

“E”

Stormwater Control and Maintenance Plan

STORMWATER CONTROL PLAN
FOR A REGULATED PROJECT
TAYLOR INDUSTRIAL DEVELOPMENT
CAMINO DORADO PROJECT
LOT 24, NAPA VALLEY BUSINESS PARK, UNIT 1
NAPA COUNTY, CA
APN 057-152-001

Prepared For:

Taylor Industrial Development
c/o Ronald Taylor
1607 Tice Valley Boulevard
Walnut Creek, CA 94595

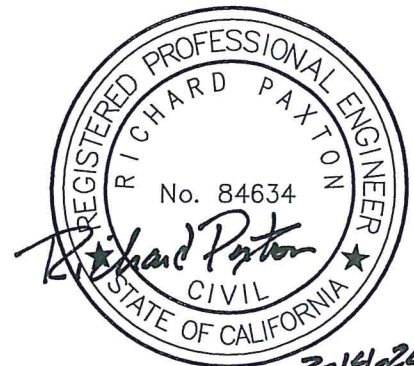
Prepared By:

Bartelt Engineering
1303 Jefferson Street, 200 B
Napa, CA 94559
(707) 258-1301

Paul N. Bartelt, P.E.
Principal Engineer



Richard Paxton, P.E.
Project Engineer



2-14-17

2-14-2017

February 2017
Job No. 16-26

BARTELT
ENGINEERING

TABLE OF CONTENTS

1. Project Data1

2. Setting1

 2.1. Project Location and Description1

 2.2. Existing Site Features and Conditions1

 2.3. Opportunities and Constraints for Stormwater Control2

3. Low Impact Development Design Strategies2

 3.1. Optimization of Site Layout2

 3.2. Use of Permeable Pavements3

 3.3. Dispersal of Runoff to Pervious Areas.....3

 3.4. Stormwater Control Measures3

4. Documentation of Drainage Design.....3

 4.1. Descriptions of Each Drainage Management Area.....3

 4.2. Tabulation and Sizing Calculations.....4

5. Source Control Measures7

 5.1. Site Activities and Potential Sources of Pollutants.....7

 5.2. Features, Materials and Methods of Construction of Source Control BMPs10

6. Stormwater Facility Maintenance.....10

 6.1. Ownership and Responsibility for Maintenance in Perpetuity.....10

 6.2. Summary of Maintenance Requirements for Each Stormwater Facility10

7. Construction Checklist.....11

8. Certifications11

LIST OF TABLES

Table 1-1: Project Data.....1
Table 4.1.2-1: Table of Drainage Management Areas.....4
Table 4.2.1-1: Information Summary for Bioretention Facility BRF-A.....4
Table 4.2.1-2: Information Summary for Bioretention Facility BRF-B4
Table 4.2.2-1: Self Treating Areas5
Table 4.2.3-1: Self-Retaining Areas.....5
Table 4.2.4-1: Areas Draining to Self-Retaining Areas5
Table 4.2.5-1: Format for Tabulating Areas Draining to Bioretention Facilities and Calculating
Minimum Bioretention Facility Size.....5
Table 4.2.5-2: Format for Tabulating Areas Draining to Bioretention Facilities and Calculating
Minimum Bioretention Facility Size.....6
Table 5.1.1-1: Source Control Table7

LIST OF ATTACHMENTS

- Stormwater Control Plan - Drainage Management Area Exhibit
- Existing Conditions - Impervious Area Exhibit
- Proposed Conditions - Impervious Area Exhibit
- Agreement for Maintenance of Post-Construction Stormwater Runoff Best Management Practices (draft form)
- Stormwater Treatment Facilities Operations and Maintenance Plan
- Custom Soil Resource Report for Napa County, California Terra Nova Industries

This Stormwater Control Plan was prepared using the Bay Area Stormwater Agencies Association (BASMAA) template dated July 11, 2014

