**DESIGN CONSIDERATIONS**

**Objectives**
Concrete Washout Containment prevents the discharge of concrete waste pollutants to stormwater by providing on-site washout containment in a designated and contained area.

**Description**
Concrete Washout Containment contains concrete and fluids from the chutes of concrete mixers and hoppers of concrete pumps when they are rinsed out after delivery. Containment areas allow for easier disposal of consolidated solids and prevent pollution from run-off or infiltration to groundwater. A washout facility can consist of a pre-fabricated container or self-installed (fabricated on-site) lined containment area, which can be above- or below-grade. Containment areas require sufficient volume to completely contain all liquid and waste concrete materials.

**Applicability**
Concrete Washout Containment is required on projects where concrete, stucco, mortar, grout, and/or cement are used as construction materials.

**Selection Considerations**
The number and size of containment areas provided should be based on the expected demand for storage capacity.

- **Pre-fabricated Washout Containers:** Pre-fabricated washout containments can be any watertight unit that can contain all liquids and solid waste generated by washout operations. When available, pre-fabricated containers are delivered to the site and minimize installation efforts. They are also resistant to damage and protect against spills and leaks. Some companies will also offer complete service with their product, such as providing maintenance and regular disposal of waste materials. Such full-service options could relieve the superintendent of these responsibilities. However, when a contractor selects a company that provides such an option, they must also ensure that the company is properly disposing of materials and it would be prudent to give preference to companies that recycle collected materials.

- **Below-grade Containment:** Use of below-grade containment areas helps prevent breaches and reduces the likelihood of run-off. This option is recommended for projects expecting extensive concrete work or for airport projects. However, this option is not recommended for areas with high water tables or shallow groundwater; such as near natural drainages, springs, or wetlands.

- **Above-grade Containment:** Above-grade containment areas must be sized and installed correctly, and diligently maintained in order to be effective. However, particularly if a pre-fabricated container is unavailable, this option is better suited in areas with potentially high water tables to prevent leaching of wash water into groundwater, or in areas where excavation is not practical.

**Design**

**Location:** Concrete Washout Containment should be placed in a location that provides convenient access for concrete trucks, preferably near the area where the concrete is being poured. Place Concrete Washout Containment a minimum of 50 feet from storm drains, open ditches, or waterbodies, or provide secondary containment for the Concrete Washout Containment.

**Number of Containments:** Larger sites with extensive concrete work should have Concrete Washout Containment at multiple locations for ease of use. Multiple Washout Containments are also required if a single containment unit is not adequate for the volume of waste material generated before the containment structure is cleaned.

**Capacity:** Concrete Washout Containment should provide sufficient capacity to handle the expected volume of solids, wash water, and rainfall to prevent overflow and allow 12 inches of freeboard. To estimate capacity, assume 7 gallons of wash water and solids are generated from washing one truck chute, and 50 gallons are generated in washing out the hopper of a concrete ready-mix or pump truck. Estimate the number of trucks based on the total volume of concrete in the project, the hopper capacity of each concrete pump truck, the expected number of loads, and the planned maintenance interval.
Containment Area: For larger sites, it is recommended that self-installed containment (both above- and below-grade) areas be at least 10 feet wide with sufficient length and depth to provide the required capacity. Above-grade self-installed containment areas shall be limited to a size and capacity for which the selected outside barrier is designed to remain structurally sound when filled with waste materials.

Cover: A temporary cover should be provided to prevent rain or other precipitation from filling the containment area and causing wash water overflow. The cover should be a secure, non-collapsing, non-water collecting cover.

Signage: Each on-site facility must have highly visible signage to indicate washout containment locations. Signs should be at least 48 by 24 inches and have 6-inch high contrasting letters, placed at a height of at least 3 feet above ground level and within 30 feet of the facility.

Relationship to Other Erosion and Sediment Control Measures

Operator Education: Use of Concrete Washout Containment as a best management practice (BMP) is only successful if concrete truck operators utilize them. Operators need to be made aware of the presence of these containments. All concrete truck operators, including those of subcontractors, should be trained on the importance of managing concrete waste, washout procedures, and washout locations.

Common Failures or Misuses

- Overflow and discharge of waste when the containment area is not covered prior to anticipated rainfall and/or when accumulated liquid wastes have not been removed.

- Leaking resulting from torn or damaged liners going unnoticed or not being replaced, with consequent discharge of washout liquid or slurry to waterways, storm drains, or directly onto the ground.

- Lack of communication to truck drivers of the necessity of using the containment area for washout.

- Compromised structural integrity due to miscalculated capacity and installation, particularly for self-installed, above-grade containment.

- Insufficient quantity and/or size to contain all liquid and concrete waste generated by washout operations.

SPECIFICATIONS

Standard Specification

- 665 – Concrete Washout

Drawing

- BMP – 06.00 Concrete Washout, Sheets 1 & 2
CONCRETE WASHOUT
(FABRICATED ON-SITE)

BMP-06.00

Sheet 2 of 2

SECTION A-A

SECTION B-B

SECTION B-B

WITH PLASTIC RAIN COVER

ABOVE-GRADE CONCRETE WASHOUT
FABRICATED ON-SITE
NOT TO SCALE

BELOW-GRADE CONCRETE WASHOUT
FABRICATED ON-SITE
NOT TO SCALE

MINIMUM 2" THICK WOOD FRAME OR STRAW BALE
(WOOD FRAME SHOWN)

MINIMUM OF 10 MIL PLASTIC LINING

MINIMUM OF 10 MIL PLASTIC LINING

ANCHOR

SOLUTION

WOOD FRAME OR STRAW BALE
SECRETLY FASTENED AROUND ENTIRE INVERTED WITH TIM
STAPLES (WOOD FRAME SHOWN)

PLASTIC LINING

ANCHOR

RAIN COVER

DURABLE, RIDE-ON MATERIAL

12" HIGH CONTRACT LETTERS

POST

ENGINEERED POSTS 2/O
USE PRESTRESSING SUPPORT

PLAN

WASHOUT SIGN
NOT TO SCALE

PLAN

EXPLANATION ON 3 SIDES

VANES

AXIS

ANCHOR

ANCHOR

ANCHOR

ANCHOR

ANCHOR

ANCHOR

ANCHOR