

APPENDIX M

PROCEDURES FOR DESIGN, CONSTRUCTION AND INSTALLATION OF INTERCEPTORS AND SEPARATORS

(APPENDIX M IS A REQUIREMENT OF THIS CODE)

M101 GENERAL

The provisions of this appendix shall apply to the design, construction, installation and testing of interceptors and separators required in accordance with 1004.

M102 DEFINITIONS

Definitions contained in Chapter 2 shall also apply to this appendix except where the following special definitions shall apply:

BOTTLING PLANT SEPARATOR - an interceptor designed to separate and retain broken glass and other solids.

GREASE INTERCEPTOR - an interceptor of less than 125 gallon capacity which is designed and installed so as to separate and retain grease and which is generally installed indoors entirely above grade.

GREASE TRAP - an interceptor of at least 125 gallon capacity which is designed and installed so as to separate and retain grease and which is generally installed below grade outdoors with provisions for above grade accessibility for cleaning purposes.

LAUNDRY TRAP - an interceptor designed to separate and retain lint, strings, rags, buttons or other similar materials which may be discharged from laundries.

OIL SEPARATOR - an interceptor designed to separate and retain waste oil and other petroleum products.

SAND INTERCEPTOR - an interceptor designed to separate and retain sand, gritty material or other types of heavy solids.

SLAUGHTER HOUSE SEPARATOR - an interceptor designed to separate and retain feathers, entrails and other similar substances.

SPECIAL TYPE SEPARATOR - an interceptor designed to separate and retain deleterious, hazardous or undesirable matter from normal wastes for proper disposal, rendering, or recycling.

M103 GENERAL REGULATIONS

M103.1 Size and Type

The size and type of each interceptor or separator shall be determined according to maximum volume and rate of discharge and shall be approved by the Plumbing Official.

M103.2 Location

The location of each interceptor or separator shall be approved by the Plumbing Official.

M103.3 Prior Approval

No interceptor or separator shall be installed until its design, size, location and venting has been approved by the Plumbing Official.

M103.4 Cleanout on Discharge Line

A two-way cleanout shall be provided on the discharge line immediately downstream of all interceptors.

M103.5 Grease Traps/Grease Interceptors

M103.5.1 Grease traps will be required in all instances of new construction or substantial renovation of buildings or facilities. In addition, a grease trap will be required for existing buildings or facilities when a proper installation can be performed without the need to break up a concrete slab.

M103.5.2 At the discretion of the Plumbing Official, grease interceptors may be allowed when the conditions for a grease trap installation do not exist or cannot easily be met [*e.g.*, (1) new construction or substantial renovation of buildings or facilities is not being performed and a concrete slab would have to be broken at the existing building or facility for the proper installation of a grease trap, (2) an outside, unpaved area surrounding the building where a grease trap could be installed is available; however, it is determined that the area is too far away from the plumbing fixtures that the grease trap would be servicing, or (3) the installation of a grease trap is unfeasible such as when servicing a kitchen which is located on the upper floors of a multistoried building].

M104 GREASE TRAPS

M104.1 In accord with M103.5.1, an approved type grease trap complying with provisions of this section shall be installed in the waste line leading from sinks, drains and other fixtures or equipment in establishments such as restaurants; cafes; lunch counters; cafeterias; bars and clubs; hotels; hospitals; sanitariums; factory, school or day care center kitchens; markets; or other establishments where grease may be introduced into the drainage or sewage system in quantities that can affect line stoppage or hinder sewage treatment or private sewage disposal, except when, in the opinion of the Plumbing Official, they are not necessary.

M104.2 Minimum Capacity

M104.2.1 General

A grease trap should be designed to be large enough to allow the water contained within it to remain cold since only cold water separates grease. In addition, a grease trap should be designed to be large enough so that it requires cleaning at a frequency no more often than once per month.

M104.2.2 Without Garbage Grinder

The minimum capacity for applications without a garbage grinder shall not be less than 125 gallons below the static water level. This capacity is sufficient to hold the flow from one meal long enough to accomplish proper grease separation when serving up to 50 people. When over 50 people are served, a proportionately larger grease trap shall be provided based upon 2 1/2 gallons per person.

M104.2.3 With Garbage Grinder

When a garbage grinder is connected (see 1004.11.1), the grease trap shall have a minimum capacity of no less than 500 gallons below the static water level. This capacity is sufficient to hold the flow from one meal long enough to accomplish proper grease separation when serving up to 50 people. When over 50 people are served, the minimum grease trap capacity shall be increased beyond 500 gallons based upon at least 2 1/2 gallons per person.

M104.2.4 Alternate Sizing Formula

For informational purposes only, an alternate sizing formula may be found in Appendix J.

M104.3 If a grease trap must be installed within an enclosed building, any access covers shall be gasketed to prevent the intrusion of odors into the building.

M104.4 A one compartment grease trap is acceptable; however, a two compartment, or a one compartment grease trap with a baffle wall between the inlet and outlet, is preferred.

