

Preliminary Stormwater Control Plan
For a Regulated Project
DeCristo Family Trust, Petaluma CA

November 30, 2018

The Don Joseph DeCristo Family Trust

7356 Country Club Drive
La Jolla, CA 92037
APN: 007-361-003

Land Development Manager

To Be Determined
Business:
E-Mail:

Prepared by:

Steven J. Lafranchi & Associates, Inc.
140 Second Street, Suite 312
Petaluma, CA 94952
Business: 707-762-3122
Fax: 707-762-3239

Alan D. Fulkerson, P.E.
E-Mail: alan@sjla.com

Table of Contents

I. Project Data..... 1
II. Setting..... 1
III. Low Impact Development Design Strategies 2
IV. Documentation of Drainage Design 3
V. Operations and Maintenance Plan..... 4
VI. Certifications..... 5
BASMAA Area Map.....LID

- **Draft Maintenance Agreement For Monitoring Storm Water BMP Facilities and Declaration of Covenants**
- **Draft Maintenance Agreement Exhibit**

I. Project Data

Table 1. Project Data Form

Project Name/Number	DeCristo Family Trust
Application Submittal Date	November 30, 2018
Project Location	109 Ellis St, Petaluma CA 94952 APN 007-361-003
Project Phase No.	NA
Project Type and Description	This Project proposes a new apartment complex with 13 residential apartments.
Total Project Site Area (acres)	0.70 Acres
Total New and Replaced Impervious Surface Area	
Total Pre-Project Impervious Surface Area	4619 s.f.
Total Post-Project Impervious Surface Area	17591 s.f.

II. Setting

II.A. Project Location and Description

The project site is approximately 0.70 acres, located at 109 Ellis Street, Petaluma, California. The existing site consists of a three single family residences, a garage, shed, and an old water tower. It is the intention of the owner to construct a three story apartment complex consisting of 13 rentable units.

II.B. Existing Site Features and Conditions

The project site is approximately 0.70 acres, roughly rectangular and with the back of the site angled to be roughly parallel with Washington Creek. The site is relatively flat with an elevation change of about two feet across the site. The property is bordered by residential properties to the northwest and southeast, Ellis Street to the southwest and Washington Creek to the northeast. There is an existing storm drain system beginning at the Ellis Street side of the site in the gutter, and traversing the neighboring site to the northwest and emptying into Washington Creek Channel. The site generally slopes to the southwest and drains to catch basins at Ellis Street via curb and gutter along the existing southwestern frontage that serves several adjacent properties.

II.C. Opportunities and Constraints for Stormwater Control

The proposed site is designed so that impervious surface area flow is directed into a bio-retention basin sized to accept the run-off from the 85th percentile storm. Spillover from the bio-retention basins will be routed through a storm drain to Washington Creek Channel in historic drainage patterns, but overall the site is conducive to bio-retention basin and stormwater treatment

The site has no constraints on stormwater treatment

III. Low Impact Development Design Strategies

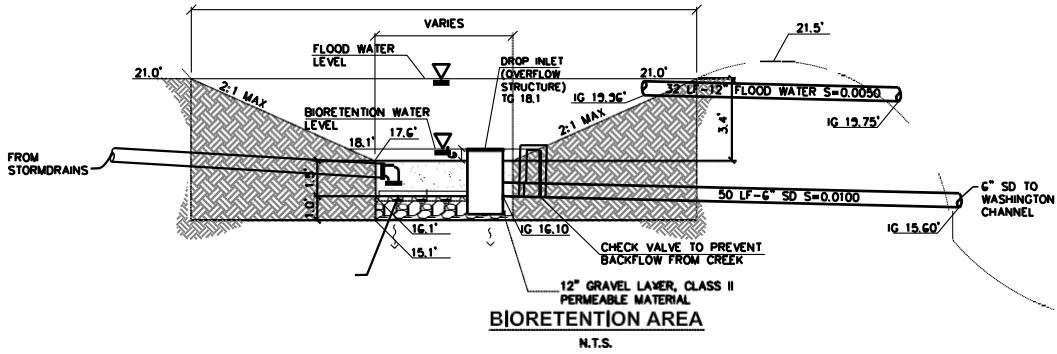
III.A. Use of Permeable Pavements

The driveway that provides vehicular access to the site and extends to the back of the site is intended to be entirely permeable pavement, an area of 6,194 square feet.

