

GCT OIL-WATER SEPARATOR INSTALLATION

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IMPORTANT NOTICE: ENGINEERED DESIGN REQUIRED

These instructions represent general, non-prescriptive guidelines. Due to the high variability of site conditions, soil bearing capacities, and seismic loads, this document is not a standalone installation manual. A qualified professional engineer must be retained to design the foundation, support structure, and anchoring specific to the site location.

The instructions and first layout on this page (Page 1) represent the engineered, intended installation method designed specifically to maximize accessibility and ease of maintenance. Every dimension and function was optimized to allow straightforward inspection, repair, and component removal. See Page 3 for diagram of removable components.

1. Location Planning/ Design Phase: Our CFI and TPS range of separators are designed for installation away from vehicular traffic, the product features a single raised access lid that stands 15–20 mm above the finished floor level, enabling unrestricted maintenance access while providing effective protection against rainwater ingress. The separator tank shall be housed within a reinforced masonry chamber engineered to resist inward lateral soil pressures, hydrostatic groundwater pressures, and all applicable external loads. The chamber shall be capable of safely spanning periods when the tank is empty without transferring detrimental loads to the tank structure. The recommended backfill space between the wall and the tank is typically a minimum of 250 mm, which must be filled with a flowable, compactable material to provide uniform support.

2. Excavation: The excavation must be designed with a defined oversize perimeter to accommodate for the base concrete slab, reinforced retaining walls and a void for backfill between the wall and tank perimeter. This clearance between the tank and walls ensures you can safely work the backfill material down the walls and achieve complete, void-free compaction. Ensure your excavation depth allows for the full thickness of the base concrete slab, masonry wall height, etc. The final level must accommodate these layers so the top of your finished floor aligns with the bottom of the separator lid. See *DETAIL A*. If groundwater is present in the excavation, it must be continuously pumped out throughout the installation process to ensure a stable and dry working environment.

Note on excavation: Where an upstream sludge trap is specified, the excavation footprint shall be enlarged to accommodate the sludge trap and interconnecting pipework. The contractor shall verify that sufficient excavation width, length, and depth are provided to facilitate the installation, backfilling, and long-term maintenance of both the sludge trap and separator system.

3. Concrete base slab: Pour a reinforced concrete base slab at the bottom of the excavation. Ensure the slab is level.

4. Masonry wall: Construct a reinforced masonry wall typically using an engineered concrete shuttering block system with steel reinforcing (rebar).

5. Tank Placement: Carefully place the tank on top of the concrete base slab in the designated masonry chamber. Note the direction of flow (the tank's pipes are labeled inlet and outlet) and place according to setup. Ensure the tank is level.

Note on tank placement: To reduce the tank's weight for easier handling, the coalescing plate pack/s can be removed before placing the tank. However, it must be reinstalled before backfilling to keep the tank stable and prevent shifting.

6. Backfill: Before commencing the backfilling process, gradually fill the tank up with water (ballasting). Do not fill the entire tank at once.

- **Step 1:** Divide the total height of the tank into 3 or 4 equal "lifts" (levels)
- **Step 2:** Fill the inside of the tank with water, to the height of the first lift.
- **Step 3:** Backfill and compact between the tank and brick wall with suitable backfill material as per engineer's specifications, matching the exact same level as the internal liquid.
- **Step 4:** Continue backfilling and compacting to match the internal tank water level until it reaches the underside of the pipes.