M104.5 The grease trap shall be placed as close to the plumbing fixture(s) discharging greasy waste as possible, but preferably on the outside of the building when feasible.

M104.6 The minimum diameter of the outlet pipe shall not be less than four inches.

M104.7 A minimum of one foot of air space shall be provided above the static water level.

M104.8 Venting

M104.8.1 The grease trap outlet shall be properly vented to prevent the trap from siphoning itself out. Any internally vented outlet line shall have the vent terminal extended to within two inches of the bottom of the access cover to prevent grease from escaping the grease trap through the open vent terminal.

M104.8.2 For those grease traps having a gasketed cover, the grease trap outlet line shall not be allowed to be inter-

nally vented. In this case, the outlet line itself shall have a two inch vent pipe properly installed.

M104.9 The invert of the grease trap outlet opening, at the point where water exits the grease trap, shall be located at a maximum of six inches and a minimum of four inches from the floor of the grease trap. This requirement also applies to any intermediate outlets in multi-compartment grease traps. The invert of the inlet shall be at least three inches above the invert of the outlet.

M104.10 On unbaffled single compartment grease traps, a 90° ell shall be used on the inlet and shall terminate six inches below the static water level. On baffled single compartment grease traps, a baffle wall shall be placed between the inlet and outlet. The inlet shall discharge into the grease trap at a level at least six inches below the top of the baffle wall. The baffle wall shall extend from two inches below the static water level to the bottom of the grease trap such that incoming water will have to overflow above the top of the baffle wall in order to reach the outlet.

M104.11 The horizontal distance between the inlet and outlet piping in the grease trap should be sufficient to allow gravity-differential separation to the grease so that it will not escape through the outlet. The minimum horizontal distance shall be twenty-four inches.

M104.12 Access/Covers

M104.12.1 Access from the top of the grease trap shall be provided by an easily removable cover above an access opening of at least twenty inches square or twenty-four inches round. Additional access opening/covers shall be provided as necessary to provide accessibility to each compartment in multi-compartment or multi-baffled arrangements as well as access to both the inlet and outlet. Access opening covers shall be above or at grade to provide ready accessibility.

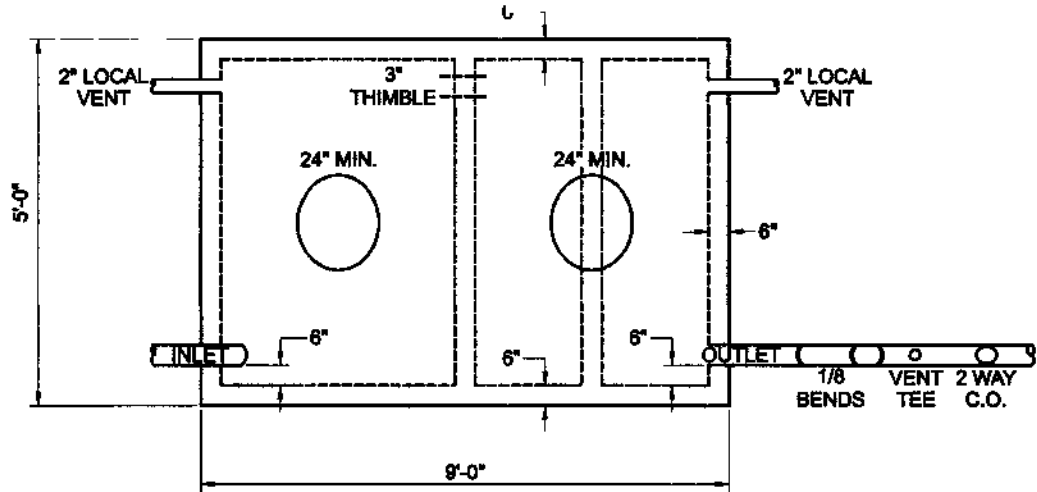
M104.12.2 Each access cover shall be designed so that it cannot slide, rotate, or flip when properly installed in order that the opening is not unintentionally exposed. (The intention is that a child-resistant cover be provided. Especially for lightweight covers, mechanical fasteners are recommended to augment the safety of and ensure positive closure of the cover.)

M104.13 No water jacketed grease trap shall be approved or installed.