1. PROJECT DATA

TABLE 1-1: PROJECT DATA	
Project Name/Number	Taylor Industrial Development
Application Submittal Date	February 2017
Project Location	APN 057-152-001
Project Phase No.	N/A
Project Type and Description	Industrial Building
Total Project Site Area (acres)	1.05± acres
Total New and Replaced Impervious Surface Area (Onsite)	18,000± SF
Total Pre-Project Impervious Surface Area	-0-
Total Post-Project Impervious Surface Area	18,000± SF
Percent Imperviousness Before Construction	0.0%
Percent Imperviousness After Construction	39.4%

2. SETTING

2.1. Project Location and Description

The Taylor Industrial Development project is located at the northeast corner of Camino Dorado and Camino Oruga in Napa County approximately 5 miles southeast of Napa, California. The parcel (APN 057-152-001) is 1.05± acres and located in the General Industrial Airport Compatible Combination District (GI:AC) zoning district. The proposed project will consist of one (1) phase and a disturbed area of approximately 1.05± acres. The disturbed area includes the proposed industrial building, driveways, parking areas and landscaping.

2.2. Existing Site Features and Conditions

The subject parcel is currently an undeveloped vacant parcel. Slopes on the parcel range between zero (0) and two (2) percent. According to the NRCS Soil Report, the soil types found on the parcel and corresponding Hydraulic Soil Group (HSG) are listed below:

- Haire loam (100% of parcel area, map symbol 146, HSG "D")

2.3. Opportunities and Constraints for Stormwater Control

The subject parcel is relatively flat. The site consists of a large open grass area with sloping to the southwesterly side of the subject parcel. The westerly and southerly portions of the parcel are suitable locations for stormwater infiltration/detention basins in large storm events and a bioretention facility in smaller storm events. Due to the limited area available on the parcel for new development, this project will maximize the use of pervious areas. The existing and proposed conditions can be seen on the attached Use Permit Drawings prepared by Bartelt Engineering.

3. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

3.1. Optimization of Site Layout

3.1.1. Limitation of development envelope

The proposed building would be built in the center of the parcel with pervious areas surrounding the building.

3.1.2. Preservation of natural drainage features

In general, all of the existing natural drainage features on this site will be maintained under the proposed conditions. Flows will be directed to the south and west sides of the parcel or conveyed through and allowed to percolate naturally within landscape areas. Bioswales and bioretention facilities are proposed to slow down and retain water flows onsite. The locations of the bioretention facilities are proposed at naturally low areas near the southwestern end of the parcel where water already drains to during storm events. If the capacity of the bioretention facility is exceeded during 10-year and 100-year storm events, stormwater runoff will enter the existing storm drain system located in Camino Oruga.

3.1.3. Setbacks from creeks, wetlands and riparian habitats

There are no creeks, wetlands and/or riparian habitats identified on the subject parcel.

3.1.4. Minimization of imperviousness

Impervious area will increase as a result of the proposed project. Although the impervious area will increase, areas that are typically paved (such as drive aisles and parking areas) will utilize a permeable paver to the maximum extent possible.

3.1.5. Use of drainage as a design element

There are multiple elements proposed for this project that are designed to reduce stormwater runoff and promote infiltration. Permeable pavers or another similar type of material will be utilized in parking lots and on drive aisles to minimize runoff. Bioswales and bioretention facilities/infiltration basins will be utilized with the proposed project to promote infiltration and slow down water flows. Any water that overtops the bioretention facilities/infiltration basins will enter the existing storm drains that penetrate the earth berm and empty into the storm drain system located in Camino Oruga.

3.2. Use of Permeable Pavements

The extent of areas with permeable pavers are shown on the Use Permit Drawings prepared by Bartelt Engineering.

3.3. Dispersal of Runoff to Pervious Areas

All runoff is dispersed to pervious areas. These areas include landscaped areas, bioswales and infiltration basins.

3.4. Stormwater Control Measures

This project will utilize a combination of self-retaining areas and bioretention facilities. See Section 4.1.1.

