

**ORANGE WATER AND SEWER AUTHORITY
GREASE & OIL CONTROL**

**Standard and Specification requirements based on the OWASA Sewer Use
Ordinance**

SECTION 1 – PURPOSE

- 1.1 This portion of the OWASA Standards and Specifications provides guidelines and procedures to ensure compliance with OWASA’s Sewer Use Ordinance. These guidelines are designed to prevent the introduction of pollutants into the publicly owned treatment works that will interfere with its operation and to aid in the prevention of sanitary sewer blockages and obstructions from contributions and accumulation of fats, oils, and greases discharged to the sanitary sewer system from industrial, commercial or other nonresidential establishments.

SECTION 2 – STANDARDS

- 2.1 OWASA, like most water and sewer utilities, continues to experience sewer blockages caused by the accumulation of fats, oils and greases (FOG) in the wastewater collections system. Wastewaters containing FOG can be discharged into the system from several sources, but the major contributors are food service and vehicle maintenance operations. In order to reduce sewer blockages, customers in the OWASA service area that discharge wastewater containing grease and oils are required to install, properly operate and maintain a grease trap/interceptor or oil-water separator.
- 2.2 Grease, oil-water interceptors/traps/separators shall be installed when, in the opinion of the OWASA Administrator, they are necessary for the proper handling of liquid wastes containing floatable oil, or other potentially harmful ingredients; except that such interceptors shall not normally be required for private living quarters or dwelling units. All grease, oil-water interceptors/traps/separators shall be approved by the OWASA Administrator and the type and capacity shall be certified by a qualified professional, such as an engineer, as meeting OWASA’s requirements. All units shall be easily accessible for cleaning, testing and inspection.

SECTION 3 – DEFINITIONS

- 3.1 Cooking Establishments: Those establishments primarily engaged in activities of preparing, serving, or otherwise making available food for consumption and that use one or more of the following preparation activities: cooking by frying, baking, grilling, sautéing, rotisserie cooking, broiling, boiling, blanching, roasting, toasting, or poaching. Also included are infrared heating, searing, barbecuing, and

- any other food preparation activity that produces a hot, non-drinkable food product in or on a receptacle that requires washing.
- 3.2 Fats, Oils, and Greases: Organic polar compounds derived from animal and/or plant sources that contain multiple carbon chain triglyceride molecules. These substances are detectable and measurable using analytical test procedures established in 40 CFR 136, as may be amended from time to time. All are sometimes referred to herein as “grease” or “greases”.
- 3.3 Food Preparation or Serving Facility: Any commercial or industrial facility that prepares or serves food.
- 3.4 Grease Interceptor: A device typically located outside of the facility served, typically underground and rated in gallons of capacity. This device is used for separating and retaining waterborne greases and grease complexes prior to the wastewater exiting the interceptor and entering the OWASA sanitary sewer collection and treatment system. These devices also serve to collect settled solids, generated by and from food preparation activities, prior to the water exiting the interceptor and entering the sanitary sewer collection and treatment system.
- 3.5 Grease Traps: A device typically located inside a food service facility designed for separating and retaining waterborne greases and grease complexes prior to the wastewater exiting the trap and entering the OWASA sanitary sewer collection and treatment system. These devices are typically rated at flow rates of no more than 35 gallons per minute (gpm). *“Note: Use of all devices of this type requires a variance approval from the OWASA Administrator”.*
- 3.6 Minimum Design Capability: The design features of a grease interceptor and its ability or volume required to effectively intercept and retain greases from grease-laden wastewaters discharged to the public sanitary sewer.
- 3.7 Non-Cooking Establishments: Those establishments primarily engaged in the preparation of precooked foodstuffs that do not include any form of cooking. These include cold dairy and frozen foodstuffs preparation and serving establishments.
- 3.8 Oil-Water Separators: A device typically located outside the facility served and typically underground, rated in gallons of capacity. This device is used to separate oil, sand and other debris from vehicle maintenance facilities, car washes and trash dumpster pads.
- 3.9 OWASA Administrator: The person or persons designated by the Executive Director of OWASA to administer the guidelines, procedures and practices set forth in this document.