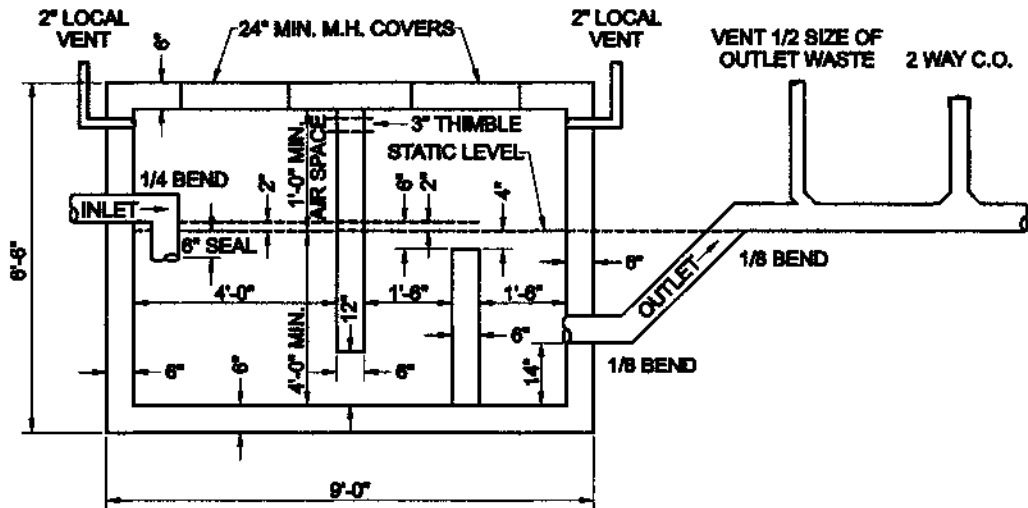
M104.14 Each grease trap shall have an approved water seal of not less than 2 inches in depth or the diameter of its outlet, whichever is greater.

M104.15 Abandoned grease traps shall be pumped and filled as required for abandoned septic tanks in accord with Chapter XIII (Sewage Disposal), Appendix A, section 1.22 of the State of Louisiana Sanitary Code.

NOTE:
IF 3" THIMBLE IS USED AS ILLUSTRATED,
ONE 2" LOCAL VENT MAY BE ELIMINATED



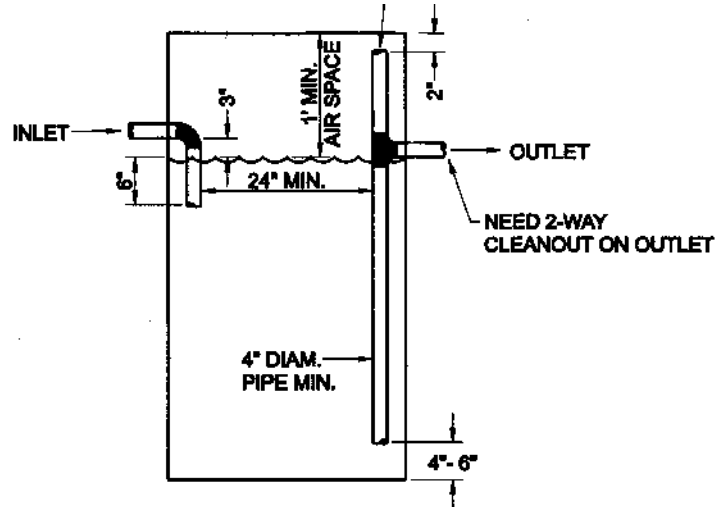
Grease Trap (top view)
Figure M104.A (1 of 2)



Grease Trap (side view)
Figure M104.A (2 of 2)

NEED EASILY REMOVABLE COVERS-
AT LEAST 20" SQUARE OR 24" ROUND.
TOP OF GREASE TRAP AT OR ABOVE
GRADE.

LEAVE TOP OPEN (IF
OUTLET LINE NOT
VENTED)



Min. volume below invert of outlet = 125 gallons

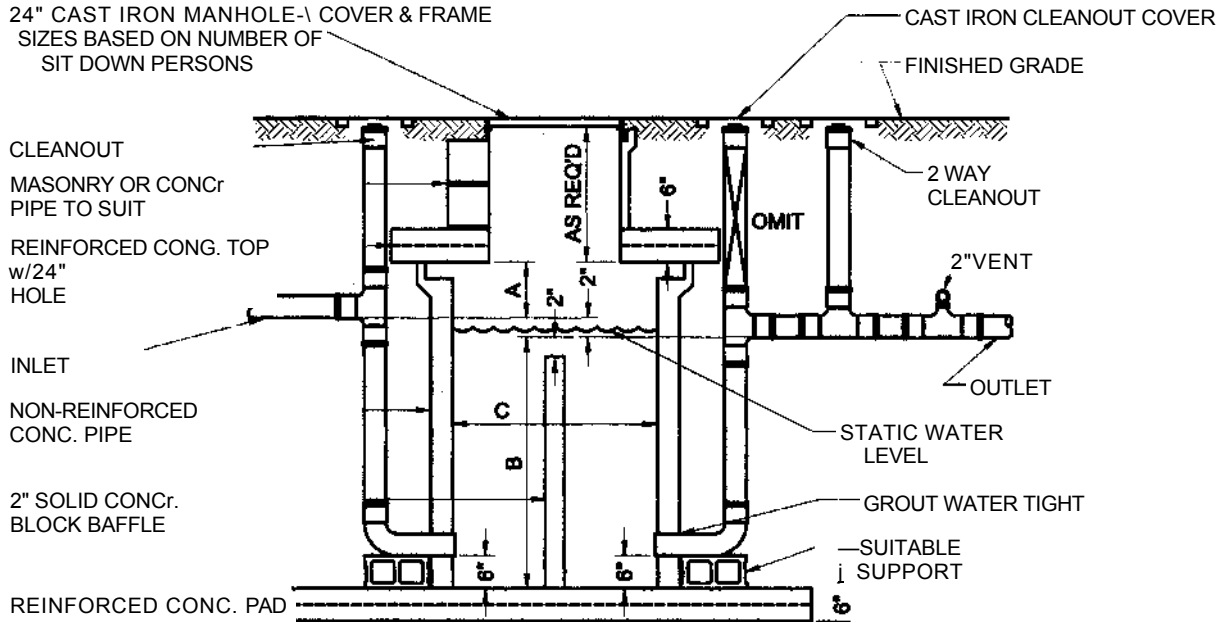
= 2' x 2' x 4' water depth
(would have to be built 2'
x 2' x 5' in order to give
1' air space above water
line)

