STORMWATER CONTROL PLAN

for

Rialto Place

City of Antioch, CA

March 12, 2024

Prepared for:

Legacy Builders, Inc.
4021 Port Chicago Hwy
Concord, CA 94520

Prepared by:

Wood Rodgers, Inc.
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3875 Hopyard Road, Suite 345
Pleasanton, CA 94588

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I. Project Data

Table 1 Project Data

Project Name/Number	Rialto Place
Project Location	APN 076-010-032, 034, 036 & 037 Antioch, CA 94509
Name of Developer	Discovery Builders, Inc.
Project Phase No.	NA
Project Type and Description	174 Single family homes
Total Project Site Area (acres)	24.06 Acres
Total Area of Land Disturbed (acres)	18.67 Acres
Total New Impervious Surface Area (sq. ft.)	462,010 sq. ft.
Total Replaced Impervious Surface Area	0 sq. ft.
Total Pre-Project Impervious Surface Area	0 sq. ft
Total Post-Project Impervious Surface Area	462,010 sq. ft.
50% Rule[*]	Applies
Project Density	5.4 DU/Ac.
Applicable Special Project Categories [Complete even if all treatment is LID]	None
Percent LID and non-LID treatment	100% LID
HM Compliance [†]	Applies

[*50% rule applies if: Total Replaced Impervious Surface Area > 0.5 x Pre-Project Impervious Surface Area]

[†HM required (unless project meets one of the exemptions on *Guidebook* p. 9) if:
(Total New Impervious Surface Area + Total Replaced Impervious Surface Area) ≥ 1 acre]

II. SETTING

II.A. Project Location and Description

The site is located southeast of Somersville Road in Antioch, CA with its easterly property line adjacent to Contra Costa Canal and Markley Creek running through its southeast corner. This 25.3-acre site consists of four parcels containing 174 proposed single-family homes. All treatment and detention will be self-contained via one proposed water quality/flow control basin on the east side of the property.

II.B. Existing Site Features and Conditions

The site is undeveloped and located on terrain with slopes ranging from 2%-5%, falling northeast with a grade differential of approximately 34 feet. Besides a span of Markley Creek that is running through the southeast corner, the site is vacant and covered in vegetation. No existing utilities are present.

II.C. Opportunities and Constraints for Stormwater Control

The site consists of clay loam moderate slopes, making it easy to have level areas for stormwater quality. Therefore, retaining walls won't be needed to create a level open space area for stormwater quality. However, the terrain still provides enough slope to create sufficient hydraulic head for a storm drain system.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.A. Optimization of Site Layout

The presence of Markley Creek spanning across the southeastern area of the site limits the area that can be developed, leaving the area beyond that feature available for open space. The streets and hardscape are also designed to the minimum required by the City of Antioch in order to minimize impervious area.

III.B. Use of Permeable Pavements

The use of permeable pavements was omitted in this development due to cost constraints and geotechnical considerations.

III.C. Dispersal of Runoff to Pervious Areas

The proposed development will have paved walkways that will slope towards landscaped areas where feasible.

III.D. Bioretention or other Integrated Management Practices

Runoff from houses will be directed towards the streets where it will be collected by drain inlets, ultimately discharging to the bioretention basin.

IV. Documentation of Drainage Design

IV.A. Descriptions of each Drainage Management Area

IV.A.1. Table of Drainage Management Areas

Table 2 Drainage Management Areas

DMA Name	*Area (SF)*	*Surface Type/Description*	*DMA Type/Drains to*
DMA 1A	240,260	Concrete or Asphalt	Bioretention (IMP 1)
DMA 1B	221,750	Conventional Roof	
DMA 1C	303,920	Landscape	

IV.A.2. Drainage Management Area Descriptions

DMA 1, totaling 813,430 square feet, drains roadways, sidewalk, roof, and landscape to IMP 1 via road gutter and storm drain.

IV.B. Integrated Management Practice Descriptions

Runoff from the project site will be collected by a storm drain system and routed to bioretention facilities. The bioretention facilities will be constructed according to the criteria in the *Contra Costa Cleanwater Program C.3 Guidebook, 7th Edition.*

IV.C. Flow Control

This project is subject to hydromodification and Contra Costa County IMP Sizing Calculator was used for sizing calculations. The existing condition consists solely of undeveloped open space. The proposed development will use water quality/flow-control basins with metered outlets to mitigate flow to pre-development conditions.

