

### SECTION I: DRAINAGE & WASTEWATER CONTROL PLAN REQUIREMENTS

SHOW THE FOLLOWING ELEMENTS IN THE PLAN VIEW OF THIS DRAINAGE AND WASTEWATER CONTROL PLAN.

**GENERAL PLAN REQUIREMENTS:**

- ADDRESS AND PERMIT NUMBER OF PROJECT.
- NORTH ARROW.
- IDENTIFICATION OF THE DRAWING'S SCALE.
- PROPERTY LINES AND DIMENSIONS.
- IDENTIFICATION OF ADJACENT STREETS (BY NAME), ALLEYS OR OTHER ADJACENT PUBLIC PROPERTY.
- CURBS AND SIDEWALKS AND STREET TREES: TYPE, LOCATION, DIMENSIONS.
- STREET AND ALLEY IMPROVEMENT TYPE (ASPHALT, CONCRETE, GRAVEL, ETC.).
- CREEKS, STREAMS, SHORELINES OR ANY ECA AREAS, PER TIP 103B, IF THEY EXIST ON THE SITE.
- LOCATION AND DIMENSIONS OF ALL DRIVEWAYS, PARKING AREAS, AND OTHER PAVED AREAS (EXISTING AND PROPOSED).
- LOCATION, SIZE AND SHAPE OF ANY STRUCTURES PRESENTLY ON THE SITE AND OF THOSE PROPOSED FOR CONSTRUCTION, INCLUDING BUILDINGS, RETAINING WALLS, PATIOS, DECKS, PORCHES, AND ROCKERIES (EXISTING AND PROPOSED).
- LOCATION, SIZE AND MATERIAL OF PAVING AND OTHER HARDSCAPE SURFACES INCLUDING DRIVEWAYS, WALKWAYS, PATIOS, PARKING AREAS, GRAVEL SURFACES, ETC. (EXISTING AND PROPOSED).
- SHOW SPECIFIC LOCATION, SIZE AND SPECIES OF ALL TREES AT LEAST 6 INCHES IN DIAMETER MEASURED 4 FEET ABOVE THE GROUND.
- AREAS NOT TO BE DISTURBED BY CONSTRUCTION MUST BE INDICATED.
- EXISTING AND PROPOSED GROUND ELEVATIONS AND CONTOUR LINES WITH LABELED CONTOUR INTERVALS WHERE EARTH GRADING IS PROPOSED.
- IDENTIFY TOP AND BOTTOM OF SLOPES AND SHOW DIMENSIONS FROM SLOPE TOP/BOTTOM TO THE BUILDING(S).
- IDENTIFY DRAINAGE DITCHES, NATURAL WATERCOURSES, AND CULVERTS.
- EXISTING AND PROPOSED SEWER MAINS (SANITARY ONLY [PSS] AND/OR COMBINED SEWERS [PS]).
- EXISTING AND PROPOSED STORM DRAINS [PSD] AND CATCH BASINS.
- EXISTING AND PROPOSED WATER MAINS, FIRE HYDRANTS AND WATER METERS.
- OTHER EXISTING AND PROPOSED UTILITIES: POWER POLES, STREET LIGHTS, SIGNAL AND TRANSIT POLES, BUS ZONES, STREET SIGNS, ELECTRICAL DUCTS AND VAULTS, ELECTRICAL CONDUITS, MANHOLES, DITCHES, CULVERTS, ETC.
- EXISTING AND PROPOSED SIDE SEWERS. SEE BELOW FOR FURTHER INSTRUCTIONS.
- ALL PROPOSED DRAINAGE FEATURES INCLUDING ON-SITE STORMWATER MANAGEMENT FACILITIES, FLOW CONTROL FACILITIES, WATER QUALITY FACILITIES AND COLLECTION AND CONVEYANCE FACILITIES. SEE BELOW FOR FURTHER INSTRUCTIONS.