or = 2' x 3' x 3' water depth*
(would have to be built 2'
x 3' x 4' in order to give
1' air space above water
line)

(* This would be preferred in order to
keep inlet & outlet at least 24" apart
from each other.)

**Grease Trap (sanitary details only)
Figure M104.B**

GREASE TRAP



| INTERCEPTOR | DIM. A | DIM. B | DIM. C | |
|-------------|--------|--------|--------|-----------------|
| SIZE 1 | 12" | 36" | 36" | 3x3x3 = 63 PEO |
| SIZE 2 | 12" | 36" | 48" | 4x4x3 = 113 PEO |
| SIZE 3 | 12" | 60" | 60" | 5x5x5 = 294 PEO |

NOTES:

1. THE BOTTOM OF THE INLET PIPE SHALL BE NOT LESS THAN 2 INCHES ABOVE THE BOTTOM OF THE OUTLET PIPE.
2. THE BOTTOM OF THE OUTLET PIPE SHALL BE 2 INCHES ABOVE THE TOP OF THE BAFFLE WALL.
3. TRAP INDICATED ABOVE IS FOR CONCRETE PIPE CONSTRUCTION. ALTERNATE MATERIAL AND METHODS OF INSTALLATION MUST BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.

RECTANGULAR 3x3x3
 = 81 PEOPLE 4x4x3
 = 164 PEOPLE 5x5x5
 = 375 PEOPLE

**Grease Trap
 Figure M104.C**

M105 GREASE INTERCEPTORS

M105.1 If allowed by the Plumbing Official pursuant to M103.5.2, an approved type grease interceptor complying with PDI-G101 and the provisions of this section may be installed in the waste line leading from sinks, drains and other fixtures or equipment in establishments such as restaurants; cafes; lunch counters; cafeterias; bars and clubs; hotels; hospitals; sanitariums; factory, school or day care center kitchens; markets; or other establishments where grease may be introduced into the drainage or sewage system in quantities that can affect line stoppage or hinder sewage treatment or private sewage disposal, except when, in the opinion of the Plumbing Official, they are not necessary.

M105.2 No grease interceptor shall be installed which has an approved rate of flow of less than 20 gallons per minute, except when specially approved by the Plumbing Official.

M105.3 Each plumbing fixture or piece of equipment connected to a grease interceptor shall be provided with an approved type flow control or restricting device installed in a readily accessible and visible location in the tailpiece or drain outlet of each such fixture. Flow control devices shall be so designed that the flow through such device or devices shall at no time be greater than the rated capacity of the grease interceptors. No flow control device having adjustable or removable parts shall be approved.

M105.4 Each grease interceptor required by this section shall have an approved rate of flow which is not less than that given in Table M105 for the total number of connected fixtures. The total capacity in gallons of fixtures discharging into any such grease trap shall not exceed 2 1/2 times the certified gallon per minute (gpm) flow rate of the grease interceptors as per Table M105.

Any grease interceptor installed with the inlet more than 4 feet lower in elevation than the outlet of any fixture discharging into such grease trap shall have an approved rate of flow which is not less than 50% greater than that given in Table M105.

For the purpose of this section, the term "fixture" shall mean and include each plumbing fixture, appliance, apparatus or other equipment required to be connected to or discharge into a grease interceptor by any provision of this section.

M105.5 Each fixture discharging into a grease interceptor shall be trapped and vented in an approved manner. An approved type grease interceptor may be used as a fixture trap for a single fixture when the horizontal distance between the fixture outlet and the grease interceptor does not exceed 4 feet and the vertical tailpipe or drain does not exceed 2 1/2 feet.

M105.6 Grease interceptors shall be maintained in efficient operating condition by periodic removal of the accumulated grease. No such collected grease shall be introduced into any drainage piping or public or private sewer.

M105.7 Each grease interceptor shall have an approved water seal of not less than 2 inches in depth or the diameter of its outlet, whichever is greater.

M105.8 When grease interceptors are allowed to be installed by the Plumbing Official in commercial kitchens, a recommended sizing criteria on is provided in Table M105.