V. Tabulation and Sizing Calculations

Table 3 Information Summary for IMP Design

Total Project Area Requiring Treatment (SF)	813,430
Mean Annual Precipitation	14
IMP Designed For:	Treatment Plus Flow Control

V.A. Areas Draining to IMPs

Table 4 Drainage Management Area Summary

DMA	Total Drainage Area (SF)	Total Impervious Area (SF)	Total Pervious Area (SF)	Effective Impervious Area (SF)	Required Treatment (4%) (SF)	Required Flow-Control Area (SF)	Provided Area (SF)
1	813,430	426,010	303,920	613,970	24,560	45,213	45,500

VI. SOURCE CONTROL MEASURES

VI.A. Site activities and potential sources of pollutants

VI.B. Source Control Table

Table 5 Source Controls

Potential source of runoff pollutants	*Permanent source control BMPs*	*Operational source control BMPs*
On-site storm drain inlets	Mark all inlets with the words "No Dumping! Flows to Creek"	Maintain and periodically repaint or replace inlet markings. Provide stormwater pollution prevention information to new site owners, lessees, or operators. See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential
Landscape/ Outdoor Pesticide Use	Final landscape plans will include: Landscape design to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. Specify pest-resistant plants, especially adjacent to hardscape. Insure successful establishment by selecting plants appropriate to site soils, slopes, climate, sun, wind, rain,	Maintain landscaping using minimum or no pesticides. See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com Provide IPM information to new owners, lessees and operators.

	land use, air movement, ecological consistency, and plant interactions.	
Vehicle Cleaning, Repair and Maintenance	No vehicle repair or maintenance will be done outdoors Management to prohibit on-site car washing.	No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinse water from parts cleaning into storm drains. No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately. No person shall leave unattended drip parts or other open containers containing vehicle fluid.
Private Streets		Provide street sweeping on a regular basis to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect wash water containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

VI.C. Features, Materials, and Methods of Construction of Source Control BMPs

Source Control BMP's will be constructed per City of Antioch Standards. Drainage inlets will conform to city specifications and will be marked for no dumping. The proposed landscaped design will minimize irrigation and will maintain all native trees and shrubs where possible. Trees and shrubs will be selected based on suitability in the climate and soil conditions.

VII. Stormwater Facility Maintenance

VII.A. Ownership and Responsibility for Maintenance in Perpetuity

Proper operation and maintenance of stormwater management facilities will be the responsibility of the project Home Owner's Association (HOA) in perpetuity.

The applicant will prepare and submit, for the City's review, an acceptable Stormwater Control Operation and Maintenance Plan prior to the completion of construction.

VII.B. Summary of Maintenance Requirements for Each Stormwater Facility

The bioretention facilities will be maintained on the following schedule at a minimum. Details of maintenance responsibilities and procedures will be included in a Stormwater Facility Operation and Maintenance Plan. At no time will synthetic pesticides or fertilizers be applied, nor will any soil amendments, other than aged compost mulch or sand/compost mix, be introduced.

Weekly: The facilities will be examined for visible trash, and trash will be removed. Any graffiti, vandalism, or other damage will be noted and addressed within 48 hours.

Following Significant Rain Events

A significant rain event is one that produces approximately a half-inch or more rainfall in a 24-hour period. Within 24 hours after each such event, the following will be conducted:

- The surface of the facility will be observed to confirm ponding is not prolonged.
- The surface of the mulch layer will be inspected for movement of material. Mulch will be replaced and raked smooth if needed.
- Inlets will be inspected, and any accumulations of trash or debris will be removed. Any erosion at inlets should be restored to grade.
- Side slopes, if any, will be inspected for evidence of instability or erosion, and corrections will be made as necessary.
- Check dams will be inspected for movement and corrections made as necessary.
- Outlet structures will be inspected for any obstructions.

Prior to the Start of the Rainy Season

In September of each year, facility inlets and outlets, including flow-control orifices, will be inspected to confirm there is no accumulation of debris that would block flow. Stormwater should drain freely into the bioretention facilities.

If not previously addressed during monthly maintenance, any growth and spread of plantings that blocks inlets or the movement of runoff across the surface of the facility will be cut back or removed.

Annually During Winter

Once, in December – February of each year, vegetation will be cut back as needed, debris removed, and plants and mulch replaced as needed. The concrete work will be inspected for damage. The elevation of the top of soil and mulch layer will be confirmed to be consistent with the 6-inch reservoir depth.

VIII. CERTIFICATIONS

The selection, sizing, and preliminary design of stormwater treatment and other control measures in this plan meet the requirements of Regional Water Quality Control Board Order R2-2015-0049.

