STORMWATER CONTROL PLAN

for

Somersville Towne Center

February 2025

Time Equities Inc.
Richard Recny
rrency@timeequities.com

prepared by:

BKF Engineers
1646 North California Blvd, Suite 400
Walnut Creek, CA 94596

TABLE OF CONTENTS

Tables

Attachments

Vicinity Map

Stormwater Control Plan Exhibit

IMP Sizing Calculator Output

I. PROJECT DATA

Table 1. Project Data

Project Name/Number	Somersville Towne Center
Application Submittal Date	February 14, 2025
Project Location	2550 Somersville Road, Antioch, CA
Name of Developer	Time Equities, Inc.
Project Phase No.	N/A
Project Type and Description	Multi-family residential project with ~702 apartment units and 2 clubhouse buildings
Project Watershed	Kirker Creek
Total Project Site Area (acres)	40
Total Area of Land Disturbed (acres)	26
Total New Impervious Surface Area (sq. ft.)	41,000
Total Replaced Impervious Surface Area	810,000
Total Pre-Project Impervious Surface Area	1,649,000
Total Post-Project Impervious Surface Area (See Note 1)	1,407,000
50% Rule	Applies
Project Density	26.24 du/acre
Applicable Special Project Categories [Complete even if all treatment is LID]	None
Percent LID and non-LID treatment	100% LID
HM Compliance	Exempt: Post-project impervious area is less than pre-project impervious area.

Note 1: Total Post-Project Impervious Surface includes undisturbed impervious surface

II. SETTING

II.A. Project Location and Description

The proposed project is a multi-family residential area with approximately 702 apartment units and with 2 clubhouse buildings. It is located at 2550 Somersville Road in Antioch, CA. The total project site is approximately 40 acres with 26 acres of land being disturbed. The project also includes new parking areas, landscaping, parks, two pools, emergency vehicle access.

II.B. Existing Site Features and Conditions

The project area is bordered by Delta Fair Boulevard, Fairview Drive, and Somersville Road. The existing site consists of commercial buildings in a mall and parking throughout the site with typical parking lot landscaping. Contours of the existing site show that the topography is relatively flat and follows an existing drainage pattern by collecting runoff into existing inlets before entering the storm drain system. Based on the USDA Natural Resources Conservation Service (NRCS) web soil survey, the soil type is rated Type C. The site consists of clay loam soil properties. This site is also classified to have a well-drained drainage class with no potential flooding or ponding. Further geotechnical properties will be known once a site-specific geotechnical report is provided.

II.C. Opportunities and Constraints for Stormwater Control

The project will be conditional on treatment, subject to coverage under the Provision C.3 of the California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (MRP). Compliance will be achieved in accordance with Contra Costa Clean Water Program Stormwater C.3 Guidebook. Opportunities on site include the placement of multiple bioretention areas throughout the site for dispersal of storm water runoff, raised planters along proposed building facades for roof runoff, and self-retaining landscaping throughout the site to treat additional pathways.

Constraints include the possibility of impermeable soils (hydrologic soil group C) where soils in this group have high runoff potential when thoroughly saturated. Water movement through this soil type can be heavily restricted. This soil group chiefly consists of clay soils that have high swelling potential and often a high water table. Disposal of runoff to deep infiltration is not feasible on this site due to the low permeability of the clay soils. Parking requirements for the new apartment complex also limit opportunities to reduce site imperviousness.

Since the site is relatively flat, the project proposes to utilize multiple inlets to capture on-site runoff and direct into the bioretention areas around the site. The runoff from the bioretention areas and raised planters will be collected in a subsurface performed pipe, and then piped to an existing storm drain line located along Delta Fair Boulevard and Fairview Drive.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.A. Optimization of Site Layout

III.A.1. Limitation of development envelope

The limits of the new Somersville Towne Center are established by setback requirements by the City of Antioch.

III.A.2. Preservation of natural drainage features
There are no existing natural drainage features on site.

III.A.3. Setbacks from creeks, wetlands, and riparian habitats
There are no creeks, wetlands, or riparian habitats adjacent to this property.

III.A.4. Minimization of imperviousness
Bioretention areas, raised planters, and landscaping are incorporated into the site design.

