



Storm Water Control Plan Outline

For

New Industrial Buildings

At

**Pioneer Street
Santa Cruz, CA 95060
APN 001-172-14**

Date: December 19, 2018

**Prepared For:
Swift Consulting Services**

**Prepared By:
RI Engineering, Inc.
Project Number 19-101-1**



Stormwater Control Plan Outline per City of Santa Cruz Chapter 6B of the Best Management Practices for Private and Public Development Projects, Appendix B.

I. Project Information

- A. Project Name: New Industrial Buildings
 - i. Application Number: TBD
 - ii. Location: Pioneer Street, Santa Cruz, CA 95060
 - iii. APN 001-172-14
- B. Applicant Name: John Swift
- C. Project Phase Number: 1
- D. Project Description: The project consists of constructing two new industrial warehouse storage buildings with five units total on the 0.94 acre parcel. Associated improvements include new driveway approach, pervious paver parking lot, concrete paths, and stormwater bioretention facilities.

II. Project Site Assessment Summary

- A. Site Topography: Realigned Pogonip Creek is at the northern edge of the property. A retaining wall separates Pogonip Creek from the developable area. The site gradually slopes from the northwest to the southeast. The developable site slopes at an average of 1.5%±. Elevations within the developable area range from 299.0 to 294.5 feet.
- B. Geology and Soil Types:
 - i. Websoil survey shows the soils in the area to be Soquel Loam, 0 to 2 percent slopes.
 - ii. Saturated Conductivity, Ksat (avg)=0.4 inches per hour
 - iii. Hydrologic Soil Group: C
 - iv. The geotechnical preliminary results describes the site as having potentially liquefiable soils that extend 20 below the ground surface, differential settlement and sand boils resulting in liquefaction, high ground water, flooding from the adjacent creek which is at a higher elevation than the site, and loose and wet surface soils. More detailed soil information can be found in the geotechnical investigation report to be completed in January 2020.2
- C. Hydrologic Considerations:
 - i. There is a high water table and close proximity to Pogonip Creek.
- D. Natural Areas: The area was previously a trailer storage area for Goodwill. Realigned Pogonip Creek is at the northern edge of the site.
- E. Other Site Features and Constraints: N/A

III. Project Stormwater Performance Criteria and Drainage Management

- A. Development Area and BMP Requirement Tier
 - i. Development Area = 29,000 square feet
 - ii. Project Type: New Development, Multi-family, Commercial, Industrial, Public Facilities
 - iii. Please see Appendix A Stormwater and Low Impact Development BMP Requirement Worksheet for impervious area calculations
 - iv. BMP Tier: 2
- B. Drainage Management Areas – see attached drainage map and tabulations

IV. Site Design and SCMs

- A. Summary of Site Design and Runoff Reduction Measures included in project: Roof runoff will be discharged directly from downspouts to flow-through planters. The runoff from the AC driveway and the majority of the concrete walks will be directed to a bio-swale located along the easterly edge of the property. All flow-through planters areas on the property will have overflow catch basins that will be piped to discharge to the existing gutter in Pioneer Street by constructing 3” thru curb pipes in the existing public sidewalk. The bio-swale will terminate at a catch basin located at the southeast corner of the property and also discharge to the gutter using 3” thru curb pipes. See the attached drainage map and tabulation table.
- B. See the attached Stormwater Control Measure Sizing Calculator for sizes of Drainage Management Areas (DMA) and Stormwater Control Measures (SCM). A drainage map showing the DMAs and SCMs is also attached.

V. BMP Operation and Maintenance Plan

- A. See the attached Drainage Map and sheet C-3 for the location of storm drainage facilities.
- B. Operation and Maintenance Plan and Maintenance Agreement will be completed and submitted at the building permit application phase. A schedule of annual maintenance is included in the grading and drainage plans.