_____

By

_____

Print Name

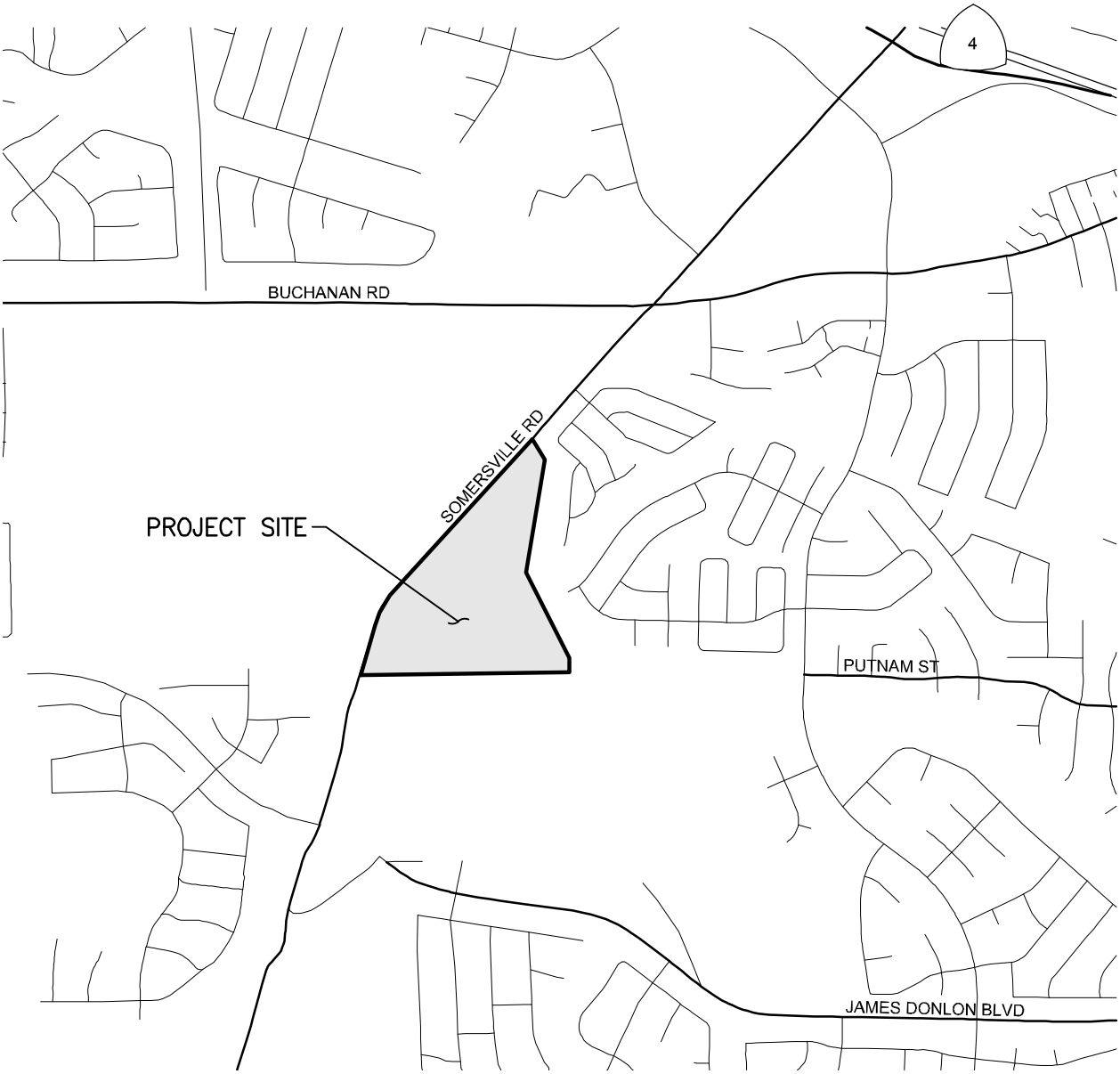
ATTACHMENTS

VICINITY MAP

RIALTO PLACE

ANTIOCH **CALIFORNIA**

MAY 2023



WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
4670 WILLOW ROAD, STE 125 TEL 925.847.1556
PLEASANTON, CA 94588 FAX 925.847.1557