III.A.5. Use of drainage as a design element
Storm drain pipes, drainage inlets, trench drains, area drains, and drainage bubblers are all going to be utilized on this project site to collect and direct the stormwater runoff to designated bioretention areas.

III.B. Use of Permeable Pavements
Due to assumed impermeable soils with little to no infiltration ability, permeable pavers are not feasible.

III.C. Dispersal of Runoff to Pervious Areas
The impervious asphalt, concrete, and building roofs within the proposed project footprint will be directed to bioretention facilities, raised planters, and self-retaining landscape. These proposed facilities will convey the runoff to the public drainage system in Delta Fair Boulevard and Fairview Drive.

III.D. Bioretention or other Integrated Management Practices
The project has direct runoff to the following integrated management practices: Bioretention facilities, raised planters, and self-retaining landscape.

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 1	15,600	Conventional Roof	IMP-1
DMA 2	114,600	Concrete/Asphalt	IMP-2
DMA 3	45,600	Concrete/Asphalt	IMP-3
DMA 4	92,800	Concrete/Asphalt	IMP-4
DMA 5	40,700	Conventional Roof	IMP-5
DMA 6	27,500	Conventional Roof	IMP-6
DMA 7	65,100	Concrete/Asphalt	IMP-7

DMA 8	27,500	Conventional Roof	IMP-8
DMA 9A	374,200	Concrete/Asphalt	IMP-9
DMA 9B	26,000	Conventional Roof	IMP-9
DMA 10	27,100	Conventional Roof	IMP-10
DMA 11	47,000	Conventional Roof	IMP-11
DMA 12	11,500	Conventional Roof	IMP-12
DMA 13	15,600	Conventional Roof	IMP-13
DMA 14	31,200	Conventional Roof	IMP-14
DMA 15	27,400	Conventional Roof	IMP-15
DMA 16	13,550	Conventional Roof	IMP-16
DMA 17	15,600	Conventional Roof	IMP-17
DMA 18	90,000	Concrete/Asphalt	IMP-18
DMA 19	615,000	Concrete/Asphalt	IMP-19

IV.A.2. Drainage Management Area Descriptions

DMA 1 – Roof: Totaling 15,600 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-1.

DMA 2 – Impervious: Totaling 114,600 square feet of concrete and asphalt paving, which is collected through storm drain inlets and routed to bioretention area IMP-2.

DMA 3 – Impervious: Totaling 45,600 square feet of concrete and asphalt paving, which is collected through storm drain inlets and routed to bioretention area IMP-3.

DMA 4 – Impervious: Totaling 92,800 square feet of concrete and asphalt paving, which is collected through storm drain inlets and routed to bioretention area IMP-4.

DMA 5 – Roof: Totaling 40,700 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-5.

DMA 6 – Roof: Totaling 27,500 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-6.

DMA 7 – Impervious: Totaling 65,100 square feet of concrete and asphalt paving, which is collected through storm drain inlets and routed to bioretention area IMP-7.

DMA 8 – Roof: Totaling 27,500 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-8.

DMA 9A – Impervious: Totaling 374,200 square feet of concrete and asphalt paving, which is collected through storm drain inlets and routed to bioretention area IMP-9.

DMA 9B – Roof: Totaling 26,000 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to bioretention area IMP-9.

DMA 10 – Roof: Totaling 27,100 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-10.

DMA 11 – Roof: Totaling 47,000 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-11.

DMA 12 – Roof: Totaling 11,500 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-12.

DMA 13 – Roof: Totaling 15,600 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-13.

DMA 14 – Roof: Totaling 31,200 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-14.

DMA 15 – Roof: Totaling 27,400 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-15.

DMA 16 – Roof: Totaling 13,550 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-16.

DMA 17 – Roof: Totaling 15,600 square feet of conventional roof, drains which is collected in building rainwater leaders and routed to raised planter area IMP-17.

DMA 18 – Impervious: Totaling 90,000 square feet of concrete and asphalt paving, which is collected through run-off and routed to self-retaining area IMP-18.

DMA 19 – Impervious: Totaling 615,000 square feet of concrete and asphalt paving, which is collected through high pressure storm drain inlets and routed to bioretention area IMP-19.

