor. Dishwashers use detergents and elevated water temperatures that will melt grease. If the interceptor is either too small or too close to the commercial dishwasher, grease may pass through the interceptor and into the collection system.
Generators are responsible for maintaining grease interceptors in continuous proper working condition, by removing the oil and grease buildup in the interceptor at a minimum of once every ninety (90) days to ensure compliance with, City of Lubbock, Code of Ordinance, 22.04. 256(c) (1). If a user can, at his/her own expense, produce scientific evidence consisting of FOG test results analyzed in accordance with Code of Federal Regulations, 40

CFR 136.3, as same may be amended from time to time, that establishes that a ninety (90) day pumping schedule is not necessary to otherwise comply with this article, the director of water utilities may prescribe an alternate maintenance interval for such user. Evaluation of the disputed trap maintenance schedule shall be performed on a case-by-case basis requiring scientific evidence for each individual factual situation.

Further, generators are responsible for inspecting, repairing, replacing, or installing apparatus and equipment as necessary to ensure proper operation and function of grease interceptors and compliance with discharge limitations at all times.

The City of Lubbock and TCEQ require grease trap/interceptor maintenance records be maintained on site for three (3) years. Further, generators are responsible to inspect and verify visually that their grease interceptor has been fully evacuated by the grease waste hauler.

The City of Lubbock, Industrial Waste Monitoring and Pretreatment (IWMP) section does not allow the use of enzymes, solvents, and emulsifiers as they will only change the form of grease, allowing it to be carried out of the trap/interceptor with the wastewater and deposited in the collection system.

Part II: Other types of Interceptors and sizing requirements

All pretreatment interceptors are to be located outside and required for oil, grease, sand and other substances harmful or hazardous to the building drainage system, the public sewer or sewage treatment plant. Design, size, and location of pretreatment devices must be submitted by a licensed plumbing contractor or professional engineer for review and approval.

A. Laundries

Commercial Laundries, Laundromats, and dry-cleaners shall be equipped with an interceptor in order to reduce the quantity of lint and silt that enter the collection system. The system must be of adequate size and design to allow for cool-down of wastewater so that separation can be more readily achieved. The interceptor must be installed with a wire basket or similar device, removable for cleaning that prevents passage into the drainage system of solids larger than1/4 inch in any dimension, string, rags, buttons or other materials detrimental to the public sewerage system.

Sizing must be in accordance with guidance found in the Uniform Plumbing Code (UPC), Appendix H, which uses the following formula:

(TGC) x (CPH) x (RT) x (ST) = Size of Lint Interceptor (gallons) Where:
TGC = Total Gallons per Cycle CPH
= Cycles per hour
RT = Retention time
2.5 for Institutional Laundry
2.0 for Standard Commercial Laundry
1.5 Light Commercial Laundry
ST = Storage Factor, based on hours of operation;
1.0 for 8 hours of operation
1.5 for 12 or more hours

Currently, an effluent sample well is ***not*** required for small commercial laundries. However, large and/or industrial laundries may be subject to Federal Pretreatment regulations. For more information please contact the, Industrial Waste Monitoring and Pretreatment Division, at (806) 775-3221.

B. Car Washes

Self-service car washes shall have grit separators with a minimum capacity of 1000 gallons for the first bay, with an additional 500 gallons of capacity for every other bay.

Additionally, wash racks must be constructed to eliminate or minimize the impact of run-off from rain/storm events. Minimum requirements are roofed structures with at least two walls and appropriate grading to prevent stormwater infiltration into the sanitary sewer.

An effluent sampling well is required, per specifications listed in Part 1, Section F, Subsection e.

C. Automotive Repair Facilities (Garages and Service Stations)

Where automobiles are serviced, greased, or repaired or where gasoline is dispensed, oil/water separators shall have a minimum capacity of 500 gallons for the first 1000 square feet of area to be drained, plus 250 gallons for each additional 1000 square feet of area to be drained into the separator.

An effluent sampling well is required, per specifications listed in Part 1, Section F, Subsection e.

Note: Parking garages shall not require a grit separator unless vehicle servicing, repairing, washing or, gasoline dispensing occurs. Areas in commercial garages utilized only for storage of automobiles are not required to be drained through a grit separator.