4. DOCUMENTATION OF DRAINAGE DESIGN

4.1. Descriptions of Each Drainage Management Area

4.1.1. Drainage Management Area Descriptions

The project will consist of numerous Drainage Management Areas (DMA) that include Self-Retaining Areas, Areas Draining to Self-Retaining Areas, Self-Treating Areas and Areas Draining to Bioretention Facilities. Each DMA type proposed for this project is described below and the corresponding area(s) can be seen in Table 4.1.2-1.

Self-Retaining Areas on this site consist of all areas starting with the prefix "SRA". The corresponding areas for these DMAs can be seen in Table 4.1.1. Self-Retaining Areas include planter areas near the winery buildings and landscaped areas with raised drop inlets.

Areas Draining to Self-Retaining Areas on this site consist of all areas starting with the prefix "DSRA". These areas consist of roofs, permeable pavers and disturbed landscape areas that do not drain to a bioretention facility.

Self-Treating Areas on this site consist of all areas starting with the prefix "STA". These areas consist of landscaped or turf areas that do not drain to a Bioretention Facility, but rather drain directly offsite or to the storm drain system.

Areas Draining to Bioretention Facilities on this site consist of all areas starting with the prefix "DBRF". These areas consist of mostly roofs, permeable pavers and a few landscaped areas directly adjacent to the corresponding bioretention facility. There are two (2) bioretention facilities on the site, BRF-A and BRF-B.

4.1.2. Table of Drainage Management Areas

The following table provides the name, area, DMA type and surface type of every DMA for this project.

TABLE 4.1.2-1: TABLE OF DRAINAGE MANAGEMENT AREAS			
DMA Name	Area (square feet)	DMA Type	Surface Type
SRA-A	4,315	Self Retaining Area (SRA)	Bricks/Pavers
SRA-B	8,608	Self Retaining Area (SRA)	Bricks/Pavers
DSRA-B1	197	Areas Draining to SRA	Paving
DSRA-B2	7,389	Areas Draining to SRA	Roof
BRF-A	1,418	Bioretention Facility	Landscape
BRF-B	565	Bioretention Facility	Landscape
DBRF-A1	1,871	Areas Draining to Bio	Landscape
DBRF-A1.1	2,532	Areas Draining to Bio	Landscape
DBRF-A1.2	7,881	Areas Draining to Bio	Roof/Paving
DBRF-A1.3	1,021	Areas Draining to Bio	Roof/Paving
DBRF-A1.4	2,037	Areas Draining to Bio	Landscape
DBRF-B1	883	Areas Draining to Bio	Landscape
DBRF-B1.1	1,319	Areas Draining to Bio	Landscape
DBRF-B1.2	1,637	Areas Draining to Bio	Landscape
DBRF-B1.3	242	Areas Draining to Bio	Roof/Paving
STA-A	301	Self Treating Areas (STA)	Landscape

4.2. Tabulation and Sizing Calculations

4.2.1. Information Summary for Bioretention Facility Design

TABLE 4.2.1-1: INFORMATION SUMMARY FOR BIORETENTION FACILITY BRF-A	
Total Project Area (Square Feet)	1,418±
DBRF-A1	1,871
DBRF-A1.1	2,532
DBRF-A1.2	7,881
DBRF-A1.3	1,021
DBRF-A1.4	2,037

TABLE 4.2.1-2: INFORMATION SUMMARY FOR BIORETENTION FACILITY BRF-B	
Total Project Area (Square Feet)	565±
DBRF-B1	883
DBRF-B1.1	1,319
DBRF-B1.2	1,637
DBRF-B1.3	242

4.2.2. Self-Treating Areas

TABLE 4.2.2-1: SELF TREATING AREAS	
DMA Name	Area (square feet)
STA-A	301

4.2.3. Self-Retaining Areas

TABLE 4.2.3-1: SELF-RETAINING AREAS	
DMA Name	Area (square feet)
SRA-A	4,315
SRA-B	8,608