IV.B. Integrated Management Practice Descriptions

Bioretention and raised planter facilities will be designed and constructed in accordance with the criteria included within the Stormwater Guidebook. A cross-section of the bioretention area is included on the preliminary Stormwater Control Plan Exhibit and construction details are provided within the site design Improvement Plans. Bioretention facilities have the following characteristics:

- Ponding depth will be 6" min.
- 18" depth of bioretention soil mix with minimum long-term infiltration rate of 5"/hour.
- Area of soil mix meets or exceeds minimum.
- Perforated pipe (PVC SDR 35 or approved equivalent) underdrain bedded in Class 2 permeable layer with connection and sufficient head to storm drain or discharge point.
- 18" depth of Class 2 permeable layer
- No filter fabric between sandy loam and class 2 permeable layer.

- Due to poor draining soils, impermeable liners are installed under the Class 2 permeable layer.
- Underdrain has a clean-out port consisting of a vertical, rigid, non-perforated PVC pipe, with a minimum diameter of 4 inches and a watertight cap
- Location and footprint of facility are shown on site plan, landscaping, and grading plan.
- Bioretention area is designed as a basin (level edges, and grading plan is consistent with these elevations.
- Curb cuts are 12" wide, have a 4"-6" reveal and an apron or other provision to prevent blockage when vegetation grows in, and energy dissipation as needed.
- Overflow connected to a downstream storm drain or approved discharge point.
- Emergency spillage will be safely conveyed overland.
- Plantings are suitable to the climate, exposure, and a well-drained soil, and occasional inundation during large storm events.
- Irrigation system with connection to water supply, on a separate zone.
- Vaults, utility boxes, and light standards are located outside the minimum soil mix surface area.

IV.C. Tabulation and Sizing Calculations

See attached Contra Costa Clean Water Program IMP Sizing Tool summary.

V. SOURCE CONTROL MEASURES

V.A. Site activities and potential sources of pollutants

The site will note create potential sources of stormwater pollutants.

V.B. Source Control Table

Table 3. Source Controls

Potential source of runoff pollutants	*Permanent source control BMPs*	*Operational source control BMPs*
On-site storm drain inlets	All accessible on-site inlets will be marked with the words "Only Rain Down the Drain" City of Antioch Curb Markers	Markings will be obtained from the City & periodically replaced as needed. Inlets and pipes conveying storm water to BMPs will be inspected and maintained as part of BMP Operation and Maintenance Plan.
Landscape/outdoor pesticide use	Landscape plans will be designed to minimize irrigation and runoff and to minimize use of fertilizers and pesticides. Specify plantings within swales that are tolerant of the sandy loam soils and periodic inundation and will conform to the plan list recommendation by the C.3. Guidebook. Include pest-resistant plants, plantings appropriate to site soils, slopes, climate, sun, wind, rain, land use.	Landscape will be maintained using minimum or no pesticides. Person or contractor responsible for landscape maintenance to use IMP principles.
Miscellaneous Drain or Wash Water or Other Sources: Roofing, gutters, and trim.	Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	
Plazas, sidewalks, and parking lots		Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

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

Not Applicable.

VI. STORMWATER FACILITY MAINTENANCE

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

An operations and maintenance agreement and plan will be developed between the developer and the City of Antioch prior to construction of this project and it will be recorded.

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

Bioretention Areas and Raised Planters
The facilities remove pollutants primarily by filtering runoff slowly through an active layer of soil. Routine maintenance is needed to ensure that flow is unobstructed, that erosion is prevented, and that soils are held together by plant roots and are biologically active. Typical maintenance consists of the following:

- Inspect inlets for channels, exposure of soils, or other evidence of erosion. Clear trash and any obstructions and remove any accumulation of sediment. Examine rock or other material used as a splash pad and replenish if necessary.
- Inspect outlets for erosion or plugging.
- Inspect side slopes for evidence of instability or erosion and correct as necessary.
- Observe soil at the bottom of the swale or filter for uniform percolation throughout. If portions of the swale or filter do not drain within 48 hours after the end of a storm, the soil should be tilled and replanted. Remove any debris or accumulations of sediment.
- Examine the vegetation to ensure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas. When mowing, remove no more than $^1/_3$height of grasses. Confirm that irrigation is adequate and not excessive. Replace dead plants with those required by the C.3. Plan list in the 6th edition C.3. Guidebook and remove noxious and invasive vegetation.
- Abate any potential vectors by filling holes in the ground in and around the swale and by insuring that there are no areas where water stands longer than 48 hours following a storm. If mosquito larvae are present and persistent, contact the Contra Costa Mosquito and Vector Control District for information and advice. Mosquito larvicides should be applied only when absolutely necessary and then only by a licensed individual or contractor.