D. Hydraulic Elevators

Where hydraulic elevators are in operation, an oil/water separator shall be in use. An effluent sampling well is ***not*** required. Sizing shall be provided by a licensed engineer and approved by the City of Lubbock Pretreatment Department.

Known Vendors:

Grease Interceptors, Grease Traps, Sample Test Wells, Drain Grates & Screens

Company	Phone	Products
C&M Supply Co. Lubbock, Texas	(806) 747-3557	Plastic Grease Traps, 50 & 70 GPM, Drain Grates & Screens
Ferguson Bath & Kitchen Lubbock, Texas **Morrison Supply Co.** Lubbock, Texas	(806) 762-0241	Precast Concrete Interceptors, Sample Test Wells, Drain Grates & Screens
Oberkampf Supply Lubbock, Texas	(806) 765-6888	Sample Test Wells, Drain Grates & Screens
Vaughn Concrete Prods. Inc. Amarillo, Texas **Consolidated Concrete Prods.** Hewitt, Texas	(806) 747-4481	Precast Concrete Interceptors, Sample Test Wells, Drain Grates & Screens
Drain Saver Lubbock, Texas	(877) 827-8255	Precast Concrete Interceptors, Sample Test Wells
Manville's Newbury Park, California	(254) 666-4000	Precast Concrete Interceptors, Sample Test Wells
Green Turtle Americas Charlotte, NC	(888) 557-2837	Commercial & Residential Drain filters
Park USA Dallas, Texas	(805) 499-5565	Floor Sink Liners
Schier Products Edwardsville, KS	(877) 428-8187	Grease & Solids Interceptors Oil & Sediment Interceptors, Sample Test Wells
	(866) 842-8801	Grease, Oil & Sand Interceptors Sample Test Wells Inlets / Acid Tanks
	(800) 827-7119	Grease, Oil & Sand Interceptors Sample Test Wells

The companies or vendors listed above are those currently known to the City of Lubbock as providing pretreatment devices, products or equipment. It is possible that other companies or vendors may manufacture and/or provide other acceptable pretreatment devices, products or equipment. In the event you would like to know whether the product, device or equipment you are considering installing is acceptable to the City of Lubbock, please contact the City Of Lubbock Industrial Waste Monitoring & Pretreatment Office at 775-3221.

Grease Interceptor Sizing Worksheet

The Uniform Plumbing Code Formula

Company		Calculated By		Date	
Project		Location			

Follow these six simple steps to determine grease interceptor size.

	No of Meals Per Peak Hours		Waste Flow Rate		Retention Time		Storage Factor		Calculated Interceptor Size		Grease Interceptor
Enter Calculations > Here		X		X		X		=			
	Step 1		Step 2		Step 3		Step 4		Step 5		Step 6

1 **Number of Meals Per Peak Hour (Recommended Formula):**

Notes:

Seating Capacity		Meal Factor		Meals per Peak Hour
	X		=	

Establishment Type:	Meal Factor
Fast Food (45 min)	1.33
Restaurant (60 min)	1.00
Leisure Dining (90 min)	0.67
Dinner Club (120 min)	0.50

2 **Waste Flow Rate:**

Notes:

Condition	Flow Rate
With a Dishwashing Machine	6 Gallons
Without a Dishwashing Machine	5 Gallons
Single Service Kitchen	2 Gallons
Food Waste Disposer Only	1 Gallon

3 **Retention Time**

Notes:

Commercial Kitchen Waste	
Dishwasher	2.5 Hours
Single Service Kitchen	
Single Serving	1.5 Hours

4 **Storage Factor**

Notes:

Kitchen Type	Storage Factor
Fully Equipped Commercial	
Hours of Operation	
8 Hours	1.00
12 Hours	1.50
16 Hours	2.00
24 Hours	3.00
Single Service Kitchen	1.50

5 **Calculate Liquid Capacity**

Notes:

Multiply the values obtained from step 1, 2, 3 and 4. The result is the approximate grease interceptor size for this application

6 **Select Grease Interceptor**

Notes:

Using the approximate required liquid capacity from step 5, select an appropriate size as recommended by the manufacturer.