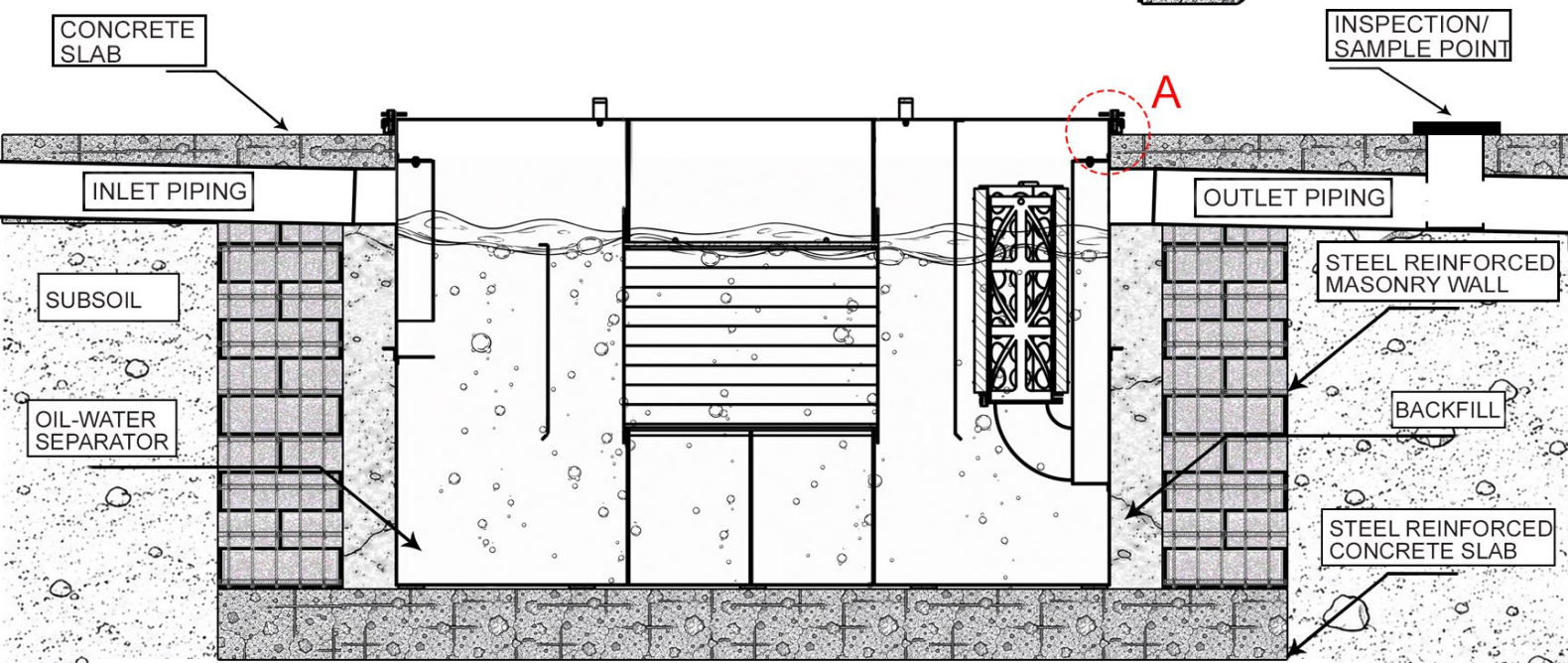
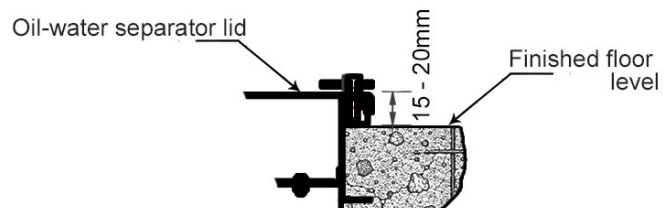
Note on backfill material: Certain backfill (like sand) can become saturated with water over time. The backfill can then migrate underneath the tank, compromising its stability and causing upward flotation forces. This displacement can result in a structural decoupling from the pipe connections and possibly damaging the tank. Low-density flowable concrete, typically known as (CLSM), a self-leveling, non-structural backfill, should be considered as an alternative to compacted soil. It can be engineered to weigh significantly less than native soils or standard concrete, and once cured, it exerts virtually no lateral pressure on the tank walls, unlike other backfill material.