4.2.4. Areas Draining to Self-Retaining Areas

TABLE 4.2.4-1: AREAS DRAINING TO SELF-RETAINING AREAS						
DMA	Area (square feet)	Post-project surface type	Runoff factor	Receiving self-retaining DMAs	Receiving self-retaining DMA Area (square feet)	Ratio of Impervious: Pervious
DSRA-B1	197	Paving	1.0	SRA-B	8,608	0.02
DSRA-B2	7,389	Roof	1.0	SRA-B	8,608	0.86

4.2.5. Areas Draining to Bioretention Facilities

TABLE 4.2.5-1: FORMAT FOR TABULATING AREAS DRAINING TO BIORETENTION FACILITIES AND CALCULATING MINIMUM BIORETENTION FACILITY SIZE							
DMA	DMA Area (square feet)	Post-project surface type	DMA Runoff factor	DMA Area x runoff factor	Bioretention Facility #1 (BRF-A)		
					Taylor Industrial Development		
					IMP Sizing Factor	Required IMP Facility Size	Provided IMP Facility Size
DBRF-A1	1,871	Landscape	0.1	187.1			
DBRF-A1.1	2,532	Landscape	0.1	253.2			
DBRF-A1.2	7,881	Roof/Paving	1.0	7,881			
DBRF-A1.3	1,021	Roof/Paving	1.0	1,021			
DBRF-A1.4	2,037	Landscape	0.1	203.7			
				-			
Total (square feet)				9,546	0.04	381.8	1,418

TABLE 4.2.5-2: FORMAT FOR TABULATING AREAS DRAINING TO BIORETENTION FACILITIES AND CALCULATING MINIMUM BIORETENTION FACILITY SIZE

DMA	DMA Area (square feet)	Post-project surface type	DMA Runoff factor	DMA Area x runoff factor	Bioretention Facility #2 (BRF-B)		
					Terra Nova Industries		
DBRF-B1	883	Landscape	0.1	88.3	IMP Sizing Factor	Required IMP Facility Size	Provided IMP Facility Size
DBRF-B1.1	1,319	Landscape	0.1	131.9			
DBRF-B1.2	1,637	Landscape	0.1	163.9			
DBRF-B1.3	242	Roof/Paving	1.0	242.0			
Total (square feet)				626.1	0.04	25	565

5. SOURCE CONTROL MEASURES

5.1. Site Activities and Potential Sources of Pollutants

5.1.1. Source Control Table

TABLE 5.1.1-1: SOURCE CONTROL TABLE		
Potential source of runoff pollutants	Permanent source control BMPs	Operational source control BMPs
Onsite storm drain inlets (unauthorized non-stormwater discharges and accidental spills or leaks)	<ul style="list-style-type: none"> All inlets marked with the words "No Dumping! Flows to Bay" or similar. 	<ul style="list-style-type: none"> <input type="checkbox"/> Maintain and periodically repaint or replace inlet markings <input type="checkbox"/> Provide stormwater pollution prevention information to new site owners, lessees or operators <input type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.casqa.org/resources/bump-handbooks <input type="checkbox"/> Include the following in lease agreements: "Tenants shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."
Interior floor drain and elevator shaft sump pumps	<ul style="list-style-type: none"> Interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer. 	<ul style="list-style-type: none"> <input type="checkbox"/> Inspect and maintain drains to prevent blockages and overflow.
Need for future indoor & structural pest control	<ul style="list-style-type: none"> Note building design features that discourage entry of pests. 	<ul style="list-style-type: none"> <input type="checkbox"/> Provide Integrated Pest Management information to owners, lessees and operators.
Landscape/Outdoor pesticide use/building & grounds maintenance	<p>Final landscape plans will accomplish all of the following.</p> <ul style="list-style-type: none"> Preserve existing native trees, shrubs and ground cover to maximum extent possible. Landscaping has been designed 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. Landscaped areas are used to retain or detain 	<ul style="list-style-type: none"> <input type="checkbox"/> Maintain landscaping using minimum or no pesticides. <input type="checkbox"/> See applicable operational BMPs in Fact Sheets SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at: www.casqa.org/resources/bmp-handbooks <input type="checkbox"/> Provide IPM information to new owners, lessees and operators.