Table M105 Grease Interceptors

| Required Rate of Flow Per Minute, Gallons | Grease Retention Capacity, Pounds |
|--|--------------------------------------|
| 20 | 40 |
| 25 | 50 |
| 35 | 70 |
| 50 | 100 |

Procedure for Sizing Grease Interceptors

| Steps | Formula | Example |
|-------|--|---|
| 1 | Determine cubic content of fixture by multiplying length x width x depth. | A sink 48" long by 24" wide by 12" deep. Cubic content $48 \times 24 \times 12 = 13,824$ inches |
| 2 | Determine capacity in gallons. 1 gal = 231 cubic inches. | Contents in gallons 13,824 = 59.8 gallons 231 |
| 3 | Determine actual drainage load. The fixture is normally filled to about 75% of capacity with water. The items being washed displace about 25% of the fixture content, thus actual drainage load = 75% of fixture capacity. | Actual drainage load $0.75 \times 59.8 = 44.9$ gallons |
| 4 | Determine flow rate and drainage period. In general, good practices dictate a 1 - minute drainage period; however, where conditions permit, a 2 - minute drainage period is acceptable. Drainage period is the actual time required to completely drain the fixture. $\text{Flow rate} = \frac{\text{Actual Drainage Load}}{\text{Drainage period}}$ | Calculate flow rate for one-minute period $44.2 = 44.9$ gpm Flow Rate Two-minute period $44.9 = 22.5$ gpm Flow Rate 2 |
| 5 | Select interceptor which corresponds to the flow rate calculated. Note: Select next larger size when flow rate falls between two sizes listed. | For one-minute period- 44.9 gpm requires PDI size "50." For two-minute period- 22.5 gpm requires PDI size "25." |

Figure M105.A

M106 OIL SEPARATORS

M106.1 All repair garages and gasoline stations with grease racks or grease pits, and all factories which have oily wastes as a result of manufacturing, storage, maintenance, repair, or testing processes shall be provided with an oil separator which shall be connected to all necessary floor drains. The separation of vapor compartment shall be independently vented to the outer air. If two or more separation or vapor compartments are used, each shall be vented to the outer air or may connect to a header which is installed at a minimum of six inches above the spill line of the lowest floor drain and vented independently to the outer air. The minimum size of a flammable vapor vent shall not be less than two inches, and when vented through a sidewall, the vent shall not be less than ten feet above the adjacent level at an approved location. The interceptor shall be vented on the sewer side and shall not connect to a flammable vapor vent. All oil interceptors shall be provided with gastight cleanout covers which shall be readily accessible. The waste line shall not be less than three inches in diameter with a full-size two-way cleanout to grade. When an interceptor is provided with an overflow, it shall be provided with an overflow line (not less than two inches in diameter) to an approved waste oil tank having a minimum capacity of 550 gallons and meeting the requirements of the appropriate authority. The waste oil from the separator shall flow by gravity or shall be pumped to a higher elevation by an automatic pump. Pumps shall be adequately sized and accessible. Waste oil tanks shall have a two inch minimum pump-out connection at grade and

a 1 1/2 inch minimum vent to atmosphere at an approved location at least ten feet above grade.

M106.2 Each manufactured interceptor that is rated shall be stamped or labeled by the manufacturer with an indication of its full discharge rate in gallons per minute (gpm). The full discharge rate to such an interceptor shall be determined at full flow. Each interceptor shall be rated equal to or greater than the incoming flow and shall be provided with an overflow line to an underground tank.

Interceptors not rated by the manufacturer shall have a depth of not less than two feet below the invert of the discharge drain. The outlet opening shall have not less than an 18 inch water seal and shall have a minimum capacity as follows: where not more than 3 motor vehicles are serviced and/or stored, interceptors shall have minimum capacity of 6 cubic feet, and one cubic foot of capacity shall be added for each vehicle up to ten vehicles. Above ten vehicles, the Plumbing Official shall determine the size of the interceptor required. Where vehicles are serviced only and not stored, interceptor capacity shall be based on a net capacity of 1 cubic foot for each one hundred square feet of surface to be drained into the interceptor, with a minimum of six cubic feet.

M106.3 A combination oil and sand interceptor may be installed when the design is approved in writing by the Plumbing Official.