For IWMP Use Only

Date:

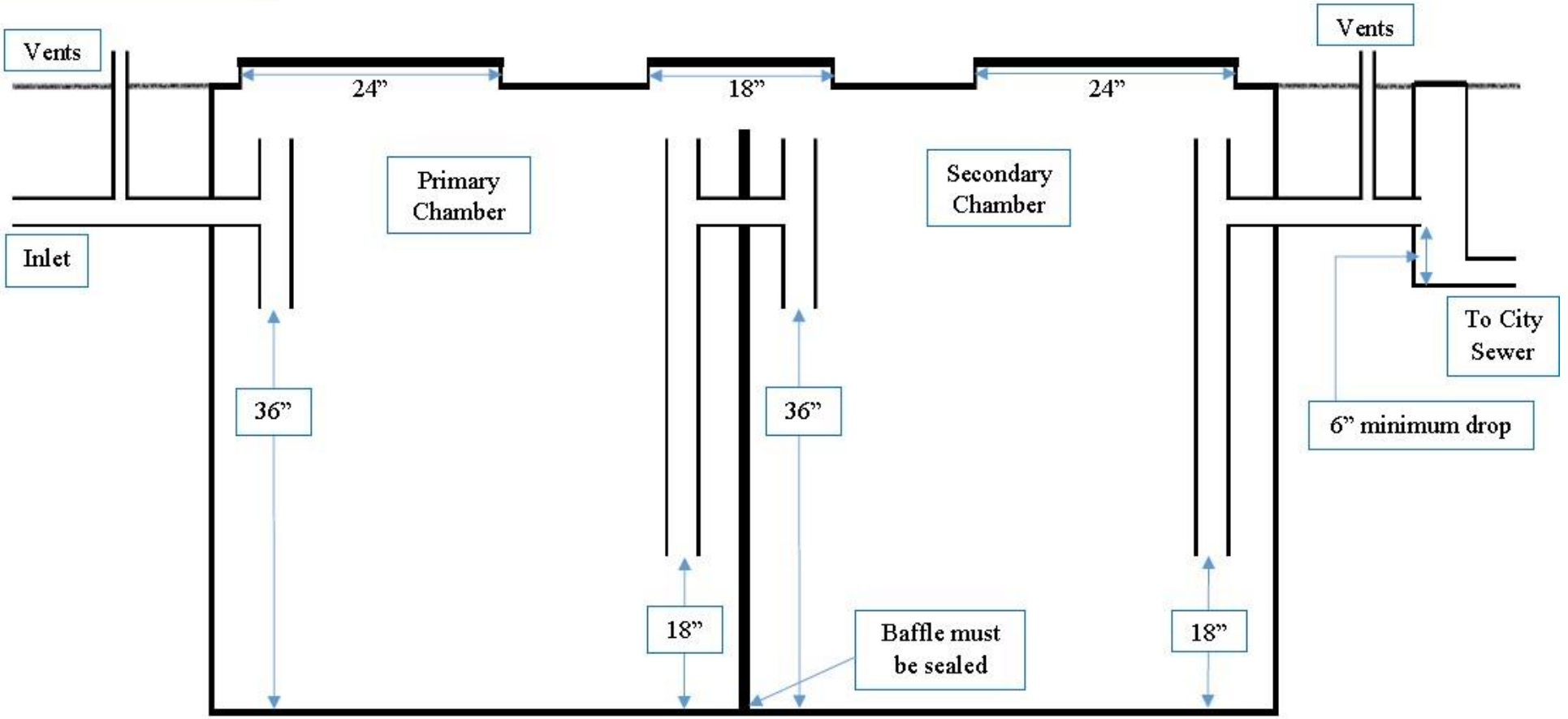
Name of Approver:

Signature:

City of Lubbock TEXAS

WASTEWATER

Typical Grease Interceptor and Sample Port



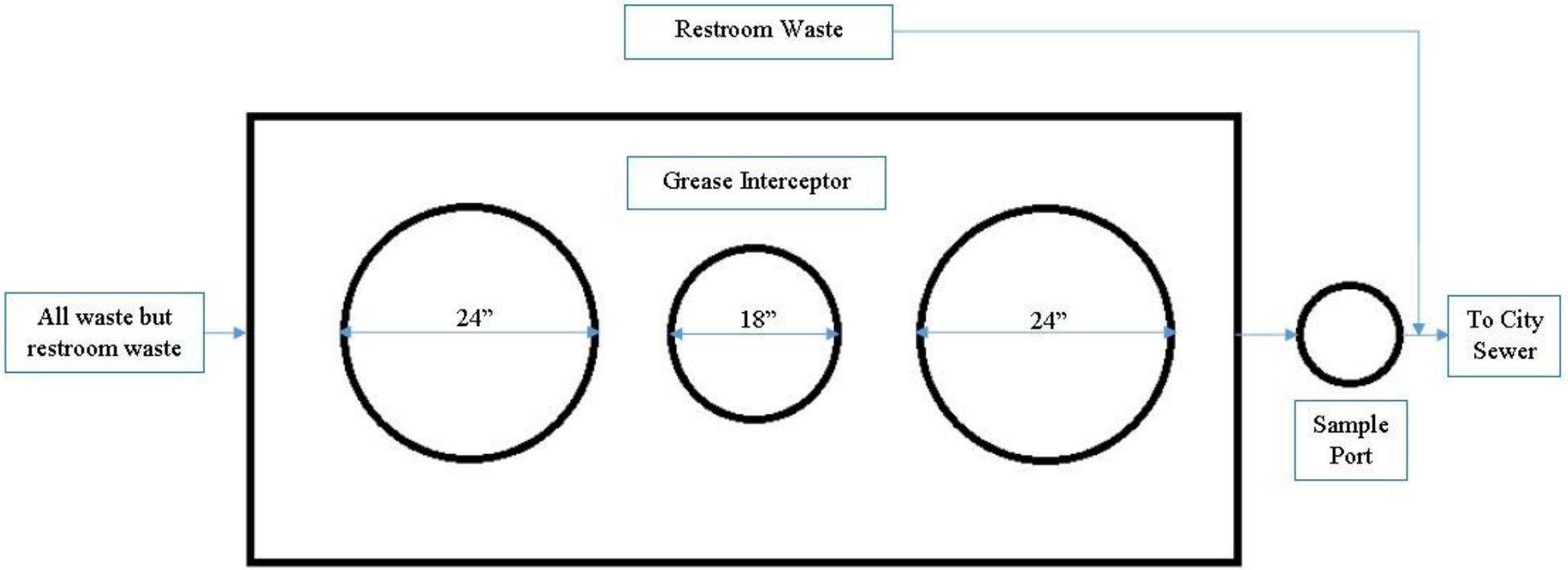
Notes on Grease Interceptors:

1. Ram-Nek, or equivalent, must be used in between grease interceptor to riser, riser to riser, and riser to ring
2. Risers, rings and lids must be made to match traffic rating
3. Rings must be anchored to the riser and riser to the grease interceptor
4. Lids must be at or above grade
5. Primary and secondary chamber manholes must be 24” minimum and over the piping tees
6. Baffle wall must not leak between two chambers
7. Center Manhole must be minimum of 18” and over baffle wall piping

For more information please call the Industrial Waste Monitoring and Pretreatment office at (806) 775-3221