	<p>stormwater. Plants within these areas will be tolerant of saturated soil conditions.</p> <ul style="list-style-type: none"> • The use of pest-resistant plants has been considered, especially adjacent to hardscape. • To insure successful establishment, plants will be selected that are appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency and plant interactions. 	
Pools, spas, ponds, decorative fountains & other water features	<ul style="list-style-type: none"> • Fountains and water feature connections will be made according to local requirements. 	<input type="checkbox"/> See applicable operational BMPs in Fact Sheet SC-72, "Fountain and Pool Maintenance," in the CASQA Stormwater Quality Handbooks at www.casqa.org/resources/bmp-handbooks The sanitary sewer operator must be notified and a clean out identified when pools are to be drained to the sanitary sewer.
Food service	<ul style="list-style-type: none"> • Describe the location and features of the designated cleaning area. • Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated. 	State maintenance schedule for grease interceptor.
Refuse areas	<ul style="list-style-type: none"> • See plans for the location and features. • State how site refuse will be handled and provide supporting detail to what is shown on plans. • Signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar. 	<input type="checkbox"/> State how the following will be implemented; Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquids or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available onsite. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.casqa.org/resources/bmp-handbooks

Industrial processes	<ul style="list-style-type: none"> • All process activities to be performed indoors. No processes to drain to exterior or to storm drain systems. 	<input type="checkbox"/> See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.casqa.org/resources/bmp-handbooks
Fire sprinkler test water	<ul style="list-style-type: none"> • Fire sprinkler water will be disposed of in vineyard. 	<input type="checkbox"/> See note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.casqa.org/resources/bmp-handbooks
Condensate drain lines Roofing, gutters & trim	<ul style="list-style-type: none"> • Condensate drain lines discharge to landscaped areas since the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. • Any drainage sumps onsite shall feature a sediment sump to reduce the quantity of sediment in pumped water. • Include controls for other sources as specified by local reviewer. 	<p>If architectural copper is used, implement the following BMPs for management of rinse water during installation:</p> <ul style="list-style-type: none"> <input type="checkbox"/> If possible, purchase copper materials that have been pre-patinated at the factory. <input type="checkbox"/> If patinated is done onsite, prevent rinse water from entering storm drains by discharging to landscaping or by collecting in a tank and hauling offsite. <input type="checkbox"/> Consider coating the copper materials with an impervious coating that prevents further corrosion and runoff. <p>Implement the following BMPs during routine maintenance:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Prevent rinse water from entering storm drains by discharging to landscaping or by collecting in a tank and hauling offsite.
Plazas, sidewalks & parking lots		<input type="checkbox"/> 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 wash water containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

5.2. Features, Materials and Methods of Construction of Source Control BMPs

Several features were incorporated into the design of the project to minimize the potential for stormwater pollution and are listed below. Please refer to the Use Permit Drawings prepared by Bartelt Engineering for detailed materials and methods of construction of source control BMPs.

6. STORMWATER FACILITY MAINTENANCE

6.1. Ownership and Responsibility for Maintenance in Perpetuity

The Owner agrees to implement the stormwater control strategy as outlined in this document and as shown in the plans prepared by Bartelt Engineering. The Owner accepts responsibility for the installation, operation and maintenance of the stormwater treatment and flow-control facilities noted in this Stormwater Control Plan. The Owner agrees to undertake this responsibility until such time as the responsibility is formally transferred to a subsequent owner.

6.2. Summary of Maintenance Requirements for Each Stormwater Facility

The following activities shall 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 inches). However, ensure the underlying soil surface beneath the mulch layer is a minimum 6 inches 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, the entire surface becomes 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.