III.B. Dispersal of Runoff to Pervious Areas

Runoff from pavements is directed to a bio-retention area via downspouts, area drains, and sheet flow.

IV. Documentation of Drainage Design



DMA Name	DMA Area (s.f.)	Post-Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	DMA-1		
					Sizing Factor	Minimum Facility Area (s.f.) (BRA)	Proposed Facility Area (s.f.) (BRA)
Roof	10,483	Roof	1.0	10,483.0	0.04	703.7	726
Non-Permeable Concrete	6,341	Concrete	1.0	6,341.0			
Landscape	7,678	Landscape	0.1	767.8			
Permeable Concrete	6,194	AC	0.0	0.0			
Total				17,591.8			

V. Operations and Maintenance Plan

Ownership and Responsibility for Maintenance in Perpetuity

The applicant accepts responsibility for interim operation and maintenance of stormwater treatment and flow-control facilities until such time as this responsibility is formally transferred to a subsequent owner.

Summary of Maintenance Requirements for Each Stormwater Facility

This operation and maintenance manual shall be a guide to insure the facilities included in the stormwater treatment system are inspected and maintained in good repair and working order.

Bioretention Basins

The site contains one bioretention basin as shown and labeled on the Preliminary Storm Water Control Plan. The size of the basin is 726 square feet and included in the Documentation of the Drainage Design section of this Plan. The basin shall be a minimum of 30 inches in depth (18" Minimum Planting Medium above 12" Gravel Layer) and level in slope with a hydraulically flat bottom, meaning all points in the bottom of the bioretention basin shall have the same elevation.

Inspection

The stormwater treatment system shall be inspected annually prior to October 15th of each year. A report shall be prepared, signed and sealed by a Civil Engineer registered in the State of California and submitted to the County. The report shall indicate the results of the inspection and identify any actions necessary to ensure the proper operation of the stormwater treatment system. Inspection shall include condition of bioretention basins, inlet swales, vegetation and plant health, weed growth, erosion, slope stability, debris, siltation and blockage.

- Inlets and swales leading to basins shall be inspected for erosion and damage due to traffic, either foot or vehicular and repaired accordingly. Minimum depth for inlet swales is 9-inches with 2:1 side slopes. Rock lining will be required when the running slope is greater than 5% (20:1) otherwise ensure that the vegetation in the swales remains in good health.
- Bioretention basins shall be inspected to be free of silt and free draining to the gravel layer and be maintained to a minimum depth of 30-inches and be hydraulically flat. The inspection shall ensure that the upslope berm is intact and functions as intended.

Document Facilities "As Built"

Include from the final construction drawings:

- Plans, elevations, and details of the bioretention facilities. If necessary, annotate the drawings with the designations used in the Stormwater Control Plan so it is clear which drawing refers to which facility.
- Construction details and specifications, including depths of sand or soil, compaction, pipe materials, and bedding.
- Location and layouts of inflow piping and piping to off-site discharge.
- Native soils encountered (e.g., sand or clay lenses beneath or near facilities).

Changes made in the field during construction must be noted in the *final* Plan to be submitted following construction.

Schedule Maintenance Activities

Schedule the following activities to be completed at least annually. The frequency should be adjusted in response to the needs of each particular facility.

Clean up. Remove any soil or debris blocking planter inlets or overflows. Remove trash that typically collects near inlets or gets caught in vegetation.

Prune or cut back plants for health and to ensure flow into inlets and across the surface of the facility. Remove and replant as necessary. When replanting, maintain the design surface elevation and minimize the introduction of soil.

Control weeds by manual methods and soil amendment. In response to problem areas or threatening invasions, corn gluten, white vinegar, vinegar-based products, or non-selective natural herbicides such as Burnout or Safer's Sharpshooter may be used.