Attachments

- Stormwater and Low-Impact Development BMP Requirement Worksheet
- Central Coast Stormwater Control Measure Sizing Calculator
- Drainage Map

APPENDIX A

STORM WATER AND LOW-IMPACT DEVELOPMENT BMP REQUIREMENT WORKSHEET

How to Use This Worksheet

The City's Storm Water BMP requirements are based on project type, proposed impervious area, and location within the watershed. This worksheet was developed to help permit applicants determine and meet storm water BMP requirements applicable to a proposed development or redevelopment

- 1 - Download this fillable form online at www.cityofsantacruz.com/LID
- 2 - Fill out the Worksheet to determine what stormwater BMP requirements apply to a proposed project.
- 3 - Attach Worksheet and additional documentation required as listed in the City Storm Water Best Management Practices for Private and Public Development Projects to plans for review by the Department of Public Works
- 4 - Please contact the Public Works Environmental Project Analyst at 420-5160 if you have any questions on completing the worksheet.

Project Address: Pioneer Street **Bldg Permit #:**

A - Project Type

Check project type that applies:

- ☐ Single Family Home ☒ Multi-family, Commercial, Industrial, Public facilities

Check development type that applies:

- ☒ New Development ☐ Redevelopment / Remodel

B - Proposed Development Area and Impervious Area:

Pre-project impervious surface area: 0 sq ft

Post-project impervious surface area: 14,990 sq ft

Amount of impervious surface area that will be **replaced**: 0 sq ft

Amount of new impervious surface area that will be **created**: 14,990 sq ft

Reduced Impervious Area Credit: 0 sq ft

New and Replaced Impervious Area = 14990 sq ft

Net Impervious Area = 14990 sq ft

(Net Impervious Area = Impervious Area created + Impervious Area replaced - Reduced Impervious Area Credit)

C - Post-Construction BMP Tier requirement:

Check Project Type and Impervious Area (from calculations above) that applies.

BMP requirements are cumulative (e.g. a project subject to BMP Tier 3 is also subject to Tiers 1 and 2), permit review fees are not cumulative.

Projects requiring a Stormwater Control Plan will need to involve a civil engineer.

SINGLE-FAMILY HOMES		BMP TIER	Permit Review Fee	Stormwater Control Plan required?
☐	Single-family Home with Net Impervious Area < 15,000 sf , please consult Chapter 6A, BMPs for Single-Family Homes on Small Lots	N/A	\$0	No
☐	Net Impervious Area ≥ 15,000 sf ; New and replaced impervious area < 22,500 sf	3	\$330	Yes
☐	New and replaced impervious area ≥ 22,500 sf	4	\$550	Yes
MULTI-FAMILY, COMMERCIAL, INDUSTRIAL, PUBLIC FACILITIES		BMP TIER	Permit Review Fee	Stormwater Control Plan Required?
☐	New and Replaced Impervious Area ≥ 2,500 sf ; Net Impervious Area < 5,000 sf	1	\$0	No
☒	Net Impervious Area ≥ 5,000 sf ; New and Replaced Impervious Area < 15,000 sf	2	\$330	Yes
☐	New and Replaced Impervious Area ≥ 15,000 sf but < 22,500 sf	3	\$550	Yes
☐	New and replaced impervious area ≥ 22,500 sf	4	\$550	Yes

If the proposed project is only subject to BMP Tiers 1 or 2, skip to Step F.

D - Watershed Management Zones - For projects subject to Tiers 3 Post-Construction BMP requirements only.

Watershed Management Zones are viewable online on the City of Santa Cruz GIS website at: <http://gis.cityofsantacruz.com/gis/index.html>

Watershed Management Zones and associated Tier 3 (Runoff Retention) Post-Construction BMP requirements

If Tier 3 BMP requirements are applicable to the project, check the watershed management zone area where the project is located.