- 3.10 User: Any person, including those located outside the jurisdictional limits of OWASA, who contribute, cause or permit the contribution or discharge of wastewater into the OWASA sewer collections system, including persons who contribute such wastewater from mobile sources, such as those who discharge hauled wastewater.
- 3.11 Vehicle Maintenance Facility: Any commercial or industrial facility where automobiles, trucks or equipment are serviced or maintained, including garages, service stations, repair shops, oil and lubrication shops, car washes or similar establishments.
- 3.12 Existing Building(s): A building as it exists at the time of submittal.
- 3.13 Renovation of an existing Building: A construction project that will renovate only the interior portion of an existing building in which the building footprint has not changed.
- 3.14 Modification of an existing Building: An existing building that will have exterior renovation made to it, and/or additional building added on to the existing building footprint.
- 3.15 New building or structure: Construction of a new building, structure, or facility.
- 3.16 Existing Restaurant: A facility currently being used as a food service or preparation establishment.

SECTION 4 – APPLICABILITY

- 4.1 The following types of facilities will be required to have grease interceptors/traps. All food service establishments such as, but not limited to the following: restaurants, schools, hospitals, nursing homes, day cares, grills, café, cafeteria, snack bar, deli, catering service, bakery, grocery store, butcher shop, coffee shop, ice cream/yogurt shop, and any other facility (as deemed by the OWASA Administrator) that discharges wastewater containing grease into the OWASA sewer collection system. All such establishments are required to have a properly sized and functioning grease interceptor/trap which a qualified professional has certified to OWASA is designed to meet OWASA's Sewer Use Ordinance and grease and oil control requirements.
- 4.2 All Vehicle Maintenance Facilities will be required to have oil-water separators. All separators at such establishments shall be properly sized by a qualified professional and certified to OWASA that the design meets OWASA's Sewer Use Ordinance and Grease and Oil Control requirements.

- 4.3 Facilities other than those noted in Section 4.1 and 4.2 may require the installation of a grease interceptor/trap and/or an oil-water separator. The OWASA Administrator shall determine the need and applicability of such device.
- 4.4 A new building or structure shall require an outside, appropriately sized, grease interceptor to be installed if a food preparation/service establishment is planned. If a food preparation/serving Facility is not planned at time of construction, a suitably sufficient area for an outside interceptor shall be reserved.

SECTION 5 – DESIGN

- 5.1 The following documents shall be submitted to the OWASA Administrator for review and approval prior to issuance of a permit for installation of an interceptor/trap/separator:

1. Grease and Oil Control [Fact Sheet](#).
2. A site plan showing the location of the interceptor/trap/separator, lines, cleanout(s) and manholes. The submittal will also include a plan view of the kitchen area showing all fixtures, with equipment schedule and appropriate labels, and associated connections to the interceptor/trap/separator.
3. A detail of the proposed interceptor/trap/separator demonstrating the unit complies with all requirements outlined herein (refer to OWASA standard detail [537.01](#)), or the appropriate shop drawing with the actual size proposed indicated on the shop drawing.
4. Interceptor formula using the OWASA grease Interceptor Calculation Sheet, found at, <http://www.owasa.org/development-project-documents-and-forms>, used to determine the interceptor capacity in total volume (gallons) signed by a licensed Professional Engineer, Registered Architect or licensed Plumber.
5. Trap Formula using the trap calculation sheet to determine the trap capacity by rate of flow (gallons per minute) signed by a licensed Professional Engineer, Registered Architect, or Licensed Plumber.
6. Oil-Water separators shall be sized as stated in 5.6 below.
7. Note: Once the applicant's design is approved, any changes to the approved plan must be approved, in advance and in writing, by the OWASA Administrator prior to implementation of any change.