City of Lubbock TEXAS
WASTEWATER

Typical Grease Interceptor and Sample Port Layout



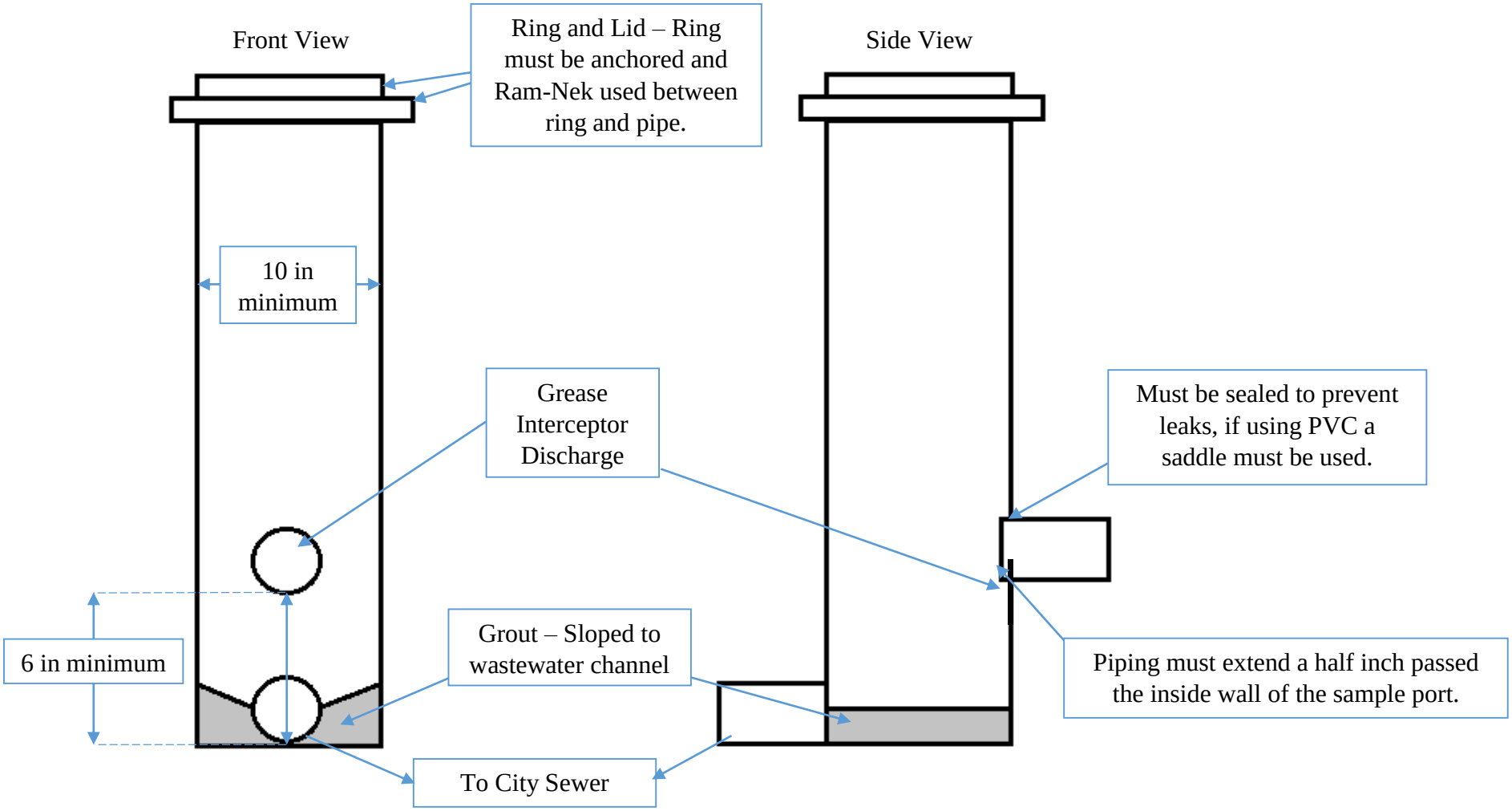
Notes:

1. The openings on the grease interceptor must be over the internal piping.
2. The grease interceptor must have an 18 inch (minimum) inspection port if the interceptor contains a baffle.
3. The grease interceptor can be in a traffic location if it meets H-20 requirements.
4. The sample port must have a 6 inch (minimum) drop from inlet to out.
5. The sample port cannot hold water.

For more information please call the Industrial Waste Monitoring and Pretreatment office at (806) 775-3221