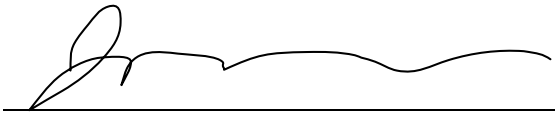
VII. CONSTRUCTION PLAN C.3 CHECKLIST

Table 4. Construction Plan C.3 Checklist

Stormwater Control Plan Page #	*BMP Description*	*See Plan Sheet #s*
	Bioretention Areas	C7.00

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.



Jeffrey Hinton, PE

Senior Project Manager

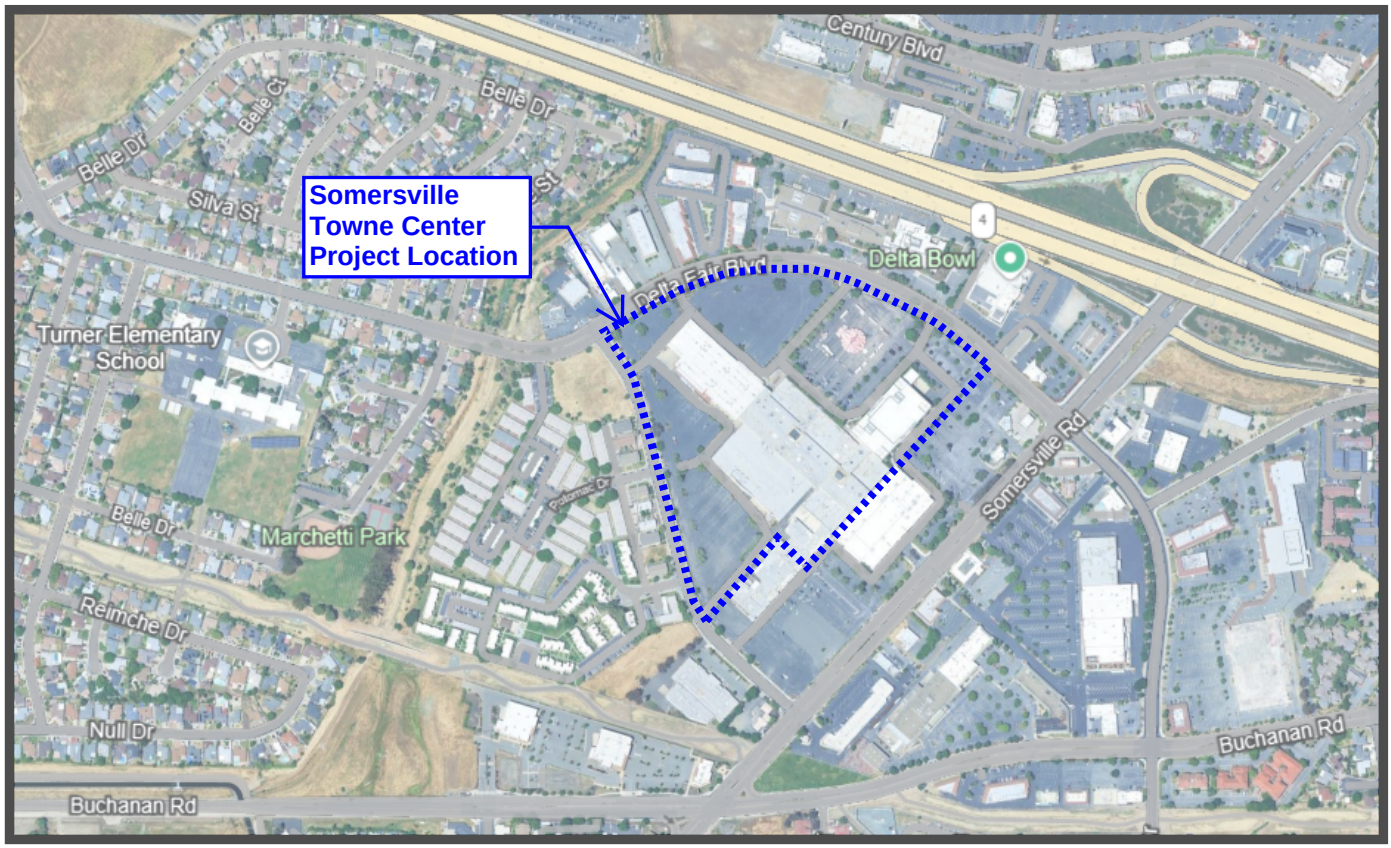
02-14-2025

Date

ATTACHMENT A

VICNITY MAP

VICINITY MAP



ATTACHMENT B

CONTRA COSTA IMP CALCULATOR

SUMMARY REPORT

Project Name: Somerville Towne Center
Project Type: Standard LID WQ Treatment
APN: 074-121-026
Drainage Area: 1,723,550 sq ft
Mean Annual Precipitation: 13.8 inches

II. Self-Retaining Areas

Self-Retaining DMA	
DMA Name	**Area (sq ft)**
DMA 18B	28,000

III. Areas Draining to Self-Retaining Areas

DMA Name	Area (sq ft)	Surface Type	Runoff Factor	Product (Area x Runoff Factor) [A]	Receiving Self Retaining DMA	Receiving Self-Retaing DMA Area (sq ft) [B]	Ratio [A]/[B]
DMA 18A	29000	Concrete or Asphalt	1.0	29,000.0	DMA 18B	28,000	1.04

IV. Areas Draining to IMPs

IMP Name: IMP1
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA1	15,000	Conventional Roof	1.00	15,000
			Total	15,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	600 sq ft	600 sq ft

IMP Name: IMP2
IMP Type: Bioretention Facility
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 2A	86,000	Concrete or Asphalt	1.00	86,000
DMA 2B	25,000	Landscape	0.10	2,500
			Total	88,500

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	3,540 sq ft	3,600 sq ft

IMP Name: IMP3
IMP Type: Bioretention Facility
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 3A	37,000	Concrete or Asphalt	1.00	37,000
DMA 3B	7,000	Landscape	0.10	700
			Total	37,700

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,508 sq ft	1,600 sq ft

IMP Name: IMP4
IMP Type: Bioretention Facility
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 4A	65,000	Concrete or Asphalt	1.00	65,000
DMA 4B	25,000	Landscape	0.10	2,500
			Total	67,500

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	2,700 sq ft	2,800 sq ft

IMP Name: IMP5
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 5A	36,000	Conventional Roof	1.00	36,000
DMA 5B	3,000	Landscape	0.10	300
			Total	36,300