**ON-SITE STORMWATER MANAGEMENT PLAN REQUIREMENTS:**

- IDENTIFY EACH HARD SURFACE (NUMBERED TO MATCH THE ON-SITE STORMWATER MANAGEMENT CALCULATOR).
- IDENTIFY LOCATION AND SQUARE FOOTAGE OF CONTRIBUTING AREAS TO EACH ON-SITE STORMWATER MANAGEMENT FACILITY/BMP.
- IDENTIFY AND PROVIDE DIMENSIONS FOR ALL ON-SITE STORMWATER MANAGEMENT FACILITIES/BMPs:
- INFILTRATION TRENCHES AND DRYWELLS: LOCATIONS, DEPTH, WIDTH, SLOTTED UNDERDRAIN/OVERFLOW PIPE LOCATION AND SIZE, AND CONTRIBUTING AREA SQUARE FOOTAGE.
- BIORETENTION CELLS, PLANTERS, AND BIORETENTION RAIN GARDENS: LOCATIONS OF TOP AND BOTTOM OF CELL, SQUARE FOOTAGE OF BOTTOM AREA, PONDING DEPTH, FREEBOARD DEPTH, DEPTH OF BIORETENTION SOIL, AND CONTRIBUTING AREA SQUARE FOOTAGE.
- PERMEABLE PAVEMENT: LOCATION, TOTAL SQUARE FOOTAGE, TYPE OF PAVEMENT, SLOPE, DEPTH OF AGGREGATE RESERVOIR, SLOTTED UNDERDRAIN/OVERFLOW PIPE LOCATION AND SIZE, AND CONTRIBUTING AREA SQUARE FOOTAGE IF USED AS A PERMEABLE PAVEMENT FACILITY.
- DISPERSION: FLOW PATH DIMENSIONS, SETBACK DIMENSIONS, SPLASH BLOCKS/ENERGY DISSIPATOR SIZE AND LOCATION, TRENCH DIMENSIONS, AND CONTRIBUTING AREA SQUARE FOOTAGE.
- VEGETATED ROOFS: LOCATIONS AND SQUARE FOOTAGE.
- CISTERNS: LOCATIONS, CONTRIBUTING ROOF AREAS, DISCHARGE LOCATIONS AND USE.
- TREES: SPECIES AND LOCATIONS OF NEWLY PLANTED AND EXISTING TREES USED FOR ON-SITE STORMWATER MANAGEMENT.
- PERFORATED STUB-OUT CONNECTIONS: PRE-SETTLING (CATCH BASINS) TYPE AND LOCATIONS, TRENCH DIMENSIONS, AND CONTRIBUTING AREA SQUARE FOOTAGE.
- SETBACK DIMENSIONS: DIMENSIONS FROM ON-SITE STORMWATER MANAGEMENT FACILITIES/BMPs THAT REQUIRE HORIZONTAL SETBACKS TO BUILDINGS, PROPERTY LINES, SLOPES, ETC. (E.G. INFILTRATING FACILITIES, DISPERSION FACILITIES, ETC.).

**GENERAL DRAINAGE FEATURES PLAN REQUIREMENTS:**

- DRAIN LINES FROM COLLECTION POINTS TO POINT OF CONNECTION TO PUBLIC STORM FACILITIES OR OUTFALL.
- MAINTENANCE HOLES, CLEANOUTS, DOWNSPOUTS, CATCH BASINS, AND AREA DRAINS.
- DRAINAGE PUMP SYSTEMS INCLUDING PUMP AND SUMP/WET WELL LOCATION, FORCE MAIN/PUMP LINES, AND DISCHARGE LOCATION.
- FOOTING DRAINS AND CONNECTIONS TO ON-SITE CATCH BASINS.
- FLOW CONTROL AND FACILITY LOCATIONS, DIMENSIONS AND DETAILS.
- WATER QUALITY FACILITY LOCATIONS, DIMENSIONS AND DETAILS.

**SANITARY SIDE SEWER FEATURES PLAN REQUIREMENTS:**

- NEW SIDE SEWER FROM THE STRUCTURE TO ITS POINT OF CONNECTION TO THE EXISTING SIDE SEWER OR THE PUBLIC MAIN SEWER IN THE STREET, WHICHEVER IS APPLICABLE.
- ALL PUMP SYSTEMS INCLUDING PUMP AND SUMP/WET WELL LOCATION, FORCE MAIN/PUMP LINES, AND DISCHARGE LOCATION.

### SECTION III: ON-SITE STORMWATER MANAGEMENT STANDARD DETAILS

#### PERFORATED STUB-OUT CONNECTION

**TRENCH SECTION A-A**

**NOTES:**

- TRENCH AND PERFORATED PIPE SHALL BE 10' LONG MIN AND SHALL BE 10' LONG FOR EVERY 3,000 SF OF ROOF AREA.
- SEE THE SEATTLE STORMWATER MANUAL VOLUME 3, SECTION 5.4.7, FOR ADDITIONAL REQUIREMENTS.
- THIS DETAIL IS NOT INTENDED FOR DISPERSION TRENCHES.