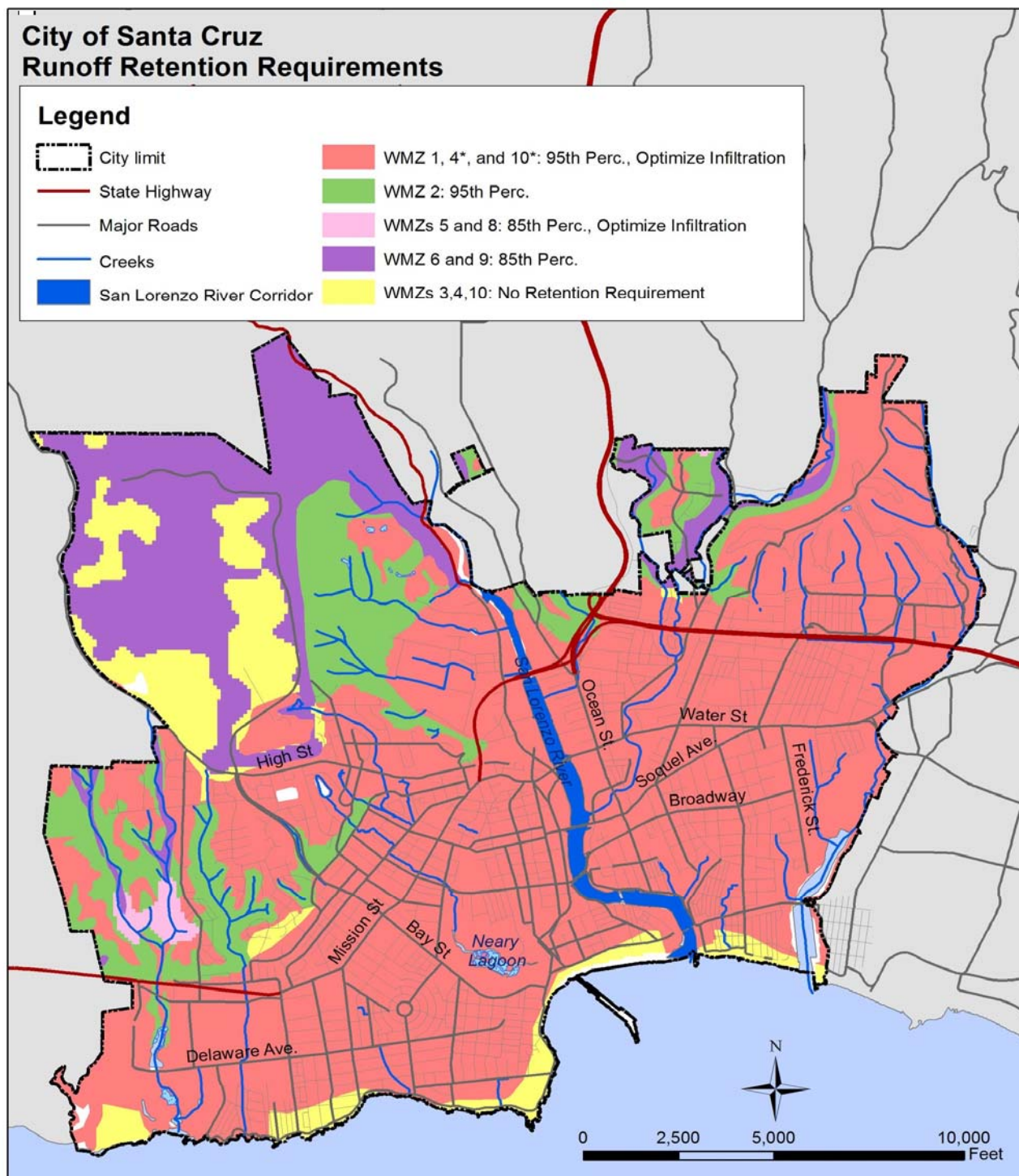
☐ WMZ 1, and portions of 4, and 10 overlying groundwater basin

☐ WMZ 2

☐ WMZ 5 and 8

☐ WMZ 6 and 9

☐ WMZ 3, 4 and 10



E - Special Circumstances - For projects subject to Tiers 3 and 4 Post-Construction BMP requirements only.

Check if special circumstance applies to the project

☐ Highly Altered Channel and Intermediate Flow Control Facility

☐ Urban Sustainability Area

F - Additional Stormwater BMP Requirements for Multi-family, Commercial and Industrial projects

Check if additional BMP requirements apply to the project

a) State Construction Activities Storm Water General Permit

☐ Construction activity resulting in land disturbance of one acre or more, or part of a larger common plan of development

b) Additional Source Control BMP requirements for specific facilities

☒ Commercial or industrial facility

☒ Parking areas

☐ Material Storage Areas

☐ Pools, spas and other water features

☐ Vehicle fueling, maintenance and wash areas

☒ Trash Storage Areas

☐ Equipment and accessory wash areas

☐ Restaurants and food processing or manufacturing facilities

☐ Interior and parking garage floor drains

☐ Miscellaneous drain or wash water

G - Complete if your project is only subject to Tier 1 Requirements - Site planning and LID design measures.