5.2 The following items shall connect to an interceptor or trap:

- 3 or 4 compartment sinks
- All pre-rinse sinks
- Red and White meat preparation sinks
- Floor or trench drains in the area of tilt kettles
- Mop sinks
- Can wash
- Dish Machines
- Smog Hog type air cleaning systems

5.3 The following items shall not be connected to an interceptor or trap:

- Drainage systems conveying sanitary waste (toilets, lavatories, etc.) shall not be connected to the influent side of the interceptor/trap/separator.
- Dishwashers equipped with booster heaters and/or using water in excess of 140° F shall not pass through any grease interceptor/trap.
- Food Waste Grinders: Waste from these units shall be discharged directly into the building's sewage plumbing system without passing through a grease interceptor/trap. All other fixtures and drains receiving kitchen or food preparation wastewater shall pass through a grease interceptor/trap.
- Vegetable preparation sinks
- Ice Machines
- Hand sinks
- Floor drains or floor trench drains (exception shall be in the area of tilt kettles or deep fryers)

5.4 GENERAL INFORMATION

- Solids interceptors or strainer baskets shall be utilized in all areas.
- Grease interceptors/traps/separators shall be vented in accordance with the North Carolina Plumbing Code.
- Grease interceptor/separators shall be designed using standard engineering principles for sedimentation and floatation in gravity separators. Baffles and good inlet and outlet design are required to deflect the flow across the surface areas of the units and sufficient grease and solids storage capacity is required. Grease interceptors and oil water separators shall be rated for the design capacity in total gallons. Some oil water separators may be sized in gpm. This requirement will be handled on a case by case basis.
- All interceptors and oil/water/sand separators of the pre-cast type shall have an inlet "T" (terminating a minimum of 18" above bottom of tank), a Baffle "T" (terminating a minimum of 12" above the bottom of tank) and an outlet "T" (terminating a minimum of 12" above bottom of tank). All "T's" shall extend above the water level line of the interceptor/trap/separator.
- All interceptors should be located outside of the building in such a manner that OWASA personnel are able to inspect the interceptor at any time. However, interceptors and traps may be installed interiorly, in lieu of large outside interceptors when OWASA deems this to be acceptable. See section 6 for locations where these units may be used.
- Full size cleanouts shall be installed at both the inlet and outlet side of the interceptor.

- The use of enzymes, grease solvents, thermal sources, emulsifiers, biological additives, etc. is not permitted.
- Grease traps/interceptors/separators shall be installed by licensed plumbers or other entities with expertise and significant experience in grease trap/interceptor installation.
- Access Manholes for Grease Interceptors/Separators shall have a minimum diameter of 24” (inches) and shall be provided over each chamber. The access manholes shall extend at least to finished grade and be designed and maintained to prevent water inflow or infiltration. The manholes shall be constructed in accordance with OWASA detail [537.01](#).

5.5 Existing buildings and restaurants: See section 3 for definitions and section 6 for permitted allowance of use.

5.6 CAR WASH and DUMPSTER PADS

Oil-Water separators shall be sized based on the following information:

- Car wash:
 - Facilities containing two or fewer bays require a 1,000 gallon separator. Facilities containing three or four bays will require two 1,000 gallon separators. Facilities containing five or six bays will require three 1,000 gallon separators.
- Vehicle Maintenance shop:
 - Separator will be sized assuming that each floor drain in the maintenance shop shall have a flow rate of 50 gpm.
- Dumpster Pads:
 - 500 gallon separator is required per floor drain.

SECTION 6 – EXISTING ESTABLISHMENTS/BUILDINGS AND RESTUARANTS

- 6.1 Establishments and other locations subject to this regulation which were in operation before the effective date of this regulation and do not have a grease interception or oil-water separation system will be required to install such a system within six (6) months of the effective date of this regulation. Such establishments/businesses may receive approval from the OWASA Administrator, to install a system under alternate standards taking into account the circumstances of the business’s operation, production of waste grease/oils and the practicality of installation under normal requirements.
- 6.2 Existing businesses that have an existing grease interception or oil-water separation system that does not meet OWASA’s standards may be required to upgrade the system. However, the OWASA Administrator in some cases may

allow the establishment to continue use of the present system subject to requirements such as the adoption of increased maintenance and cleaning frequencies.