**SYMBOL:** (PS)

#### PERMEABLE PAVEMENT SURFACE

**NOTES:**

- PERMEABLE PAVEMENT SURFACE AREA DIMENSIONS AND PAVEMENT SLOPE MUST BE SHOWN ON DRAINAGE CONTROL PLAN.
- AGGREGATE SUBBASE SHALL BE CLEAN, CRUSHED GRAVEL OR CRUSHED ROCK - TYPE 22 OR 24 FOR WALKWAYS AND TYPE 13 FOR VEHICULAR APPLICATIONS.
- THE SUBGRADE SLOPE MUST BE LESS THAN 6% SLOPE TO BE USED FOR ON-SITE STORMWATER MANAGEMENT.
- PERMEABLE PAVEMENT SURFACES DO NOT REQUIRE THE SETBACKS FOR INFILTRATING FACILITIES.
- SEE THE SEATTLE STORMWATER MANUAL VOLUME 3, SECTION 5.6.2, FOR ADDITIONAL REQUIREMENTS.

**SYMBOL:** (PP)

#### INFILTRATING BIORETENTION CELL - SLOPED SIDES

**NOTES:**

- BOTTOM AND TOP CELL DIMENSIONS MUST BE SHOWN ON DRAINAGE CONTROL PLAN.
- PONDING DEPTH AND FREEBOARD SHALL BE NOTED ON THE DRAINAGE CONTROL PLAN.
- FLOWS MUST ENTER THE CELL ABOVE THE MULCH LAYER. PROVIDE ENERGY DISSIPATION SUCH AS A SPLASH BLOCK OR ROCK PAD.
- MINIMUM FREEBOARD SHALL BE 2 INCHES FOR CONTRIBUTING DRAINAGE AREAS LESS THAN 3,000 SF, 4 INCHES FOR AREAS 3,000 SF TO 5,000 SF AND 6 INCHES FOR AREAS GREATER THAN 5,000 SF. FREEBOARD SHALL BE NOTED ON THE DRAINAGE CONTROL PLAN.
- SEE THE SEATTLE STORMWATER MANUAL VOL. 3, SECTION 5.4.4, FOR ADDITIONAL REQUIREMENTS.

**SYMBOL:** (BC)

#### BIORETENTION PLANTER (NON-INFILTRATING)

**NOTES:**

- BIORETENTION PLANTER AREA DIMENSIONS MUST BE SHOWN ON DRAINAGE CONTROL PLAN.
- AGGREGATE RESERVOIR SHALL BE TYPE 26 MINERAL AGGREGATE (WASHED SANDY GRAVEL / FILTER MATERIAL).
- PLANTER SHALL BE A MINIMUM WIDTH OF 2 FEET.
- SLOTTED DRAIN PIPE SHALL RUN THE LENGTH OF THE PLANTER.
- MINIMUM FREEBOARD SHALL BE 2 INCHES FOR CONTRIBUTING DRAINAGE AREAS LESS THAN 3,000 SF, 4 INCHES FOR AREAS 3,000 SF TO 5,000 SF AND 6 INCHES FOR AREAS GREATER THAN 5,000 SF. FREEBOARD SHALL BE NOTED ON THE DRAINAGE CONTROL PLAN.
- SEE THE SEATTLE STORMWATER MANUAL VOL. 3, SECTION 5.6.2, FOR ADDITIONAL REQUIREMENTS.

**SYMBOL:** (BP)

### SECTION II: SITE AND DRAINAGE CONTROL SUMMARY SHEET

COMPLETE THE ELECTRONIC ON-SITE STORMWATER MANAGEMENT CALCULATOR AND INSERT THE SITE AND DRAINAGE CONTROL SUMMARY SHEET BELOW. THE ELECTRONIC DOCUMENT IS AVAILABLE ON THE DPD STORMWATER CODE WEBSITE. <http://www.seattle.gov/dpd/codesrules/codes/stormwater/default.htm>

#### On-site Stormwater Management - List Approach Calculator

Version 11-20-2015

To use the On-Site List Calculator you must select "Enable Content" when the Security Warning appears.