LID design measures shall be clearly marked on site plans

Check applicable boxes and provide short description of measure and location

☐ Conserve natural areas, riparian areas and wetlands

Description: _____

☐ Concentrate improvements on the least-sensitive portions of the site and minimize grading

Description: _____

☐ Direct roof runoff into cisterns or rain barrels

Description: _____

☐ Direct roof downspouts to landscaped areas or rain gardens

Description: _____

☐ Use pervious pavement (pervious concrete or asphalt, turf block, crushed aggregate, etc.)

Description: _____

☐ Disperse runoff from paved areas to adjacent pervious areas

Description: _____

Central Coast Region Stormwater Control Measure Sizing Calculator

Version: 2 / 26 / 2014

1. Project Information

Project name:	New Industrial Buildings
Project location:	Pioneer Street, Santa Cruz, CA 95060
Tier 2/Tier 3:	Tier 2 - Treatment
Design rainfall depth (in):	0.2
Total project area (ft2):	29000
Total new impervious area (ft2):	14990
Total replaced impervious in a USA (ft2):	0
Total replaced impervious not in a USA (ft2):	0
Total pervious/landscape area (ft2):	14010

2. DMA Characterization

Name	DMA Type	Area (ft2)	Surface Type	New, Replaced?	Connection
DMA 1	Drains to SCM	1585	Roof	New	SCM A
DMA #2	Drains to SCM	800	Roof	New	SCM B
DMA #3	Drains to SCM	2385	Roof	New	SCM C
DMA #4	Drains to SCM	4800	Roof	New	SCM D
DMA #5.1	Drains to SCM	960	Concrete or asphalt	New	SCM E
DMA #5.2	Drains to SCM	1305	Concrete or asphalt	New	SCM E
DMA #5.3	Drains to SCM	2600	Concrete or asphalt	New	SCM E

DMA Summary Area

Total project impervious area (ft2):	14435
New impervious area (ft2):	14435
Replaced impervious within a USA (ft2):	0
Replaced impervious not in a USA (ft2):	0
Total pervious/landscape area (ft2):	0