- 6.3 OWASA shall be notified of any operational or process changes (food preparation methods, equipment, additional bays, floor drains, etc.) at any approved establishment. Establishments that modify their operations in a manner that will result in increased loadings of grease, fats or oils to their existing interceptor/trap/separator may be required to upgrade their interceptor/trap/separator to meet current requirements and standards.
- 6.4 Existing Buildings fall under two categories as defined in the definitions section 3 of this Standard.
- Renovation of an existing building shall not be required to install an outside interceptor for the up-fit of the existing space. These types of up-fits shall require the installation of a unit rated in gallons per minute which will accommodate the items listed in the design section that are to be connected to an interceptor/trap. Acceptable type units are, but not limited to, the Thermoco Trapzilla or Green Turtle Proceptor.
 - Modification of an existing building, as defined, shall require an outside interceptor to be installed.
- 6.5 Existing restaurants shall be required to comply with the regulation as outlined in this standard. These existing restaurant locations will typically have an existing interceptor or trap in place. If a new restaurant is moving into an existing restaurant space and is not planning any renovation or modification to the building (such as a name change only), the new restaurant will be allowed to continue use of the existing trap/interceptor. The owner will be required to submit all necessary paperwork including calculations verifying that the trap/interceptor is adequately sized for the intended use.

SECTION 7 – SERVICING, INSPECTIONS AND RECORDS

- 7.1 Regular servicing and maintenance are essential for the efficient operation of grease interceptors/traps/separators. All interceptors/traps/separators shall be maintained by the Owner(s) at the Owner(s) expense to ensure efficient, effective operation at all times. All interceptors/separators shall be serviced and emptied of accumulated waste as required in order to maintain minimum design capability or effective volume of the interceptor/separator. Servicing frequency is site-specific and is dependent on the amount of oil and grease and suspended solids generated at each operation and the size of the grease interceptor or oil-water separator. The maximum duration between cleanings shall be every 60 days on interceptors/separators that are 1000 gallons and larger. The maximum duration between cleanings shall be every 45 days for smaller capacity interceptors

(between 200 and 999 gallons). Traps (PDI rated trap units), under sinks, in floor, et cetera, shall have a maximum duration between cleanings of every 30 days.

The initial cleaning frequency of all newly installed interceptors or traps, or all recently opened food service establishments, shall be every 14 days. All cleaning frequency times set forth in the permit letter may be adjusted by submitting the appropriate variance adjustment form.

- 7.2 Grease interceptors/separators shall be cleaned/pumped by a properly licensed cleaning and disposal agent (as per NCGS 130A-291). Cleaning shall include the complete removal of all contents within the interceptor/separator. Back flushing of the interceptor or its wastes is prohibited. The owner shall ensure no waste or wastewater from the interceptor/separator is introduced into OWASA's collection system, into the environment, or otherwise improperly disposed of during cleaning/maintenance operations. Records demonstrating that cleaning/pumping operations were performed by properly licensed agents shall be maintained by the Owner(s), and this information shall be made available to OWASA upon request.
- 7.3 Grease trap(s) may be cleaned by Owner(s) if a septage permit issued by the State of North Carolina is obtained by that Owner (per NCGS 130A-290(32)). Owner(s) not holding a valid permit shall use a properly licensed cleaning and disposal agent.
- 7.4 All users, including food preparation/servicing facilities and vehicle maintenance facilities shall maintain a written record of maintenance performed on the interceptor for a minimum of three years. The record shall indicate the date and time of service and shall include the name of the agent that performed the maintenance/cleaning work. Upon request, all such records will be made available for inspection by OWASA.
- 7.5 Inspection of the interceptors/traps/separators will be performed periodically by OWASA personnel. The owner/employees of the facility shall be responsible, upon request, for opening all plates, lids, covers, doors, etc. as necessary to allow inspections to be conducted. OWASA shall not be held liable for any and all damage that may occur as result of these inspections.
- 7.6 On any occasion where interceptor/traps/separators are found to be in need of cleaning, all required actions necessary to remedy the deficient condition(s) shall be completed **within 7** business days of the date the deficiency was reported. All interceptors/traps/separators found to be in need of maintenance or repair shall have those conditions corrected **within 14** calendar days of the date that the deficient condition(s) were reported.