Landscaping 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.

Sidewalks will be swept clean of debris regularly.

7. CONSTRUCTION CHECKLIST

Please refer to the Construction General Permit Stormwater Pollution Prevention Plan (SWPPP) prepared by Bartelt Engineering for all construction and post-construction BMPs. An Industrial General Permit No Exposure Certificate (NEC) will be filed with the State Water Resources Control Board.

8. 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.

STORMWATER TREATMENT FACILITIES
OPERATION AND MAINTENANCE PLAN
FOR TAYLOR INDUSTRIAL DEVELOPMENT
CAMINO DORADO PROJECT
LOT 24, NAPA VALLEY BUSINESS PARK, UNIT 1
NAPA COUNTY, CA
APN 057-152-001

Prepared For:

Taylor Industrial Development
c/o Ronald Taylor
1607 Tice Valley Boulevard
Walnut Creek, CA 94595

Prepared By:

Bartelt Engineering
1303 Jefferson Street, 200 B
Napa, CA 94559
(707) 258-1301

Paul N. Bartelt, P.E.
Principal Engineer

Richard Paxton, P.E.
Project Engineer



February 2017
Job No. 16-26

BARTELT
ENGINEERING

Table of Contents

1. Introduction	1
1.1 Site Description	1
2. Designation of Responsible Individuals (to be completed in Final O&M Plan)	1
2.1 Primary Contacts	1
2.2 Off-Hours or Emergency Contact	1
2.3 Corporate Officer (authorized to execute agreements with the City, Town, or County)	1
2.4 Initial Training of Responsible Individuals	1
3. Facilities to be Maintained	2
3.1 Facility Descriptions	2
3.1.1 Bioretention Facility (A26)	2
3.2 Facility Construction Details	2
4. Maintenance Activities	2
4.1 General Maintenance Rules	2
4.2 Maintenance Schedule	3
4.2.1 Routine Activities	3
4.2.2 Following Significant Rain Events	3
4.2.3 Prior to the Start of the Rainy Season	3
4.2.4 Annually during Winter	3

Attachments

Stormwater Control Plan Exhibit
As-Built Drawings (in Final O&M Plan)

1. INTRODUCTION

1.1 Site Description

The Taylor Industrial Development project is located at the northeast corner of Camino Dorado and Camino Oruga in Napa County approximately 5 miles southeast of Napa, California. The parcel (APN 057-152-001) is 1.05± acres and located in the General Industrial Airport Compatible Combination District (GI:AC) zoning district. The proposed project will consist of one (1) phase and a disturbed area of approximately 1.05± acres. The disturbed area includes the proposed industrial building, driveways, parking areas and landscaping.

Stormwater treatment is provided by bioretention facilities (BRF-A & BRF-B).

2. DESIGNATION OF RESPONSIBLE INDIVIDUALS

2.1 Primary Contacts

Primary Contact 1 Ronald Taylor
Email ront@terranoa-ind.com
Phone # (510) 719-6066

Primary Contact 2
Email
Phone #

2.2 Off-Hours or Emergency Contact

Off-Hours or Emergency Contact
ront@terranoa-ind.com
(510) 719-6066

2.3 Corporate Officer (authorized to execute agreements with the City, Town, or County)

Ronald Taylor
ront@terranoa-ind.com
(510) 719-6066

2.4 Initial Training of Responsible Individuals

Following completion of construction, the bioretention facilities will be maintained by the contractor for one year, except for routine policing for trash, which will be done by the owner's and/or lessee's personnel. During this 1-year period, the Owner's landscape maintenance crew will coordinate to meet with the contractor's personnel on-site during maintenance. At these times, the contractor's personnel will demonstrate proper maintenance procedures.

3. FACILITIES TO BE MAINTAINED

3.1 Facility Descriptions

There are two bioretention facilities onsite with the following features:

- Each layer built relatively flat and level.
- 12 inches of Class 2 permeable, Caltrans specification 68-2.02F(3)
- 18 inches sand/compost mix (60% to 70% sand & 30% to 40% compost)
- Plantings
- Irrigation system with drip emitters and “smart” irrigation controllers
- Sign identifying the facility as a stormwater treatment facility.

