

Drainage Plan Standards

Instructions

Disclaimer: The following information is not an exhaustive list and may be modified by staff at any time. This document is intended only as a guide. Please consult with City of Redmond staff if further instruction and/or clarification is necessary.

- All plans must be submitted in a searchable PDF format (non-scanned).
- The plans shall be drawn to an engineering scale of 1" = 20'.
- The Drainage Plan shall be prepared by a professional licensed in the State of Washington.
- Contact information including name, address, phone number and e-mail address of the applicant, owner, developer, building, surveyor, engineer(s), architect, landscape architect, arborist and any other professionals involved in the creation of the plans shall be shown on each applicable plan sheet with contact information for all parties provided on the cover sheet.

Standard Information

- Easements – public and/or private easements shown on the plans with dimensions labeled.
- Offsite areas draining on site-generally do not need to be controlled but, must be safely conveyed.
- Design pipe slope - 25% minimum and 20% maximum. Minimum pipe size 12" minimum for public storm drain system and 6" minimum for private systems.
- Pipe data – pipe length, slope labeled.
- Show water and sewer facilities (screened back).
- Horizontal clearance – 5 feet from all other utilities and structures and 8 feet from trees (street trees may be closer than 8' with root barrier).
- Rockeries/retaining walls – Shall not cross or be near storm drain pipes, except where no alternatives exist. Any crossing of a wall shall be perpendicular to the wall and special construction techniques including steel casings may be required. No rockeries allowed over roof or footing drains.
- Structure Spacing – 350' preferred (400' may be allowed).
- Public easements have 20-foot min width. No obstructions allowed in easements.
- Footing/foundation drains – shall be connected to the storm drain system (shown as stubbed to lots only for plats)
- Roof drains – shall be connected to the storm drain system (shown as stubbed to lots for plats)
- Profiles
 - ✓ Horizontal scale shall be at 1" = 20'
 - ✓ Vertical scale shall be at 1" = 5'
 - ✓ Other utilities – labeled and designated size and type
 - ✓ Profile grades – show and label existing and proposed grades
 - ✓ Pipe profile information – show invert and top of pipe, pipe size, and design slope
 - ✓ Drop structures only allowed per approval of Stormwater Engineer
 - ✓ Utility crossings – all crossings must be shown, label utility type, line size, invert of utility and storm lines and clearance between pipes (1-foot minimum vertical clearance and perpendicular crossings).
- Underground Detention
 - ✓ Detention volume – show volume required and volume provided. (Calculations must match proposed facility).
 - ✓ Inverts – show for all pipes entering and leaving control structure and vault
 - ✓ Maintenance vehicle access- required to both ends of detention pipes and two accesses to vaults (one near control structure)
- Infiltration
 - ✓ Soil permeability tests or gradation per the 2014 SWMMWW. At least two tests must be conducted or one test for every 5,000 square feet of infiltration system bottom area.
 - ✓ Soil test must be taken at the proposed bottom of infiltrations system
 - ✓ Excavation or boring is required in the trench area to a minimum depth of 4-feet below the bottom of

	<p>the trench. Infiltration is not feasible if there is evidence of groundwater or bedrock/heard pan.</p> <ul style="list-style-type: none"> ✓ Infiltration facilities design based on infiltration rates provided in Geotechnical Report ✓ Setbacks <ul style="list-style-type: none"> ○ Minimum 500-feet from drinking water wells and springs, septic tanks and drain fields ○ Minimum 10-feet from NGPE and property line. ○ Minimum 10-feet from rockeries and retaining walls. ✓ Infiltration systems may not be located in an area previously used as sediment trap
<input type="checkbox"/>	<p>Biofiltration Treatment Facilities (see 2014 SWMMWW, Volume V, Chapter 9)</p> <ul style="list-style-type: none"> ✓ Required length of 200-feet minimum (may be reduced to 150-feet for redevelopment projects only) ✓ Vehicle access is required to provide maintenance. ✓ Provisions are required for the 100-year overflow path. ✓ Setbacks must be provided from buildings or trees within 8 feet of the biofiltration swale banks
<input type="checkbox"/>	<p>Wetpond and Detention Facilities</p> <ul style="list-style-type: none"> ✓ Must be setback a minimum of 10 feet away from structures and right-of-way as well as 50 feet away from steep slopes (15% or greater). ✓ The pond interior slope must be a maximum of 3H:1V (preferred), 2H:1V below surface is acceptable. ✓ The permanent pool must be designed to a minimum of the 6-month 24-hour release. ✓ Multi-celled with a minimum of two cells (preferred). ✓ 5-foot wide safety bench set at 1-foot depth around the pond perimeter. ✓ The length-to-width ratio is a minimum of 3.0, (preferred). ✓ Emergency overflow for an open pond shall be separated from pond outlet.