SECTION 8 – VARIANCE/APPEAL

- 8.1 Under certain circumstances, users may require special exceptions to this standard. If an exception to this standard is requested, the user must demonstrate that any requested exceptions to the standard will not adversely affect OWASA's sanitary sewer collection or treatment works.
- 8.2 The OWASA Administrator reserves the right to make determinations of grease interceptor/trap/separator adequacy and need based on review of all relevant information included in **the submitted plans**.
- 8.3 **The OWASA Administrator may grant a variance to provide relief of the cleaning frequency required as set forth in the original approval letter. Please complete the appropriate form to gain this variance.**

SECTION 9 – ENFORCEMENT

- 9.1 Failure to comply with the requirements of this standard or any other related provisions as outlined in the OWASA Sewer Use Ordinance may result in the assessment of fines, civil penalties or a discontinuance of sewer service. **This authority extends to requiring necessary repairs, modification and/or replacement of interceptors/traps/separators and their key components.**
- 9.2 In accordance with the latest OWASA Rates and Fees Schedule, all facilities subject to the Grease and Oil Control standards will be subject to an inspection fee and will be charged an additional fee when conditions dictate that a re-inspection of the installed system is necessary.

Orange Water and Sewer Authority Grease and Oil Fact Sheet

Project Information		
Facility:	Parcel PIN No.:	
Location:	Tax Map No.:	
Project Owner:	Project Engineer:	
Contact Person:	Contact Person	
Address:	Address:	
E-mail:	E-mail:	
Telephone:	Telephone:	
Project Description (Food Service)		
<input type="checkbox"/> Restaurant full service	No. of Seats:	Can Wash <input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Restaurant (i.e. Sandwich Shop)	No. of Sinks (3 Compartments, etc.):	Dishwasher <input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Coffee Shop	No. of Prep Sinks:	
<input type="checkbox"/> Other (Describe Project)		
No. of Floor Drains:		
<input type="checkbox"/> Food Cooking, Preparation, or Serving Facility		<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Food Preparation and Serving Facility (check all that apply)		<input type="checkbox"/> Yes <input type="checkbox"/> No
Project Description (Vehicle Maintenance/Dumpster Pad)		
Vehicle Maintenance Facility <input type="checkbox"/>	Car Wash <input type="checkbox"/>	Dumpster Pads <input type="checkbox"/>
Number of Bays	Number of Bays	Number of Drains
Owner Signature:		Date:
Engineer Signature:		Date:
Return this form with submittal package: <div style="float: right; text-align: right;"> Engineering Associate OWASA 400 Jones Ferry Road Carrboro, NC 27510 Phone: (919) 968-4421 Fax: (919) 968-4464 </div>		

Formula/Calculation Sheet for Grease Traps
PDI Version

Name of Facility: _____ Date: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Engineer/Architect/Plumber: _____ Phone No: _____
 License #: _____ Signature: _____