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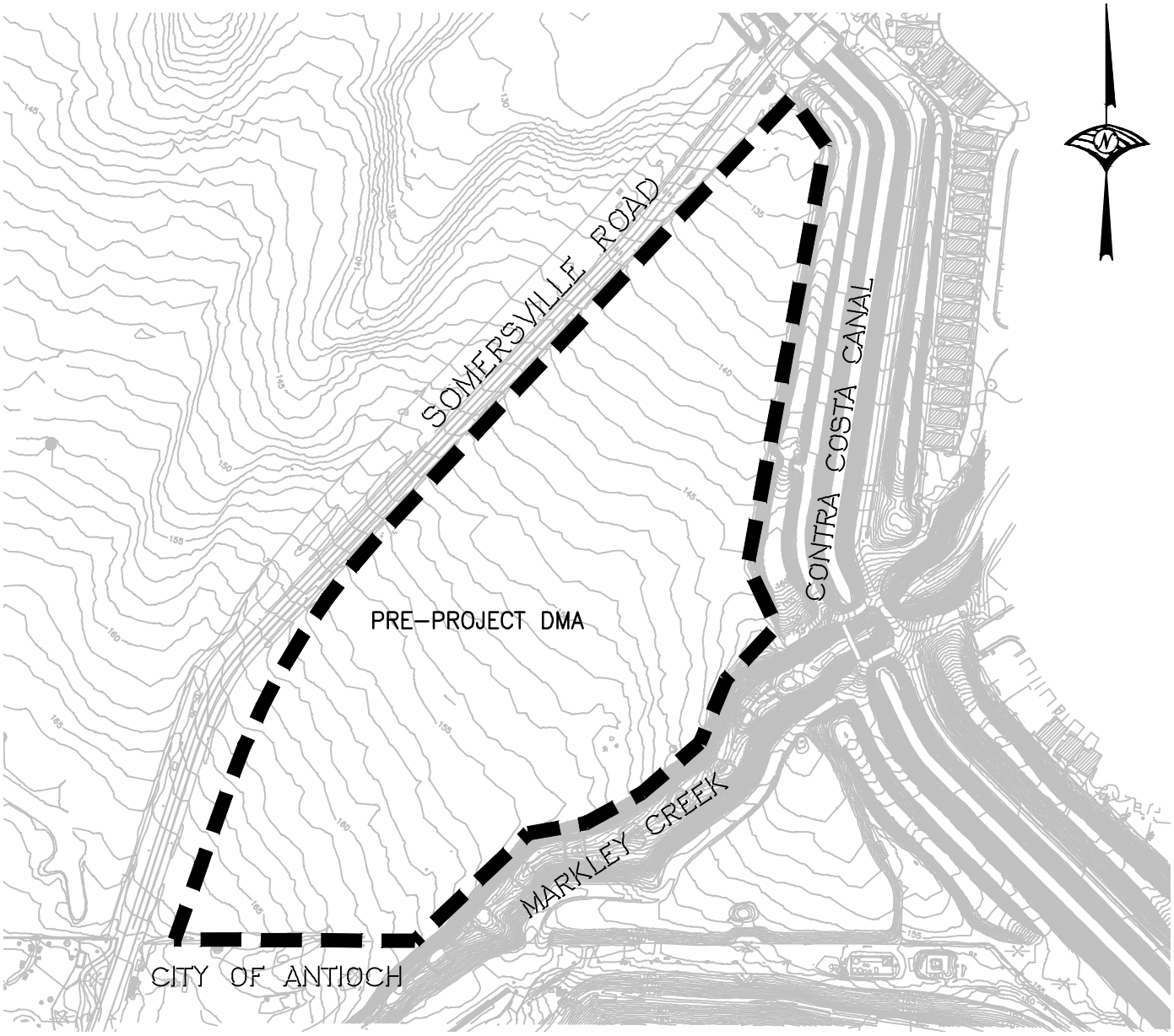
EXISTING CONDITIONS EXHIBIT

RIALTO PLACE

ANTIOCH **CALIFORNIA**

MAY 2023



300' 150' 0 300'

SCALE: 1" = 300'