3.1.1 Bioretention Facilities (BRF-A & BRF-B)

See the attached Stormwater Control Plan – Drainage Management Area Exhibit. The bioretention facility receives drainage from the Drainage Management Areas (DMAs) listed in Tables 4.2.1-1 & 4.2.1-2 of the Taylor Industrial Development Camino Dorado Project Stormwater Control Plan for a Regulated Project, which includes the roofs, pavement and landscape, totaling 42,000± square feet (SF) of multi-surface area. The bioretention facilities resides within the stormwater infiltration basins designed to attenuate stormwater runoff from the 10-year and 100-year storm events. Inflow is via sheet flow from the pavement, open-channel drainage swales and storm drains. There are facility underdrains to drain treated stormwater.

3.2 Facility Construction Details

Use Permit Drawings are attached.

4. MAINTENANCE ACTIVITIES

4.1 General Maintenance Rules

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. The top of soil surface will be maintained at or near the design elevation throughout. Irrigation systems will be maintained to conserve water while maintaining plant health.

Although it is unlikely to be needed; if plants are not thriving, compost tea may be applied at a recommended rate of 5 gallons mixed with 15 gallons of water per acre, up to once per year between March and June. Compost tea will not be applied when temperatures are below 50°F or above 90°F or when rain is forecast within the next 48 hours.

The following may be applied for pest control if needed:

- Beneficial nematodes
- Safer® products
- Neem oil

4.2 Maintenance Schedule

The bioretention facility will be maintained on the following schedule at a minimum.

4.2.1 Routine Activities

The facility will be examined daily for visible trash during regular policing of the site and trash will be removed. Any graffiti, vandalism or other damage will be noted and addressed within 48 hours.

The planted areas will be weeded by hand approximately monthly. At this time plants will be inspected for health and the irrigation system will be turned on manually and checked for any leaks or broken lines, misdirected spray patterns etc. Any dead plants will be replaced.

4.2.2 Following Significant Rain Events

A significant rain event will be considered to be 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 there is no ponding.

- Inlets will be inspected and any accumulations of trash or debris will be removed.
- The surface of the mulch layer will be inspected for movement of material. Mulch will be replaced and raked smooth if needed.

4.2.3 Prior to the Start of the Rainy Season

In October or each year, facility inlets and outlets will be inspected to confirm there is no accumulation of debris that would block flow. 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.