3. SCM Characterization

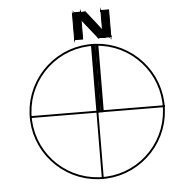
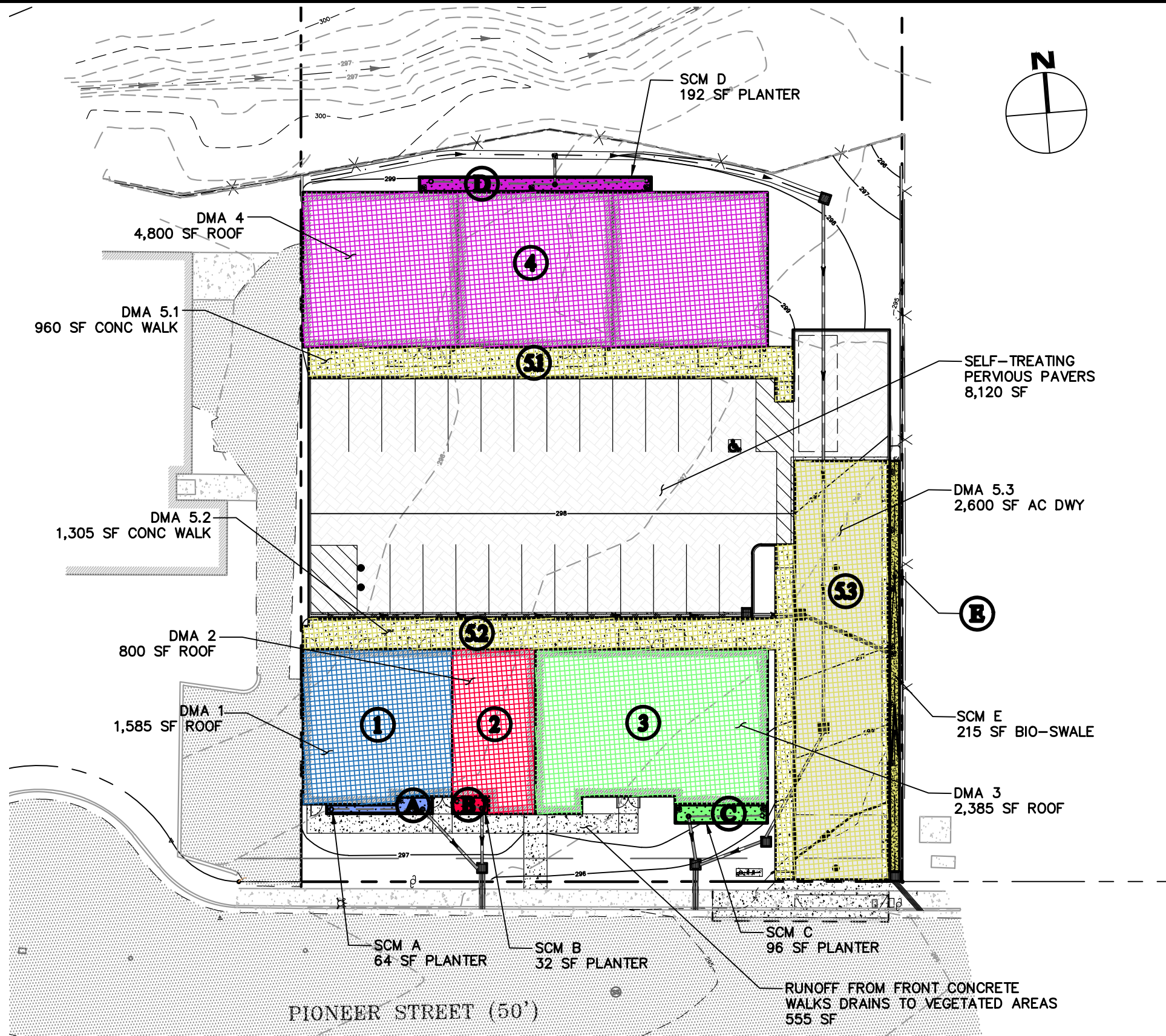
Name	SCM Type	Safety Factor	SCM Soil Type	Infilt. Rate (in/hr)	Area (ft2)
SCM A	Bioretention	1	Loam	0.4	64
SCM B	Bioretention	1	Loam	0.4	32
SCM C	Bioretention	1	Loam	0.4	96
SCM D	Bioretention	1	Loam	0.4	192
SCM E	Bioretention	1	Loam	0.4	215

4. Run SBUH Model

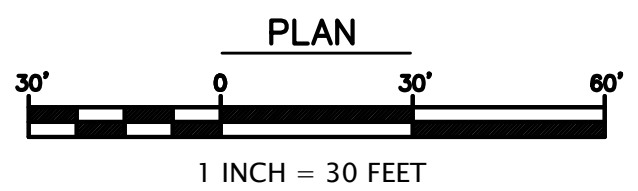
5. SCM Minimum Sizing Requirements

SCM Name	Minimum SCM Area (ft2)		
SCM A	63		
SCM B	32		
SCM C	95		
SCM D	192		
SCM E	195		

Results are out of date.
Click 'Launch Model' to update.



- NOTES:
1. ROOF DOWNSPOUTS TO DISCHARGE DIRECTLY INTO FLOW-THRU PLANTERS
 2. AC PAVEMENT DRIVEWAY TO SHEET FLOW INTO BIO-SWALE
 3. RUNOFF FROM CONCRETE WALKS TO BE CONVEYED TO BIO-SWALE



RI Engineering, Inc.

NEW INDUSTRIAL BUILDING
FOR
JOHN SWIFT
PIONEER STREET
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POST-DEVELOPMENT DRAINAGE MAP

303 Potrero St., Suite 42-202, Santa Cruz, CA 95060
831-425-3901 www.riengineering.com

project no.	19-101-1
date	DECEMBER 2019
scale	AS SHOWN
dwg name	DrainageMap1.DWG