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,452 sq ft	1,700 sq ft

IMP Name: IMP6
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 6	26,000	Conventional Roof	1.00	26,000
			Total	26,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,040 sq ft	1,500 sq ft

IMP Name: IMP7
IMP Type: Bioretention Facility

Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 7A	40,000	Concrete or Asphalt	1.00	40,000
DMA 7B	22,000	Landscape	0.10	2,200
			Total	42,200

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,688 sq ft	3,100 sq ft

IMP Name: IMP8
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 8	26,000	Conventional Roof	1.00	26,000
			Total	26,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,040 sq ft	1,500 sq ft

IMP Name: IMP9
IMP Type: Bioretention Facility
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 9A-1	284,000	Concrete or Asphalt	1.00	284,000
DMA 9A-2	76,200	Landscape	0.10	7,620
DMA 9B	26,000	Conventional Roof	1.00	26,000
			Total	317,620

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	12,705 sq ft	14,000 sq ft

IMP Name: IMP10
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 10	26,000	Conventional Roof	1.00	26,000
			Total	26,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,040 sq ft	1,100 sq ft

IMP Name: IMP11
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 11	45,000	Conventional Roof	1.00	45,000
			Total	45,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,800 sq ft	2,000 sq ft

IMP Name: IMP12
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 12	11,000	Conventional Roof	1.00	11,000
			Total	11,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	440 sq ft	500 sq ft

IMP Name: IMP13
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 13	15,000	Conventional Roof	1.00	15,000
			Total	15,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	600 sq ft	600 sq ft

IMP Name: IMP14
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 14	30,000	Conventional Roof	1.00	30,000
			Total	30,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,200 sq ft	1,200 sq ft

IMP Name: IMP15

IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 15	26,000	Conventional Roof	1.00	26,000
			Total	26,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	1,040 sq ft	1,400 sq ft