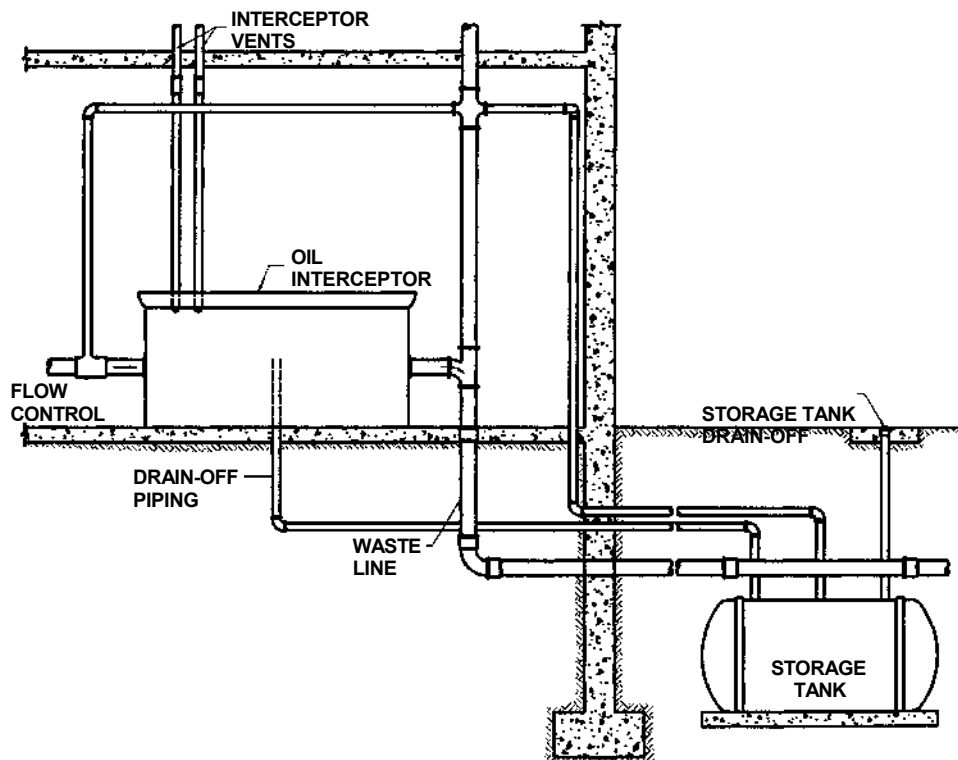
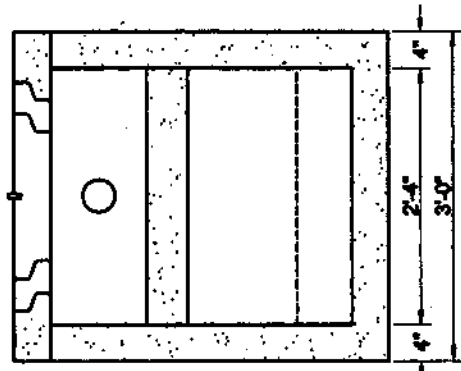
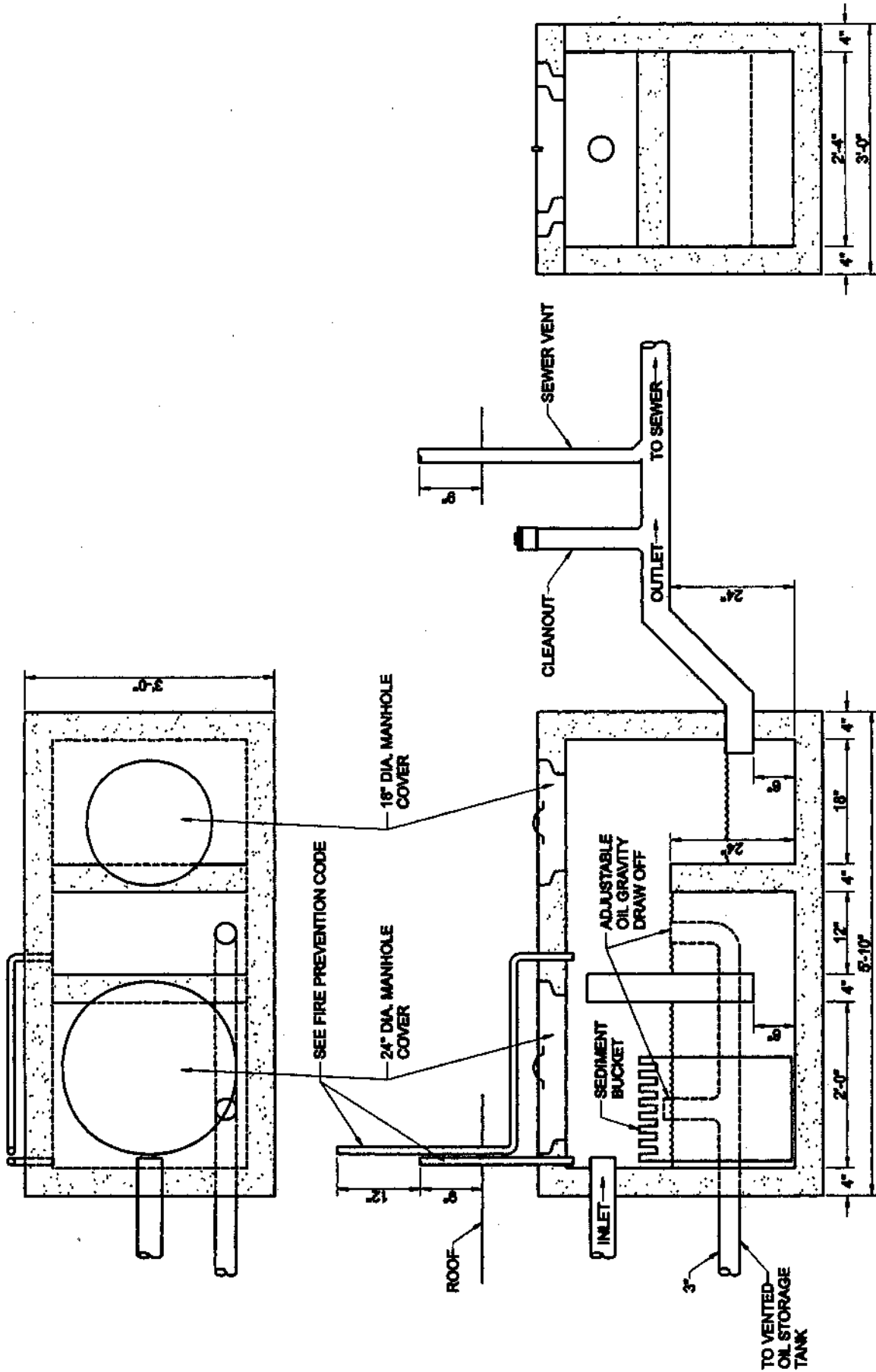