7. Pipework: Install and connect the inlet and outlet pipework in accordance with the approved drawings using SABS-approved pipes and fittings. A downstream inspection/ sampling point (GCT 150SP, rodding eye, or access junction) shall be provided between the separator outlet and sewer connection for effluent compliance sampling.

8. Concrete top slab: Pour final top concrete slab. The top of your finished floor should align with the bottom of the separator lid. See *DETAIL A*.

FINAL NOTES: In areas with a high water table, additional anchoring of the tank may be necessary to prevent buoyancy uplift. However, this is a site-specific condition, we strongly recommend you have a structural engineer evaluate the situation and determine the right solution

DETAIL A:



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The instructions and second layout on this page (Page 2) represent an alternative layout to Page 1—while possible—requires additional care to ensure the manhole cover provides full access to the tank, as the original design intended for optimal serviceability. See Page 3 for diagram of removable components.

1. Location Planning/ Design Phase: Our CFI and TPS range of separators can be installed in any location underneath an aftermarket manhole cover and frame, provided there is unrestricted maintenance access and effective protection against heavy wheel loads and rainwater ingress. The separator tank shall be housed within a reinforced masonry chamber engineered to resist inward lateral soil pressures, hydrostatic groundwater pressures, and all applicable external loads. The chamber shall be capable of safely spanning periods when the tank is empty without transferring detrimental loads to the tank structure. The recommended backfill space between the wall and the tank is typically a minimum of 250 mm, which must be filled with a flowable, compactable material to provide uniform support.

2. Excavation: The excavation must be designed with a defined oversize perimeter to accommodate for the base concrete slab, reinforced retaining walls and a void for backfill between the wall and tank perimeter. This clearance between the tank and walls ensures you can safely work the backfill material down the walls and achieve complete, void-free compaction, etc. The final excavation depth shall be determined on a project-specific basis to suit the hydraulic alignment of the inlet and outlet pipework, required tank embedment depth, foundation preparation requirements, and local ground conditions. Adequate provision shall be made for bedding, backfill, and any groundwater management measures necessary to ensure a stable installation. If groundwater is present in the excavation, it must be continuously pumped out throughout the installation process to ensure a stable and dry working environment.

3. Concrete base slab: See Page 1

4. Masonry wall: See Page 1

5. Tank Placement: The factory-fitted lid that comes integrated with the separator must be entirely removed and is not to be used. The aftermarket manhole cover and frame must then function as the sole access lid providing full operational access to the tank interior for maintenance and component removal. Carefully place the tank on top of the concrete base slab in the designated masonry chamber. Note the direction of flow (the tank's pipes are labeled inlet and outlet) and place according to setup. Ensure the tank is level.

Note on tank placement: To reduce the tank's weight for easier handling, the coalescing plate pack/s can be removed before placing the tank. However, it must be reinstalled before backfilling to keep the tank stable and prevent shifting.