LEGEND

DMA AREA

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4670 WILLOW ROAD, STE 125 TEL 925.847.1556
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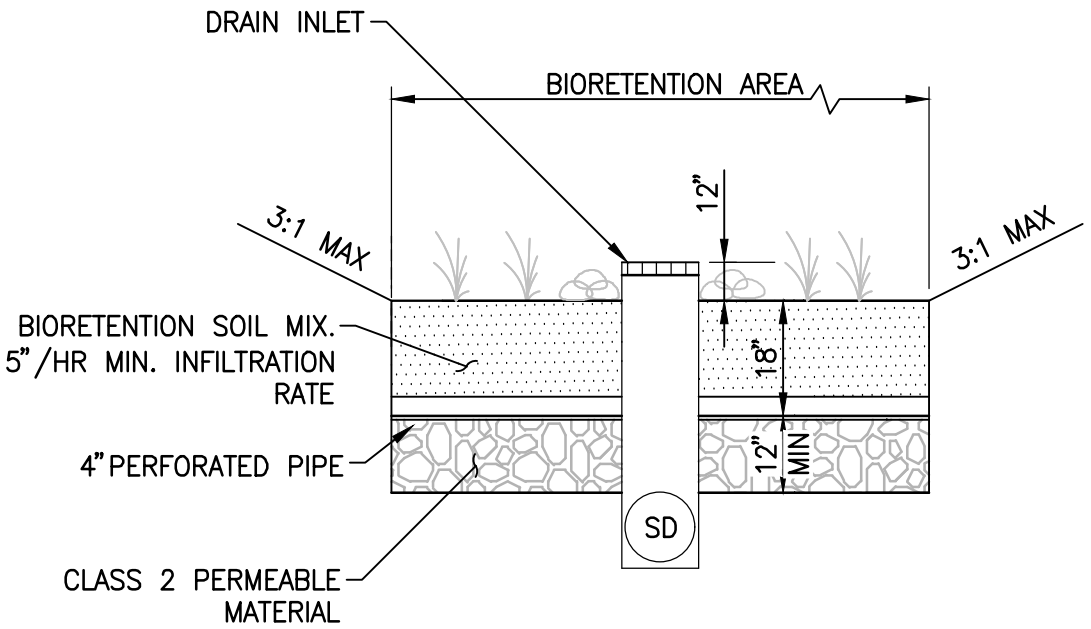
BIORETENTION/HYDROMODIFICATION BASIN SECTION

RIALTO PLACE

ANTIOCH **CALIFORNIA**

MAY 2023



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PRELIMINARY STORMWATER CONTROL PLAN

RIALTO PLACE

CITY OF ANTIOCH, CALIFORNIA

MARCH 13, 2024

LEGEND

- ASPHALT PAVING
- BIORETENTION
- DMA BOUNDARY
- DRAIN INLET
- STORM DRAIN MANHOLE

DRAINAGE MANAGEMENT AREA (DMA) SUMMARY								
DMA	TOTAL DRAINAGE AREA (SF)	TOTAL IMPERVIOUS AREA (ROOFS AND PAVEMENT) (SF)	TOTAL PERVIOUS AREA (SF)	EFFECTIVE IMPERVIOUS AREA (SF)	REQUIRED TREATMENT AREA (4%) (SF)	REQUIRED FLOW-CONTROL AREA(SF)	PROVIDED TREATMENT AREA (SF)	TREATMENT MEASURE
1	813,430	462,010	303,920	613,970	24,560	45,213	45,500	BIORETENTION

NOTES:

1. ALL TREATMENT MEASURES AND TECHNICAL REQUIREMENTS FOR THIS PROJECT ARE BASED ON THE CONTRA COSTA CLEAN WATER PROGRAM C.3 GUIDEBOOK, 7TH EDITION
2. REQUIRED TREATMENT AREA WAS CALCULATED USING THE CONTRA COSTA CLEAN WATER PROGRAM IMP SIZING TOOL SOFTWARE.

WATER QUALITY/FLOW CONTROL (BIORETENTION) BASIN DETAIL

NTS

NORTH 0 60 120 240

WOOD RODGERS

BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

3875 HOPYARD ROAD STE 345 TEL 925.847.1556

PLEASANTON, CA 94588 FAX 925.847.1557

Project Name: Rialto Place
Project Type: Treatment and Flow Control
APN:
Drainage Area: 813,430
Mean Annual Precipitation: 14.0

IV. Areas Draining to IMPs

IMP Name: IMP1
IMP Type: Bioretention Facility
Soil Group: IMP1

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA1	240,260	Concrete or Asphalt	1.00	240,260
DMA2	221,750	Conventional Roof	1.00	221,750
DMA3	303,920	Landscape	0.50	151,960
			Total	613,970

IMP Sizing			
IMP Sizing Factor	Rain Adjustment Factor	Minimum Area or Volume	Proposed Area or Volume
0.060	1.227	45,213	45,500
0.050	1.227	37,677	45,500
0.066	1.227	49,734	45,500
		Maximum Underdrain Flow (cfs)	0.65
		Orifice Diameter (in)	5.19

Area
Surface Volume
Subsurface Volume

Report generated on 2/28/2024 12:00:00 AM by the Contra Costa Clean Water Program IMP Sizing Tool software (version 1.3.1.0).