4.2.4 Annually during Winter

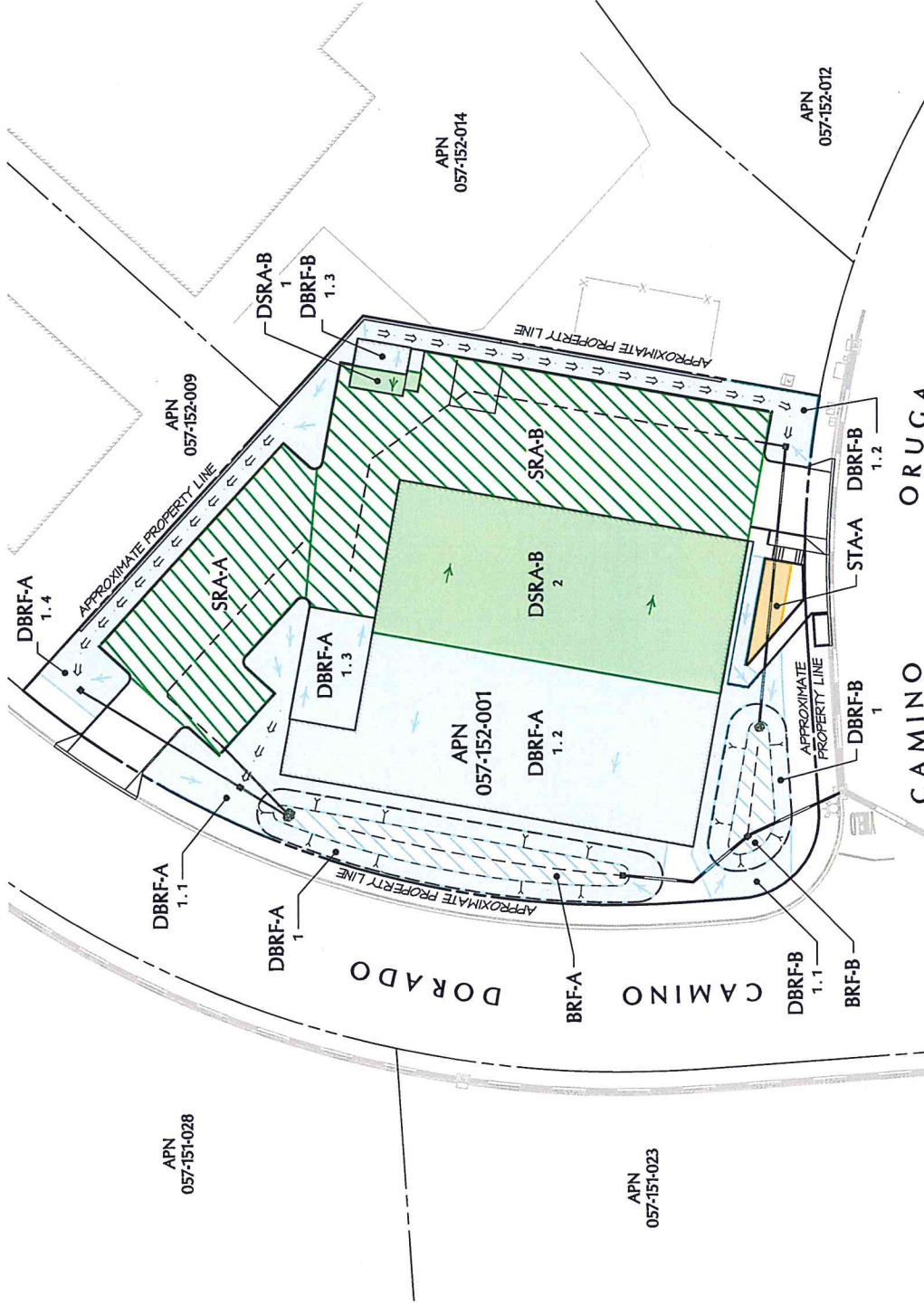
Once, in December – February of each year, vegetation will be cut back as needed, debris removed and plants and mulch replaced as needed.



SCALE: 1" = 40'

LEGEND:

-  BIORETENTION FACILITY (BRF)
-  AREA DRAINING TO BRF (DBRF)
-  SELF-RETAINING AREA (SRA)
-  AREA DRAINING TO SRA (DSRA)
-  SELF-TREATING AREA (STA)
-  DIRECTION OF STORMWATER FLOW
-  OPEN CHANNEL FLOW
-  EXISTING STORM DRAIN
-  PROPOSED STORM DRAIN
-  PROPOSED SUBDRAIN
-  PROPOSED STORM DRAIN DROP INLET



BARTELT
ENGINEERING
 CIVIL ENGINEERING - LAND PLANNING
 1303 Jefferson Street, 200 B, Napa, CA 94559
 www.barttelengineering.com
 Telephone: 707-258-1301

© COPYRIGHT 2017. ALL RIGHTS RESERVED.

**STORMWATER CONTROL PLAN -
 DRAINAGE MANAGEMENT AREA EXHIBIT**

SCALE: 1" = 40'

Terra Nova Industrial Building
 Intersection of:
 Camino Dorado & Camino Oruga
 Napa, CA 94558
 APN 057-152-001
 Job No. 16-26
 February 2017
 Sheet 1 of 1