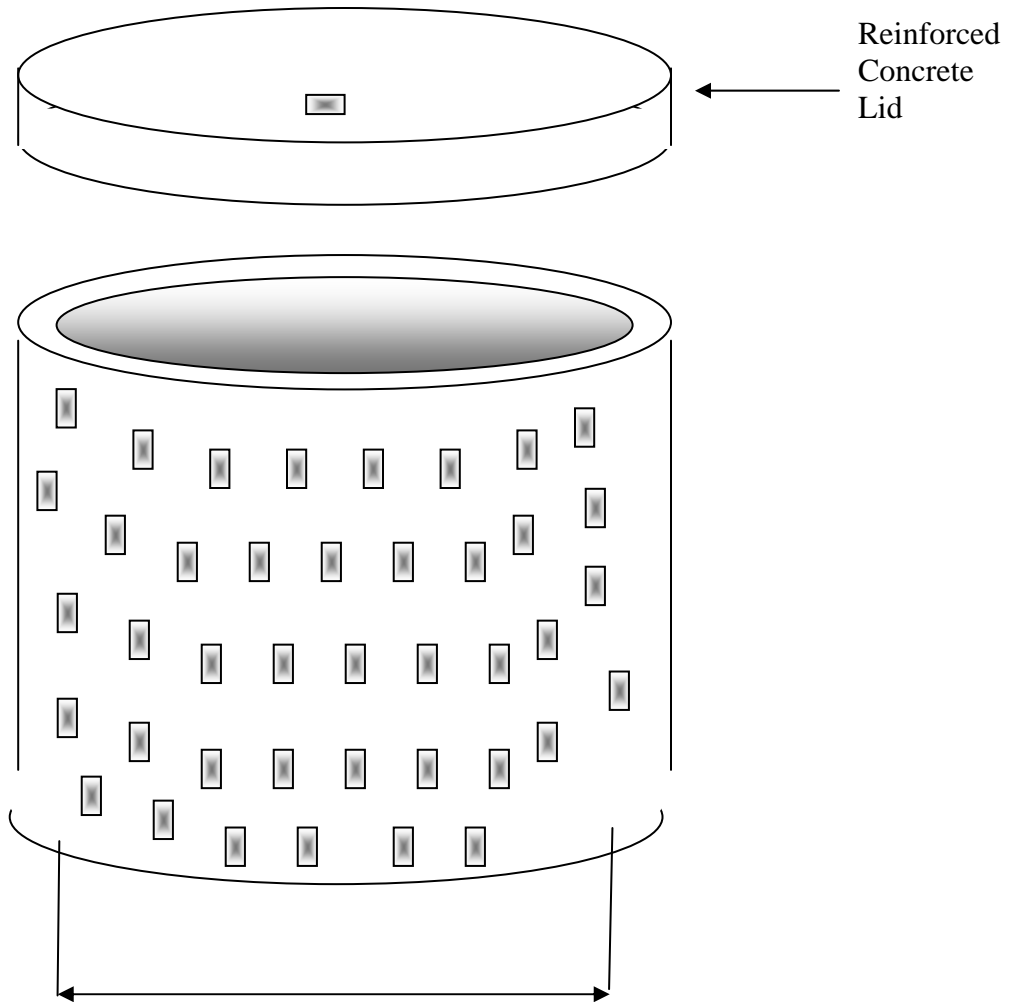


# Drywell



**Exhibit 2-31 Typical Drywell**

<u>Stormwater Management Goals Achieved</u>	<u>Acceptable Sizing Methodologies</u>
Pollution Reduction.....	NA <sup>1</sup>
√ Flow Control.....	PRES
√ Destination.....	PRES
<b>This facility is classified as an Underground Injection Control structure (UIC).</b>	
SIM=Simplified Approach, PRES= Presumptive Approach, PERF= Performance Approach	
<b>Notes: 1)</b> Drywells with a 24" aggregate interlayer below the drywell to prevent soil migration may be used to meet pollution reduction requirements for roof-only runoff.	