6. Backfill: See Page 1

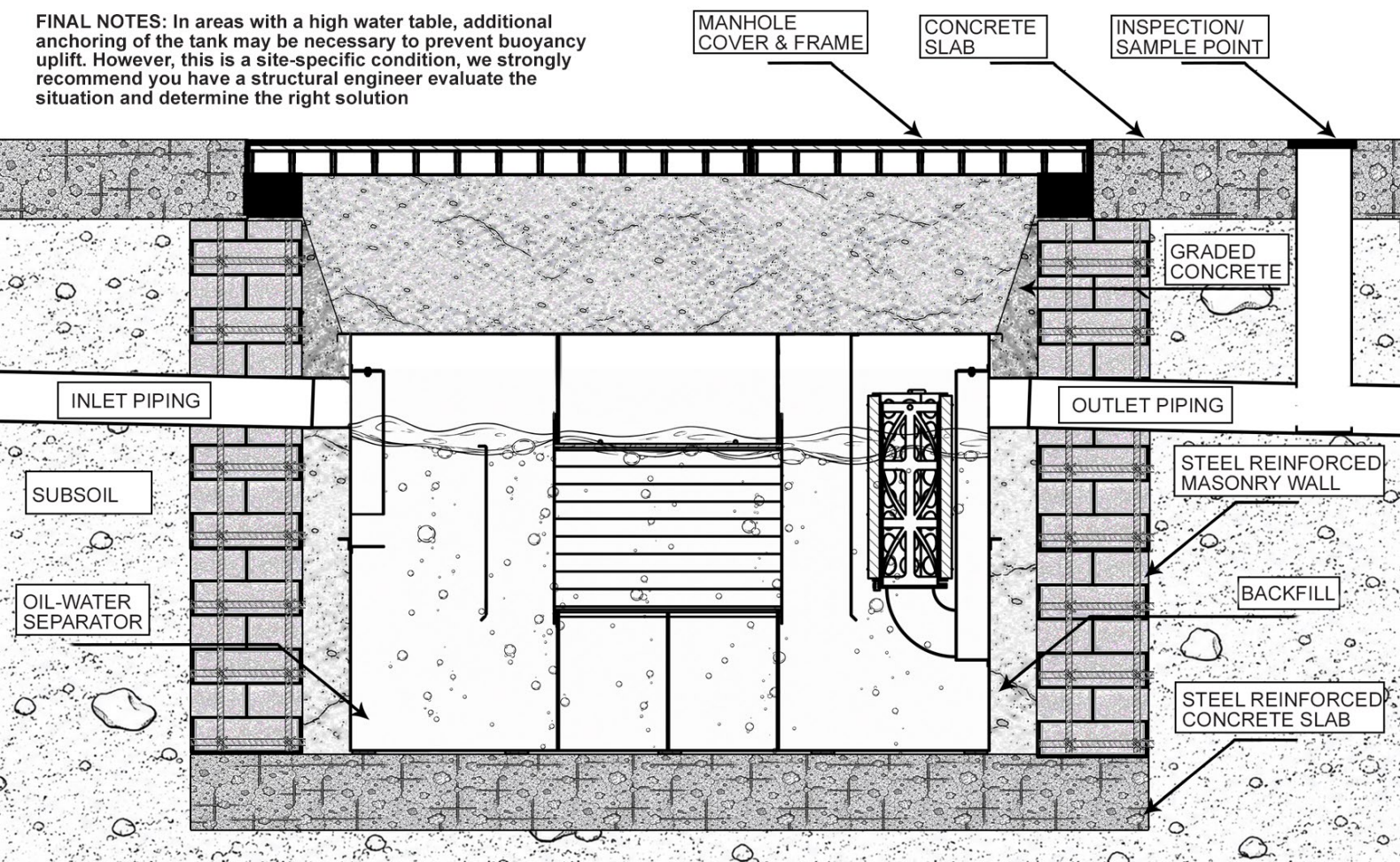
7. Pipework: See Page 1

8. Graded concrete slab: An additional concrete top slab shall be constructed above the completed backfill, treated with an approved waterproofing system, and graded to provide positive drainage towards the tank access opening. The slab shall prevent water ingress into the backfill while directing incidental surface runoff into the separator.

9. Manhole cover: Install, align, and set the manhole cover and frame over the structural chamber in accordance with the finished surface levels and access opening requirements. The aftermarket manhole cover and frame shall provide the sole access opening and shall be free of cross members or obstructions. Adequate clearance shall be provided to allow removal of all internal components for maintenance and cleaning. Where sufficient clearance is not provided, critical components may become non-removable, preventing proper servicing and complete cleaning of the separator. Refer to the specification sheets to verify component dimensions and minimum access requirements.

10. Top Concrete slab: Pour final top concrete slab to engineer's specifications. The top of your finished floor should align with the manhole cover.