Figure M106.A



M107 SAND INTERCEPTORS

M107.1 Multiple floor drains may discharge into one sand interceptor.

M107.2 Sand interceptors shall be built of brick or concrete, prefabricated coated steel, or other watertight material. The interceptor shall have an interior baffle for full separation of the interceptor into two sections. The outlet pipe shall be the same size as the inlet, the minimum being three inches, and the baffle shall have two openings of the same diameter as the outlet pipe and at the same invert as the outlet pipe. These openings shall be staggered so that there cannot be a straight line flow between any inlet pipe and the outlet pipe. The invert of the inlet pipe shall be no lower than the invert of the outlet pipe.

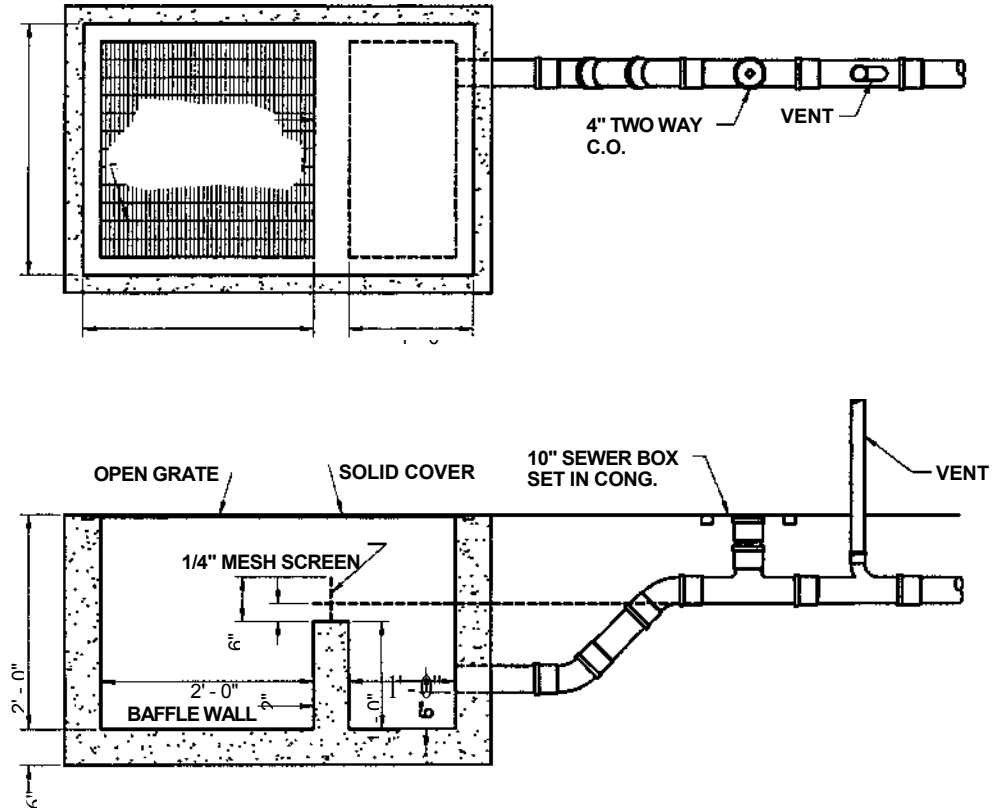
The sand interceptor shall have a minimum dimension of two feet square for the net free opening of the inlet screen and a minimum depth under the invert of the outlet pipe of two feet.

For each five gallons per minute flow or fraction thereof over 20 gallons per minute, the area of the sand interceptor inlet section is to be increased by one square foot. The outlet section shall at all times have a minimum area of 50 percent of the inlet sections.

The outlet section shall be covered by a solid removable cover set flush with the finished floor, and the inlet section shall have an open grating set flush with the finished floor and suitable for the traffic in the area in which it is located.

M107.3 Sand and similar interceptors for every solid shall be so designed and located as to be readily accessible for cleaning, shall have a water seal of not less than six inches, and shall be vented.