# Drywell

**Description:** Drywells can be used as a stormwater destination by collecting and recharging stormwater runoff into the ground. The use of drywells is highly dependent on soil type and height of the groundwater table.

**Note:** DEQ identifies drywells as "Class V Injection Wells" under the federal Underground Injection Control (UIC) Program. These facilities must be classified as exempt, authorized by rule, or authorized by permit by DEQ.

More information about the UIC Program can be found in **Section 1.4.4** or at DEQ's website at: [Http://www.deq.state.or.us/wq/groundwa/uichome.htm](http://www.deq.state.or.us/wq/groundwa/uichome.htm)

For technical questions call the DEQ UIC Program at 503-229-5945. For copies of applications or forms call 1-800-452-4011.

Drywells are recognized as a stormwater destination and not intended to be used to meet pollution reduction requirements. **Unless the drywell is used exclusively for roof runoff, pollution reduction facilities must be used to receive runoff before it enters the drywell.**

Drywell systems are prohibited where permanent or seasonally shallow groundwater will exist within 10 feet of the bottom of the drywell.

## **Drywell Design and Sizing Method**

Soil conditions are critical to the success of drywells. Because of this, the use of drywells must be pre-approved by the City. Supporting geotechnical evidence and a documented drywell test may be required to demonstrate that drywells will work in the project area. Drywells shall not be located in areas with a constant or seasonally high groundwater table.

**Note:** Developers should refer to OAR 340, Division 44, "Construction and Use of Waste Disposal Wells or Other Underground Injection Activities" for additional design and regulatory requirements.

### **Drywell Sizing:**

- Hydraulic calculations shall be performed using the Rational Method. The required storage capacity of the facility shall be determined by subtracting the volume of water that can exfiltrate out of the facility with the required drawdown period from the volume runoff from the contributing basin for each facility design.
- Drywells shall be designed for the Flood Control Design Storm, with a safety factor of 2.
- The drawdown time for drywell design when full not exceed 12 hours.
- The time of concentration for a Drywell design shall be 5 minutes.