**Project Information**

Site Address: \_\_\_\_\_ DPD Project Number: \_\_\_\_\_

Primary Contact: \_\_\_\_\_ SDOT Project Number: \_\_\_\_\_

Project Type: \_\_\_\_\_ Primary Contact E-mail or Phone: \_\_\_\_\_

**Site Area**

Total Site Area: \_\_\_\_\_ sf

Total New plus Replaced Hard Surface Area: \_\_\_\_\_ sf

Existing Hard Surface Area: \_\_\_\_\_ sf

Total New and/or Replaced Lawn and Landscaping: \_\_\_\_\_ sf

Undisturbed and protected site area: \_\_\_\_\_ sf

Was the project lot created after Jan 1, 2016?  Yes  No

Project Engineer: \_\_\_\_\_

On-site Performance Standard will be used (professional engineer required):  Yes  No

**Site Information**

Note: If required for your project, reference the Preliminary Assessment Report (PAR) to complete this section. If the total areas proposed are different from those provided in the PAR, requirements may change.

Approved Point of Stormwater Discharge: \_\_\_\_\_

Drainage Basin: \_\_\_\_\_

Is the downstream drainage system considered capacity constrained by DU?  Yes  No

Approved Point of Wastewater Discharge: \_\_\_\_\_

Approved Point of Sub-Drainage Discharge: \_\_\_\_\_

Flow Control is required:  Yes  No

Flow Control Standard: \_\_\_\_\_

Water Treatment for pollution-generating surfaces is required:  Yes  No

Select required treatment:  Oil Control  Phosphorus  Enhanced  Basic

Total Pollution Generating Hard Surface Area: \_\_\_\_\_ sf

Total Pollution Generating Pervious Surface Area: \_\_\_\_\_ sf

Source Control is required:  Yes  No

Environmentally Critical Areas:  Steep Slope  Potential  Riparian Corridor  Wetland  Liquefaction  Flood Prone

Landfill  Down Lands  Fish / Wildlife  Peat / Groundwater Management  Shoreline Habitat

Temporary dewatering required:  Yes  No

Permanent dewatering required:  Yes  No

A licensed professional geologist's report  is  is not used anywhere within the project site due to reasonable concerns of erosion, slope failure, or flooding.

**Infiltration Information**

Is infiltration investigation required?  Yes  No

Is infiltration on the site feasible?  Yes  No

Site Measured Infiltration Rate: \_\_\_\_\_ x Infiltration Rate Correction Factor: \_\_\_\_\_ = 0 Site Design Inf Rate

**On-site Stormwater Management**

Number of roof areas: 0

Number of other surface areas: 0

Surface	Surfaces Description	On-Site BMP	Contrib. Area (sf)	Vol Managed per Year (cf)	Facility Size (sf)	Facility Configuration
0						
Total New/Replaced Roof Area			0	Total Roof Area Managed		0
Total New/Replaced Other Surface Area			0	Total Other Surface Managed		0
Total Area Managed			0	Total Volume Managed On Site		0 cf
Estimated compost required for soil amendment			0 cy	Volume of compost required for soil amendment will be verified by the DPD Site Inspector for DPD permitted projects.		

#### SINGLE-FAMILY DETENTION CISTERN

**NOTES:**

- OVERFLOW PIPE CAN BE INTERIOR OR EXTERIOR TO CISTERN.
- SEE THE SEATTLE STORMWATER MANUAL VOLUME 3, SECTION 5.5.2 FOR ADDITIONAL REQUIREMENTS.

**SYMBOL:** (CC)

### SECTION IV: SIDE SEWER AND DRAINAGE PERMIT NOTES

- A SEPARATE DRAINAGE AND SIDE SEWER PERMIT IS REQUIRED FOR ALL ON-SITE DRAINAGE ELEMENTS AND SIDE SEWERS/SERVICE DRAINS. APPROVAL OF THIS PLAN IS REQUIRED PRIOR TO OBTAINING A DRAINAGE AND SIDE SEWER PERMIT.
- RE-USE OF EXISTING SIDE SEWERS WHEN THERE WILL BE AN INCREASE IN LIVING UNITS REQUIRES THE EVALUATION AND CERTIFICATION (PE EVAL/CERT) OF THE EXISTING SIDE SEWER BY A PROFESSIONAL ENGINEER PRIOR TO FINALIZING THE SIDE SEWER AND DRAINAGE PERMIT. IN MOST CASES, THE SIDE SEWER MUST BE LINED ALL THE WAY TO THE MAIN. SEE DIRECTOR'S RULE 4-2011V.M AND SMC 21.16.240.
- A COMPLETED MEMORANDUM OF DRAINAGE CONTROL (MOC) SIGNED BY THE OWNER MUST BE SUBMITTED AT THE TIME OF SIDE SEWER PERMIT APPLICATION.
- ALL OTHER REQUIRED DOCUMENTS ASSOCIATED WITH THE SIDE SEWER, INCLUDING, BUT NOT LIMITED TO, SIDE SEWER EASEMENT AGREEMENTS, JOINT USE AND MAINTENANCE AGREEMENTS, CERTIFICATION AND ATTESTATION OF MAILING NOTIFICATION FORMS AND RECEIPTS OF MAILING, MUST BE COMPLETED AND SUBMITTED WITH THE SIDE SEWER APPLICATION.