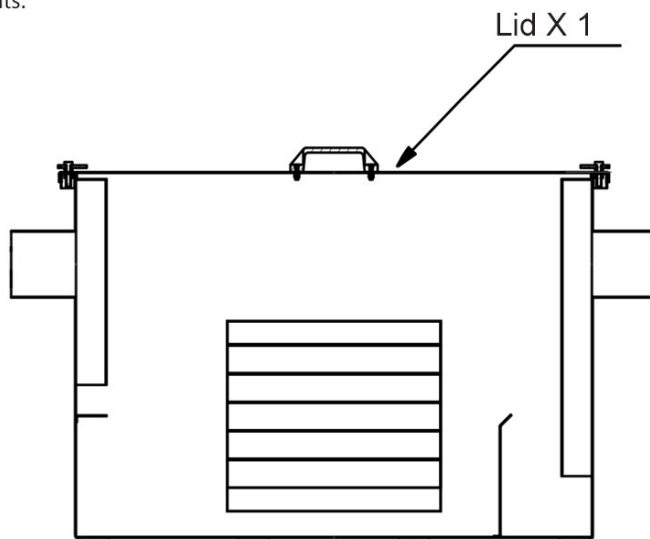
FINAL NOTES: In areas with a high water table, additional anchoring of the tank may be necessary to prevent buoyancy uplift. However, this is a site-specific condition, we strongly recommend you have a structural engineer evaluate the situation and determine the right solution



