

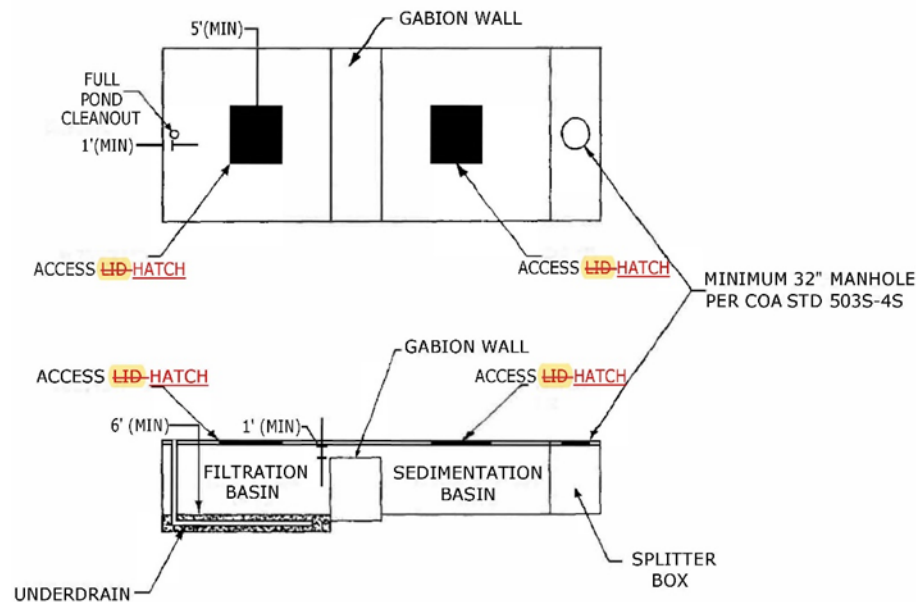
## 1.6.2 - General Design Guidelines

### 1.6.2.E Subsurface Ponds

**E. Subsurface Stormwater Control Measures (SCM).** Based upon field observations, subsurface ponds SCMs can be difficult to inspect and maintain due to accessibility and constructability restraints. This section describes the minimum design and submittal requirements for subsurface ponds SCMs.

1. The Engineer of Record shall prepare and submit a Subsurface Pond Maintenance Plan (SPMP) plan for the proposed development to be reviewed as part of the Site Development Permit. This document shall be signed and sealed by a Texas-Licensed Professional Engineer.
2. An SPMP plan must contain the following minimum components:

- **Access.** Adequate access including at least one temporary staging area for each subsurface pond must be provided for inspection and maintenance purposes. Minimum one access hatch per basin. Access hatch shall be designed and built for use in traffic bearing off-street and sidewalk applications and certified by a structural engineer. See Figure 1.6.2.E for minimum design standards for access points and sizing.



**NOTES:**

1. ACCESS LID-HATCH SHALL BE 4'X6' DOUBLE LEAF PER SPL WW-614 (H2O LOADING REQUIRED) WITH SLAM LOCK, LID SHALL BE CENTRALLY LOCATED WITHIN THE BASIN AND AT LEAST 5' FROM ONE WALL.
2. ACCESS REQUIREMENTS ALSO APPLY TO SUBSURFACE DETENTION FACILITIES, A MINIMUM OF ONE 4'X6' ACCESS LID-HATCH IS REQUIRED.
3. ACCESS HATCH SHALL BE DESIGNED AND BUILT FOR USE IN TRAFFIC BEARING OFF-STREET AND SIDEWALK APPLICATIONS.

**Figure 1.6.2.E Subsurface SCM Minimum Design Standards**

- **Inspections.** Underground water quality facilities Subsurface stormwater control measures (SCM), as defined by DCM 1.2.4.E, must be inspected at least once every six months and at least once annually by the owner, preferably during, or immediately following, a significant rainfall event to evaluate facility operation SCM operation. A significant rainfall event for water quality SCMs will be rainfall equal to or greater than the designed capture depth

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(water quality volume). Subsurface detention SCMs must be inspected after a rainfall event. During each inspection, erosion areas inside and downstream of the underground water quality facility must be identified and repaired immediately. With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) must be identified and repaired immediately. Cracks, voids and undermining should be patched/filled to prevent additional structural damage. Any structural damage or need for maintenance identified during an inspection should be addressed immediately.

• **Reporting.** At least once annually, a pond SCM drawdown report for each subsurface pond water quality SCM shall be completed in conjunction with a significant rainfall event as described in the previous section, equal to or greater than the design capture depth of the subsurface facility or a test of the pond after being filled by a secondary water source. The drawdown report shall verify the SCMs basins indicate the date and time the pond(s) were observed full and the date and time the ponds were observed to be empty verifying that the sedimentation and filtration chambers both drawdown in the time frames as required by the ECM. At least one inspection shall be done annually by a 3rd party inspector and an annual 3rd party inspection report shall be submitted to the Watershed Protection Department (WPD) Pond Inspection and Dam Safety (PIDS) section for review. WPD shall be notified at least seven days prior to the annual 3rd party inspection to allow for the opportunity for observation. The annual 3rd party inspection report shall be sealed by a Texas-licensed Professional Engineer, shall and include photographs of the sedimentation and filtration chambers SCM basins, and the drawdown verification report. For subsurface detention SCMs, an annual engineer's concurrence is required stating that the SCM is functioning as designed. The WPD PIDS section will be notified at least seven days prior to the annual 3rd party inspection to allow for the opportunity for observation.

• **Major Maintenance Requirements.**

- a. **Sediment Removal.** Remove sediment from the inlet structure and sedimentation chamber basin when sediment buildup reaches a depth of 6 inches or when the proper functioning of inlet and outlet structures is impaired. Sediment should be cleared from the inlet structure at least every year and from the sedimentation basin at least every 5 years.
- b. **Media Replacement.** Maintenance of the filter media is necessary when the drawdown time exceeds 96 hours, provided all other components of the subsurface SCM pond are functioning correctly. When this occurs, the upper layer of sand should be removed and replaced with new material meeting the original specifications. If dewatering of the system is necessary due to lack of functionality, ensure dewatering is properly conducted.
- c. **Debris and Litter Removal.** Debris and litter should be removed regularly. Particular attention should be paid to floating debris that can eventually clog the control device or riser.
- d. **Filter Underdrain.** Clean the underdrain piping network to remove any sediment buildup as needed to maintain design drawdown time.
- e. **Responsibility.** The responsibility of the inspection and maintenance of all subsurface SCMs ponds shall be the responsibility of the operator owner of the facilities.

The requirements discussed above should be considered minimum requirements for a SPMP plan. In developing a SPMP plan, during the design of the subsurface SCM, the engineer should consider the plan to be site-specific, and therefore add any additional requirements to ensure the pond subsurface SCM has adequate access and can be inspected. During the course of inspections and field observations, adjustments to the SPMP may be required. The plan may be amended with the submission of additional or amended parts of the plan and approval by the Director of WPD or Planning and Development Review Department (PDRD).

3. For commercial and multi-family developments, a restrictive covenant and site plan notes will establish the requirements for the implementation and on-going maintenance of the SPMP plan. The restrictive covenant must be in a form approved by the City Law Department.

Source: [Rule No. R161-14.26, 12-30-2014.](#)