PDI Procedure for Sizing Grease Trap

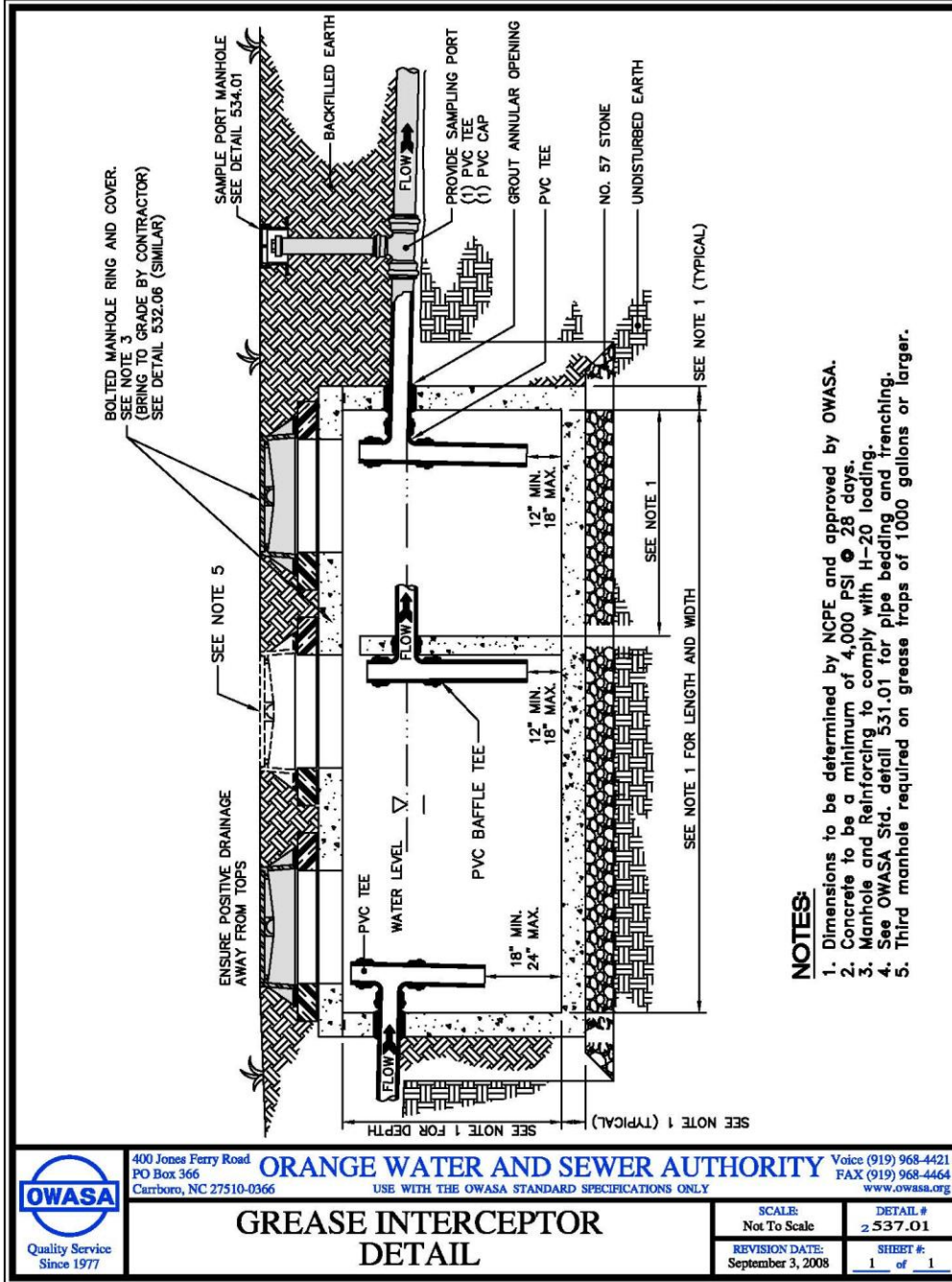
Steps	Formula	Example
1	Determine volume of fixture. Multiply length x width x depth.	A sink 48” long by 24” wide by 12” deep. Volume = 48 x 24 x 12 = 13,824 cubic inches.
2	Determine capacity in gallons. 1 gal. = 231 cubic inches.	$\frac{13,824}{231} = 59.8$ gallons
3	Determine actual drainage load. 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.	.75 X 59.8 = 44.9 gallons
4	In general, good practice dictates a 1 minute drainage period. Drainage period is the actual time required to completely drain the fixture. Flow rate = $\frac{\text{Actual Drainage Load}}{\text{Drainage Period}}$	1-minute period $\frac{44.9}{1} = 44.9$ GPM Flow Rate
5	From Table 8.2 select Interceptor which corresponds to the flow rate calculated. Note: Select next larger size when flow rate falls between two sizes. See www.PDIonline.com	For 1-minute period – 44.9 GPM requires PDI size 50.

$$\frac{\text{Volume (cubic inches)}}{231} \times 75\% \text{ of fixture capacity} = \text{GPM Rate}$$

Return this form with submittal package:	Engineering Associate OWASA 400 Jones Ferry Road Carrboro, NC 27510 Phone: (919) 968-4421 Fax: (919) 968-4464
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Details Provided by OWASA Engineers

09/03/2008 – 2:58:36 PM



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USE WITH THE OWASA STANDARD SPECIFICATIONS ONLY

**GREASE INTERCEPTOR
DETAIL**

SCALE: Not To Scale	DETAIL # 2537.01
REVISION DATE: September 3, 2008	SHEET #: 1 of 1