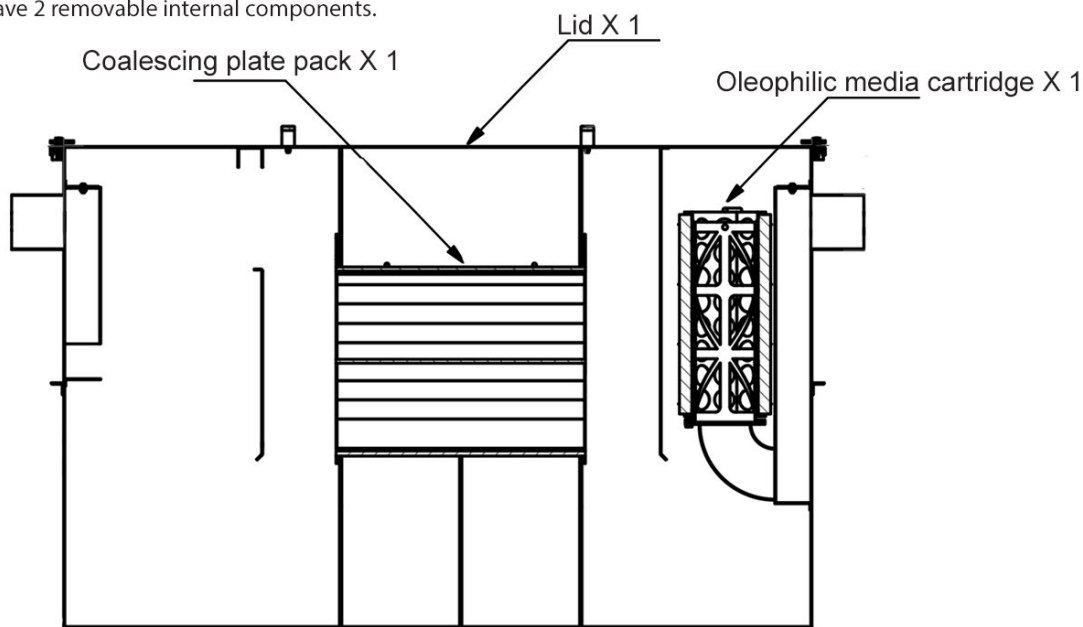
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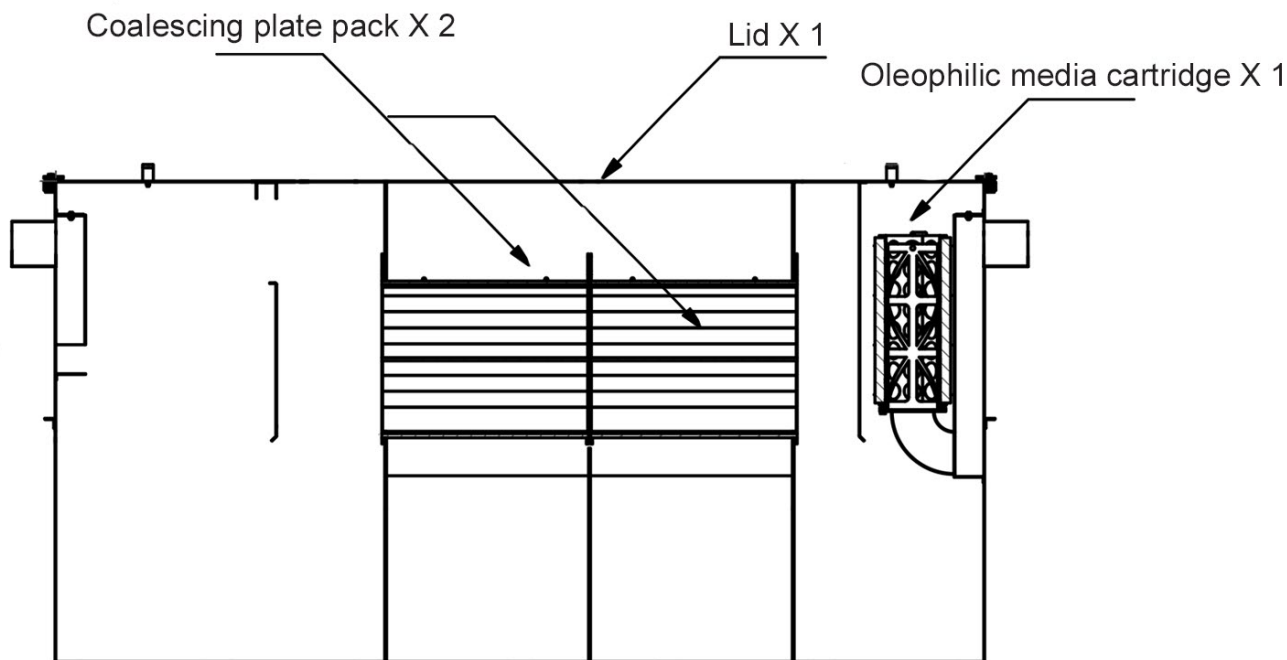
1. Diagram of removable components for oil-water separator maintenance, for model TPS250/UG, apart from the lid, this separator has no removable internal components.