# Drywell

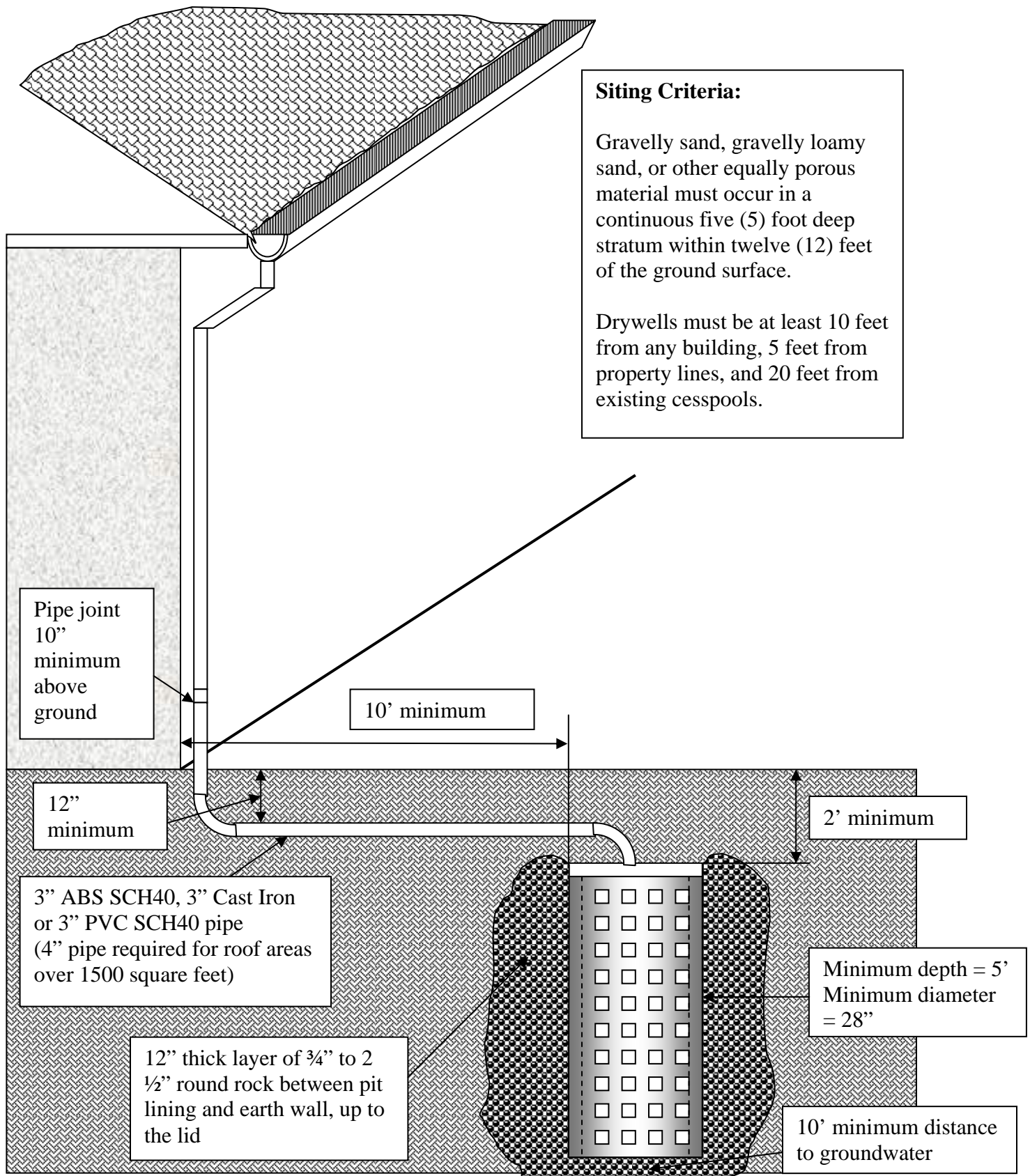
## General Requirements:

Soils requirements: (NRCS classification)	A or B; C soils may be used if drawdown times are met
Maximum ground slopes	20 percent
Soil test requirement	ASTM D 3385-88 or City approval

- 1) If designed as the only stormwater destination, the drywell shall infiltrate the entire flood control design storm without overflow.
- 2) Drywells shall not be accepted in soils with a tested infiltration rate of less than 0.5 inches per hour.
- 3) There shall be no less than 4 feet of undisturbed depth of infiltration medium between the bottom of the facility and any impervious layer (hardpan, solid rock, etc.) or seasonal high groundwater levels.
- 4) Drawdown time when full shall not exceed 10 hours.
- 5) Drywells shall meet the following setback requirements for downstream slopes: minimum of 100 feet from slopes of 20%; add 5 feet of setback for each additional percent of slope up to 30%; drywells shall not be used within 200 feet of where slopes exceed 30%.
- 6) Drywells should be located down slope of structures, and are required to be setback at least 10 feet from structures, 5 feet from property lines, and 5 feet from public utility lines.

# Drywell

Exhibit 2-32: Reinforced Concrete Drywell Typical Configuration



# Drywell

## Checklist of minimal information to be shown on the permit drawings:

- 1) Facility location with setbacks from property lines and structures.
- 2) Depth and diameter of drywell.
- 3) All stormwater piping associated with the facility, including pipe materials, sizes, slopes, and invert elevations at every bend or connection.

**Inspection requirements and schedule:** The following table shall be used to determine which stormwater facility components require City inspection, and when the inspection shall be requested. Please note that, while not all facility components may require an inspection call, inspectors will inspect for all required components in the field.

Facility Component	Inspection Requirement
Drywell excavation	
Piping	Call for inspection
Drywell installation & backfill	Cal for inspection

**Operations and Maintenance requirements:** See Chapter 3.0.