Add mulch. Aged mulch, also called compost mulch, reduces the ability of weeds to establish, keeps soil moist, and replenishes soil nutrients. Mulch is added from time to time as necessary to maintain a mulch layer thickness (some agencies require 3"). However, ensure the underlying soil surface beneath the mulch layer is a minimum 6" below the overflow elevation, consistently throughout the surface area of the facility. In particular, ensure that the top of the mulch layer is below the facility overflow, so that as the facility fills during a major storm, and that the entire surface is wetted before the overflow elevation is reached.

Check signage. Remove graffiti and replace if necessary.

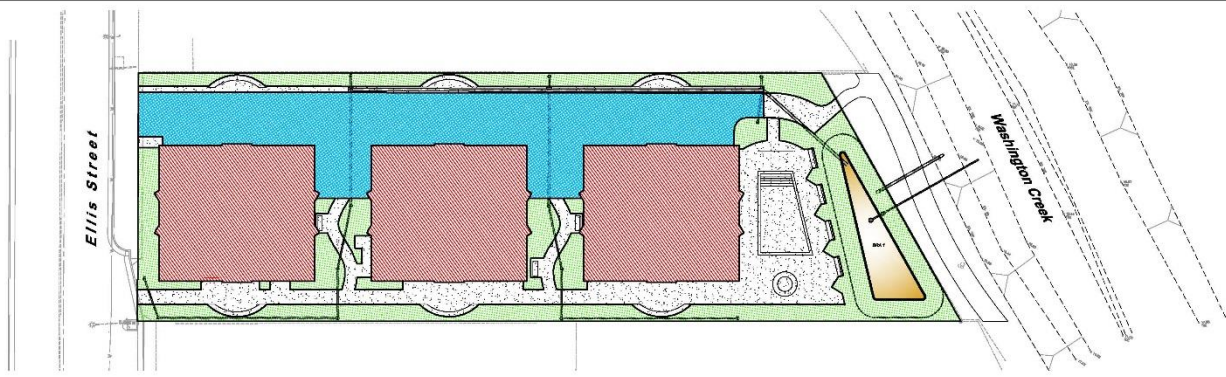
Check irrigation, if any, to confirm it is adequate but not excessive. Landscape maintenance personnel should be aware of the following:

Do not add fertilizer to bioretention facilities. Compost tea, available from various nurseries and garden supply retailers, may be applied at a recommended rate of 5 gallons mixed with 15 gallons of water per acre, up to two weeks prior to planting and once per year between March and June. Do not apply when temperatures are below 50°F or above 90°F or when rain is forecast in the next 48 hours.

Do not use synthetic pesticides on bioretention facilities. Beneficial nematodes and non-toxic controls may be used. Acceptable natural pesticides include Safer® products and Neem oil.

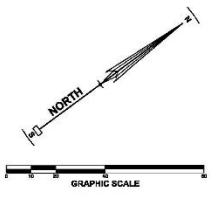
VI. Certifications

The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA *Post-Construction Manual*



DMA Name	DMA Area (s.f.)	Post-Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	DMA-1		
Roof	10,483	Roof	1.0	10,483.0	Sizing Factor	Minimum Facility Area (s.f.) (BRA)	Proposed Facility Area (s.f.) (BRA)
Non-Permeable Concrete	6,341	Concrete	1.0	6,341.0			
Landscape	7,678	Landscape	0.1	767.8			
Permeable Concrete	6,194	AC	0.0	0.0			
Total				17,591.8	0.04	703.7	726

ABBREVIATIONS
 BRA BASIN RETENTION AREA
 DMA DRAINAGE MAINTENANCE AREA



PRELIMINARY STORM WATER CONTROL PLAN
 LANDS OF DE CRISTO FAMILY TRUST
 109 ELLIS STREET APN 007-361-003
 PETALUMA CALIFORNIA

STEVEN J. LARRANCHI & ASSOCIATES, INC.
 LAND PLANNERS - LANDSCAPE ARCHITECTS
 148 SECOND STREET, SUITE 202
 PETALUMA, CALIFORNIA 94952

DATE: 2016.11.30
 SCALE: 1" = 20'
 DESIGN: S.L.
 DRAWING: ONE
 CHECK:
 FOR DISCREETIONARY REVIEW
 JOB No. 181283
 SHEET

LID
 OF 9 SHEETS

11-30-2018