### SECTION V: ON-SITE STORMWATER MANAGEMENT PLANTINGS

COMPLETE THE FOLLOWING CALCULATOR TO DETERMINE THE MINIMUM NUMBER OF PLANTINGS REQUIRED.

FACILITY TYPE	FACILITY SIZE	MULTIPLICATION FACTOR	TOTAL NUMBER OF PLANTS (ROUND UP)
<b>BIORETENTION CELLS AND RAIN GARDENS</b>			
SMALL TREES (IF USED)	BOTTOM AND SIDES	SF x 0.012	= EA
SHRUBS	BOTTOM AND SIDES	SF x 0.028	= EA
GROUNDCOVER / HERBACEOUS PLANTS	BOTTOM AND SIDES	SF x 0.084	= EA
<b>BIORETENTION PLANTERS</b>			
SMALL TREES (IF USED)	BOTTOM	SF x 0.012	= EA
SHRUBS	BOTTOM	SF x 0.028	= EA
GROUNDCOVER / HERBACEOUS PLANTS	BOTTOM	SF x 0.084	= EA
<b>VEGETATED ROOFS</b>			
GROUNDCOVER / HERBACEOUS PLANTS	FOOTPRINT	SF x 0.088	= EA

**PLANTING GENERAL NOTES**

- FOR A LIST OF APPROVED PLANS, SEE THE SEATTLE GREEN FACTOR LIST [http://www.seattle.gov/isd/ems/groups/perm/plan/documents/web\\_informational/09092131.pdf](http://www.seattle.gov/isd/ems/groups/perm/plan/documents/web_informational/09092131.pdf)
- VEGETATION COVERAGE OF SELECTED PLANTS MUST ACHIEVE 90% PERCENT COVERAGE WITHIN 2 YEARS OR ADDITIONAL PLANTINGS SHALL BE PROVIDED.
- PLANTS SHALL BE SITED ACCORDING TO SUN, SOIL, WIND AND MOISTURE REQUIREMENTS. AT A MINIMUM, PROVISIONS MUST BE MADE FOR SUPPLEMENTAL IRRIGATION DURING THE FIRST TWO GROWING SEASONS.

**BIORETENTION CELLS, PLANTERS AND RAIN GARDEN NOTES**

- PROVIDE A MINIMUM OF THREE DIFFERENT SPECIES OF SHRUBS AND HERBACEOUS PLANTS IN EACH FACILITY.

**VEGETATED ROOF NOTES**

- APPROPRIATE PLANTS INCLUDE SUCCULENTS, GRASSES, HERBS, AND WILDFLOWERS THAT ARE ADAPTED TO HARSH CONDITIONS. PLANTS MAY BE INSTALLED AS PRE-GROWN MATS, INDIVIDUAL PLUGS, CUTTINGS, OR SPREAD AS SEEDS.
- A LANDSCAPE MANAGEMENT PLAN SHALL BE DEVELOPED AND IMPLEMENTED.

### SECTION VI: DRAINAGE AND WASTEWATER CONTROL PLAN

SEE SECTION I ON THIS SHEET FOR PLAN REQUIREMENTS.

CHECK SCALE USED:  ONE SQUARE = ONE FOOT (1"=5')

ONE SQUARE = TWO FEET (1"=10')

ONE SQUARE = FOUR FEET (1"=20')

NORTH ARROW

seattle.gov

DATE: 00/00/0000

STANDARD DWC PLAN SHEET DWC

APPLICANT PLAN SET

PROJECT NUMBER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TEMPLATE VERSION: 2016-01-15

STANDARD DRAINAGE AND WASTEWATER CONTROL (DWC) PLAN

CITY OF SEATTLE

DEPARTMENT OF CONSTRUCTION AND INSPECTIONS

Project Number: \_\_\_\_\_

Address: \_\_\_\_\_