IMP Name: IMP16
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 16	13,000	Conventional Roof	1.00	13,000
			Total	13,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	520 sq ft	550 sq ft

IMP Name: IMP17
IMP Type: Flow-Through Planter
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 17	15,000	Conventional Roof	1.00	15,000
			Total	15,000

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	600 sq ft	600 sq ft

IMP Name: IMP 19
IMP Type: Bioretention Facility
Soil Group: D

DMA Name	Area (sq ft)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor
DMA 19A	556,000	Concrete or Asphalt	1.00	556,000
DMA 19B	34,000	Landscape	0.10	3,400
			Total	559,400

	IMP Sizing Factor	Minimum	Proposed
Area	0.040	22,376 sq ft	25,000 sq ft

Report generated on 02/10/2025 by the Contra Costa Clean Water Program IMP Sizing Tool software (version 1.4.1.0).

ATTACHMENT C

STORMWATER CONTROL PLAN EXHIBIT

TREATMENT CONTROL MEASURE SUMMARY TABLE

	TOTAL SHED AREA (SF)	IMPERVIOUS SURFACE AREA (SF)	PERVIOUS SURFACE AREA (SF)	REQUIRED TREATMENT AREA (SF)	PROPOSED TREATMENT AREA (SF)	TREATMENT TYPE
DMA-1	15,600	15,000	0	600	600	RAISED PLANTER
DMA-2	114,600	86,000	25,000	3,540	3,600	BIORETENTION
DMA-3	45,600	37,000	7,000	1,508	1,600	BIORETENTION
DMA-4	92,800	65,000	25,000	2,700	2,800	BIORETENTION
DMA-5	40,700	36,000	3,000	1,452	1,700	RAISED PLANTER
DMA-6	27,500	26,000	0	1,040	1,500	RAISED PLANTER
DMA-7	65,100	40,000	22,000	1,688	3,100	BIORETENTION
DMA-8	27,500	26,000	0	1,040	1,500	RAISED PLANTER
DMA-9A	374,200	284,000	76,200	11,665	14,000	BIORETENTION
DMA-9B	26,000	26,000	0	1,040		
DMA-10	27,100	26,000	0	1,040	1,100	RAISED PLANTER
DMA-11	47,000	45,000	0	1,800	2,000	RAISED PLANTER
DMA-12	11,500	11,000	0	440	500	RAISED PLANTER
DMA-13	15,600	15,000	0	600	600	RAISED PLANTER
DMA-14	31,200	30,000	0	1,200	1,200	RAISED PLANTER
DMA-15	27,400	26,000	0	1,040	1,400	RAISED PLANTER
DMA-16	13,550	13,000	0	520	550	RAISED PLANTER
DMA-17	15,600	15,000	0	600	600	RAISED PLANTER
DMA-18 (SELF RETAINING AREAS)	90,000	29,000	28,000	14,500	33,000	SELF-RETAINING
DMA-19 (EXISTING UNDISTURBED AREA)	615,000	556,000	34,000	22,376	25,000	BIORETENTION
TOTAL	1,723,550	1,407,000	220,200	70,389	96,350	

LEGEND:

- PROPERTY LINE
- DRAINAGE MANAGEMENT AREA
- STORM DRAIN PIPE
- 4" PERFORATED PIPE
- BIORETENTION AREA
- IMPERVIOUS AREA
- LANDSCAPE AREA

GENERAL NOTES

1. THE STORMWATER MANAGEMENT PLAN HAS BEEN PREPARED TO MEET THE COUNTY OF CONTRA COSTA COUNTY C3 STORMWATER TECHNICAL GUIDANCE 9TH EDITION, DATED JULY 2024 IS USED FIR A BASIS OF DESIGN.
2. STORM DRAIN PIPE SIZE AND SLOPE DESIGN BASED ON 10 YEAR STORM.
3. SELF-RETAINING AREAS ARE NOT SHOWN TO SHOW CLARITY.