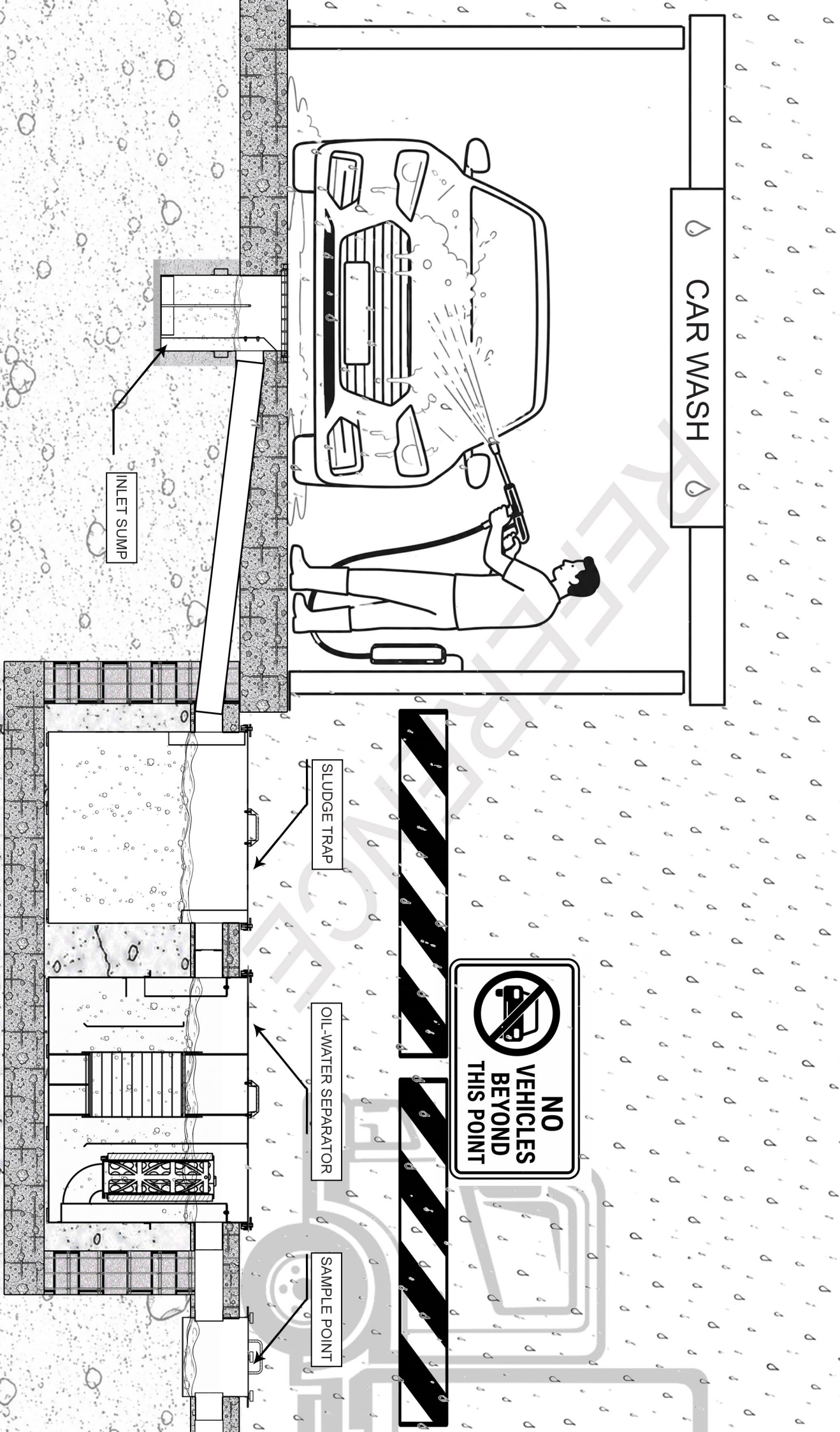
2. Diagram of removable components for oil-water separator maintenance, for models CFI500/UG, CFI1000/UG and CFI2000/UG, apart from the lid, these separators have 2 removable internal components.