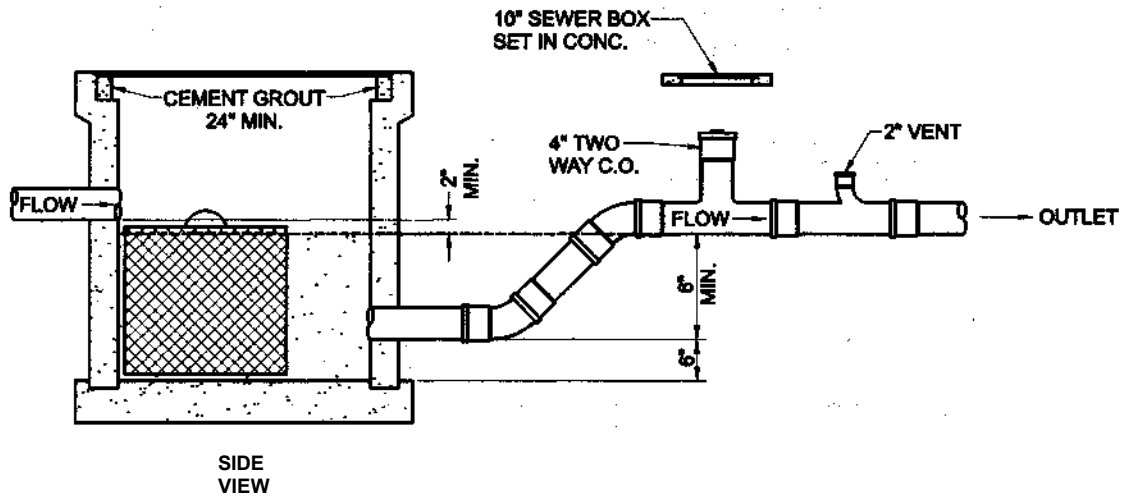
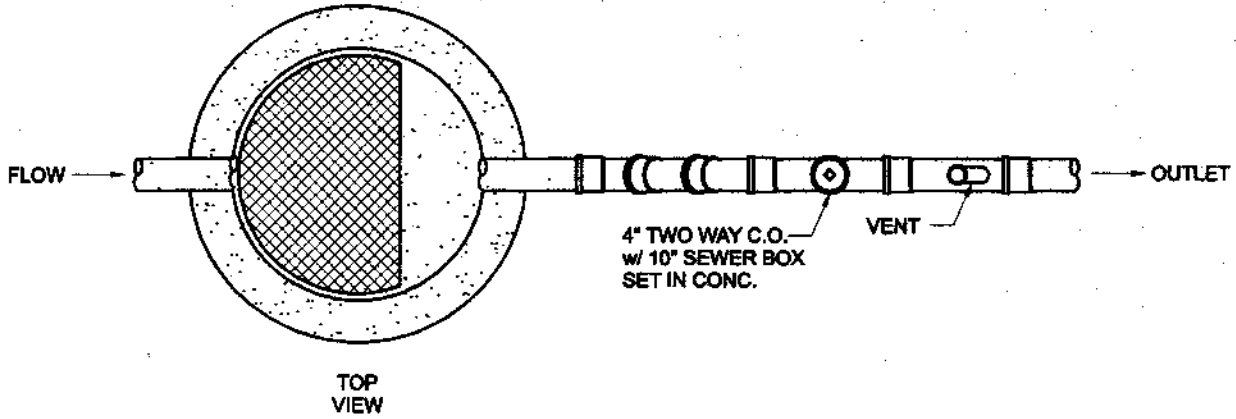
M107.4 Alternate designs for construction or baffling of sand interceptors complying with the intent of this code may be submitted to the Plumbing Official for approval.



**Sand Interceptor
Figure M107.A**

M108 LAUNDRY TRAPS

Laundry equipment that does not have integral strainers shall discharge into an interceptor having a wire basket or similar device that is removable for cleaning and that will prevent passage into the drainage system of solids $\frac{1}{2}$ inch or larger in maximum dimension, such as string, rags, buttons or other solid materials detrimental to the drainage system.



Lint Trap (with Non-Corrode Basket)
Figure M108.A

M109 BOTTLING SEPARATORS

Bottling plants shall discharge their process waste water into an interceptor which will provide for the separation of broken glass or other solids before discharging into the drainage system.

M110 SLAUGHTER HOUSE SEPARATORS

Slaughtering room drains shall be equipped with separators which shall prevent the discharge into the drainage system of feathers, entrails and other materials likely to clog the drainage system.

M111 SPECIAL TYPE SEPARATORS

M111.1 Wholesale Food Processing Establishments

Every fish, fowl and animal slaughter house or establishment and every fish, fowl and meat packing or curing establishment and every soap factory, tallow rendering, fat rendering and hide curing establishment, or any other establishment from which considerable amounts of grease are likely to be discharged into any plumbing system, sewer system, or private sewage disposal system, shall be connected to and shall drain or discharge into a grease trap approved by the Plumbing Official for this use.

M111.2 Other Special Applications

Interceptors or separators for other special type applications shall not be installed until their design, size, location and venting have been approved by the Plumbing Official.