AREA SUMMARY:

EXISTING IMPERVIOUS AREA WITHIN THE PROJECT AREA ON PRIVATE PROPERTY: ± 1,649,000 SF

NEW/ MODIFIED IMPERVIOUS AREA WITHIN THE PROJECT AREA ON PRIVATE PROPERTY: ± 1,407,000 SF

N

80 0 80 160
scale 1" = 80' feet

LCA ARCHITECTS

WWW . LCA - ARCHITECTS . COM

CARL E. CAMPOS
DAVID BOGSTAD

590 YGNACIO VALLEY ROAD, SUITE 310
WALNUT CREEK, CALIFORNIA 94596
(925) 944-1626

1970 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612
(510) 272-1060

SOMERSVILLE TOWNE CENTER

ANTIOCH, CALIFORNIA

BKF

BKF ENGINEERS
1646 N. CALIFORNIA BLVD.
SUITE 400
WALNUT CREEK, CA 94596
(925) 940-2200
www.bkf.com

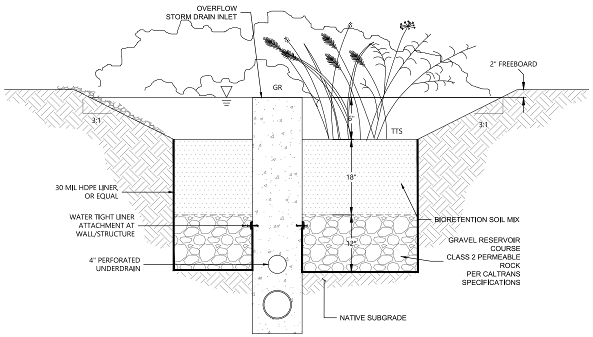
STORMWATER CONTROL PLAN

SCALE: AS NOTED
DATE: 02.14.2025
REVISIONS:

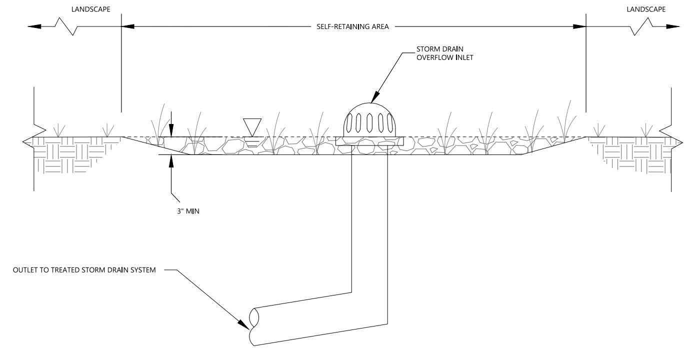
PROJECT NO. 200670

C7.00

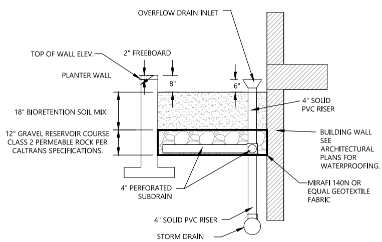
\\BKF-WC\VOL4\2020\200670_SOMERSVILLE_TOWNE_CENTER\ENG\PLANNING\SHEETS\241202_SVTC_07_SWCP.DWG PLOT: 2/13/2025 1:39 PM



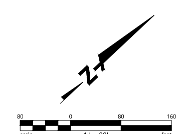
1 BIORETENTION CONFIGURATION
NTS



2 SELF-RETAINING AREA
NTS



3 RAISED BIORETENTION PLANTER
NTS



LCA ARCHITECTS

WWW . LCA - ARCHITECTS . COM
CARL E. CAMPOS
DAVID BOGSTAD
590 YGNACIO VALLEY ROAD, SUITE 310
WALNUT CREEK, CALIFORNIA 94596
(925) 944-1626
1970 BROADWAY, SUITE 800
OAKLAND, CALIFORNIA 94612
(510) 272-1060

SOMERSVILLE TOWNE CENTER

ANTIOCH, CALIFORNIA

BKF
BKF ENGINEERS
1646 N. CALIFORNIA BLVD.
SUITE 400
WALNUT CREEK, CA 94596
(925) 940-2200
www.bkf.com

STORMWATER CONTROL PLAN

SCALE: AS NOTED
DATE: 02.14.2025
REVISIONS:

PROJECT NO. 200670

C7.01

\\BKF-WC\VOL4\2020\200670_SOMERSVILLE_TOWNE_CENTER\ENG\PLANNING\SHEETS\241202_SVTC_07_SWCP.DWG PLOT: 2/13/2025 1:39 PM