2. Diagram of removable components for oil-water separator maintenance, for model CFI4000/UG, apart from the lid, this separator has 3 removable internal components.



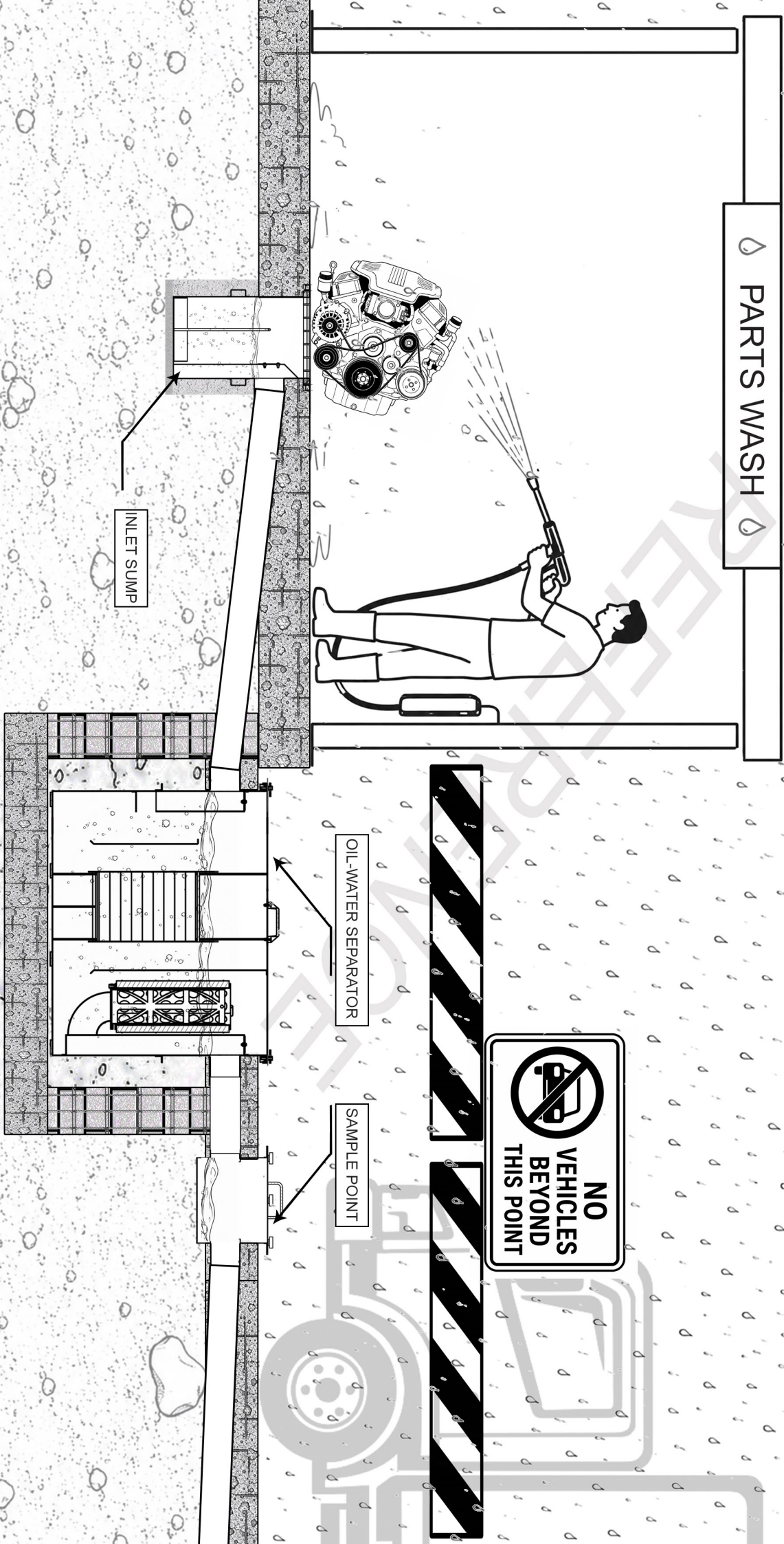
This diagram illustrates a typical installation arrangement of an oil-water separator with an upstream inlet sump and sludge trap, and downstream sample point for a car wash bay. It is provided for reference only and must not be used as a construction or installation drawing. The sizing of the oil-water separator and upstream sludge trap shall be carried out in accordance with SANS 50858-2. The final installation shall comply with the approved project-specific design drawings and all applicable regulations and standards.



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This diagram illustrates a typical installation arrangement of an oil-water separator with an upstream inlet sump and downstream sample point for a parts wash bay. It is provided for reference only and must not be used as a construction or installation drawing. The sizing of the oil-water separator and upstream sludge trap shall be carried out in accordance with SANS 50858-2. The final installation shall comply with the approved project-specific design drawings and all applicable regulations and standards.



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This diagram illustrates a typical installation arrangement of an oil-water separator with an upstream inlet sump and sludge trap, and downstream sample point for parking deck runoff treatment. It is provided for reference only and must not be used as a construction or installation drawing. The sizing of the oil-water separator and upstream sludge trap shall be carried out in accordance with SANS 50858-2. The final installation shall comply with the approved project-specific design drawings and all applicable regulations and standards.