City of Lubbock TEXAS
WASTEWATER

Typical Sample Port



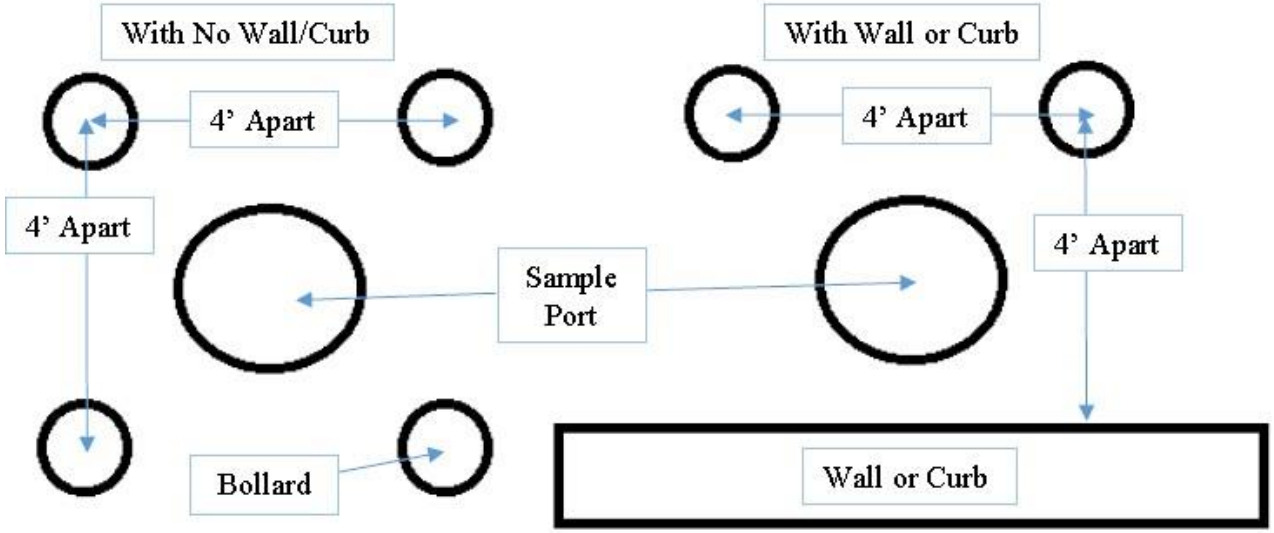
Notes on Sample Ports:

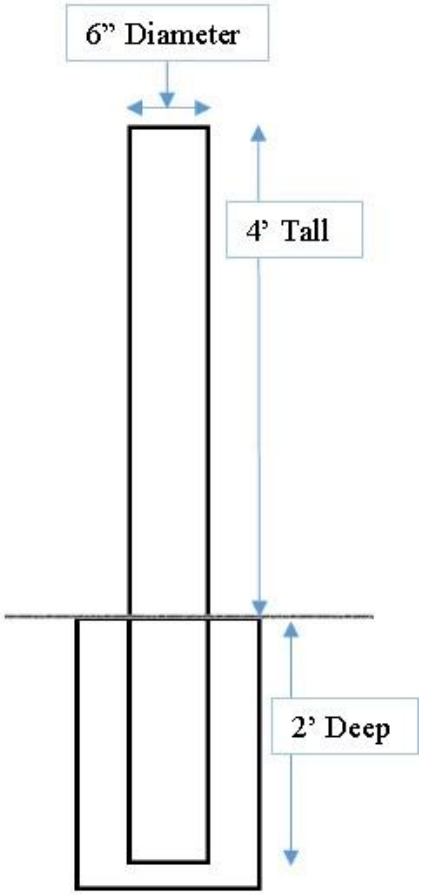
1. Sample ports must have no gap below outflow port and drain completely without holding any water. Sample ports holding water will not be approved.
2. Samples ports that are "straight-through" are only permitted per special circumstance and must be approved prior to the rough inspection. Failure to do so may result in a failed inspection.
3. Sample ports cannot be in a traffic area and must be accessible at all times.

For more information please call the Industrial Waste Monitoring and Pretreatment office at (806) 775-3221

IWMP Bollard Requirements

- The minimum size of bollards shall be:
  - 4 feet tall
  - 2 feet deep (buried in concrete)
  - 6 inches in diameter
- Minimum of 4 bollards surrounding sample ports
  - All bollards must be 4 feet apart
  - Walls or curbs only account for 2 bollards
- All bollards must be metal pipe filled with concrete
  - All exposed metal shall be painted traffic yellow
- All bollards must be approved by IWMP personnel prior to installation





Web: www.mylubbock.us/iwmp Phone: (806) 775-3221 Email: IWMP@mylubbock.us

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