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STORMWATER CONTROL PLAN FOR A REGULATED PROJECT

Planned Tench Winery
7631 Silverado Trail, Napa, California

Date: July 22, 2015
Project No.: 8091.01

Prepared For: Tench Winery, LLC

Prepared By: Rebecca L Dower

Attachments

Attachment 1:	Exhibit 1: Vicinity Map
	Exhibit 2: Site Plan
	Exhibit 3: Drainage Management Areas
Attachment 2:	Stormwater Control Plan Checklist
Attachment 3:	Bioretention Facility Construction Inspection Checklist

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I. PROJECT DATA

The County of Napa Engineering Division has adopted the Bay Area Stormwater Management Agencies Association (BASMAA) Post-Construction Manual as the compliance document for the handling of post-construction stormwater runoff for applicable development projects. As required by the BASMAA Post-Construction Manual, projects, other than single-family homes, that create or replace 5,000 square feet (sf) or more of impervious surface must have a Stormwater Control Plan for Regulated Projects (SCP). The SCP describes the post-construction Best Management Practices (BMPs) to be implemented in order to control stormwater runoff from the site. Post-construction BMPs include a combination of site design, source control, and treatment control measures, depending on the activities planned at the project site. This SCP outlines the various post-construction BMPs to be implemented at the proposed Tench Winery project site. This SCP follows the template provided within the BASMAA Post-Construction Manual.

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Table 1 below includes a summary of the basic project information.

Table 1. Project Data Form

Project Name	Tench Winery
Application Submittal Date	July 20, 2015
Project Location	7631 Silverado Trail, Napa, California APN 031-070-006
Project Phase No.	N/A
Project Type and Description	New winery facility capable of producing approximately 42,840 gallons of wine annually. Winery is proposed to include a new, 6,635 square foot production building with a fermentation room, indoor crush pad and associated floor drains, lab, storage, bathroom, and break room. The second floor building area will be devoted to offices and will total 398 square feet. The new winery facility will also include 4 underground caves.
Total Project Site Area (acres)	1.75 acres
Total New and Replaced Impervious Surface Area	42,406 sf
Total Pre-Project Impervious Surface Area	11,768 sf
Total Post-Project Impervious Surface Area	54,174 sf

II. SETTINGS

II.1 Project Location and Description

Tench Winery, LLC seeks to build and operate a winery consisting of a new winery facility capable of producing approximately 42,840 gallons of wine annually. The winery is proposed to be built on an approximate 60.86-acre parcel, known as Assessor's Parcel Number 031-070-006, of which approximately 1.75 acres will be disturbed for the winery development project (see Exhibit 1: Vicinity Map). The 1.75 acre disturbed portion of the site is hereafter referred to as the "project site." The winery is proposed to be constructed on the south-eastern side of the hill, north of the existing residence on-site and adjacent to the existing driveway. The proposed new winery production building with a total indoor floor area of about 6,600 square feet will include a fermentation room, indoor crush pad, lab, storage, bathroom, and break room. The second floor of the building will be devoted to offices and will total 398 square feet. The new winery facility will also include two underground cave spurs.

II.2 Existing Site Features and Conditions

The parcel is currently occupied by a single-family residence constructed near the base of a wooded hillside to the immediate south of the proposed winery building. The residence and undeveloped hillside are surrounded by approximately 42 acres of vineyards which have been in production since the early 1970s. Exhibit 2: Site Plan illustrates the above-mentioned improvements.

An approximately 10-foot wide driveway provides access to the residence from Silverado Trail. The parcel is generally flat, with the exception of the wooded hillside on the northern property line where the residence is currently located and where the winery is proposed to be located. No development is proposed in the existing vineyard areas.

An onsite well, with a reported capacity of 600 gallons per minute (gpm), provides irrigation water for the vineyards and will provide water to the new winery facility. A second shallow, lower-capacity onsite well is presently used to provide domestic and landscape water to the residence. An onsite sewage disposal system and leach field will be developed to process and discharge waste water. Connection will not be made to a sanitary sewer system for waste water discharge.

An existing pond is located to the south of the project site, within the vineyards. Catch basins located on either side of the existing road, near the site entrance, are connected by a culvert underneath the road. These basins, currently, collect stormwater runoff and direct the runoff, via underground storm drain piping, to the existing pond.

No creeks, wetlands, or riparian areas exist on site. No significant cultural resources are reported to exist on site.

II.3 Opportunities and Constraints for Stormwater Control

Approximately 23,137 combined square feet of landscaping, bioretention, and native vegetation replacement is proposed within the project site. Of this area, less than 1,547 square feet of landscaping is proposed. Plants used within open space and landscaping areas will be drought-tolerant and non-invasive,

while plants to be placed within the bioretention areas have been selected based on their ability to tolerate both saturated as well as non-irrigated conditions. A landscape plan (Sheet A1.3) has been developed for the site and is enclosed as part of the preliminary design plan set (not enclosed as part of this SCP). The landscape plan includes additional information regarding the proposed plant species to be planted on site.

Existing vegetation within the footprint of the proposed winery and associated infrastructure will be removed to facilitate construction. It is anticipated that between 50 and 70 trees, consisting of Coast Live Oak, California Black Oak, and Blue Oak, that are greater than 6 inches at diameter breast height (dbh) will need to be removed. To offset the impacts from the proposed oak tree removal, a combination of replacement and preservation of the remaining habitat and replanting is proposed. The specifics around the replacement and preservation are still to be determined as of the date of preparation of this SCP. Tree replacement provides the opportunity for trees to naturally intercept rain water on their leaves and branches, allowing rain water to evaporate or run down the branches and trunks of the tree where it readily infiltrates into the soil. Tree roots also increase the infiltration ability of a soil, again providing an opportunity to control stormwater runoff.

Infrastructure is in place to convey stormwater from the existing catch basins and culvert (see Exhibit 2) to the pond. The pond presents an opportunity for being an overflow discharge point for stormwater runoff generated at the project site. Use of the pond would preclude the need to discharge overflow stormwater offsite.

The steep, bedrock-laden hillside, located to the northwest of the proposed winery building, acts as a constraint on the site in terms of available area to place the building and/or source control measures. The proposed bioretention facilities must be located in a generally flat area underlain by soils with a moderate to high infiltration rate. Due to the large presence of loamy sands and sandy loams discovered through soil borings, it is ascertained that the soils on–site, aside from the bedrock-underlain hillside, fall into hydrologic soil group B. Hydrologic soil group B materials provide moderately-high infiltration rates, thus presenting an opportunity for bioretention placement in areas below the hillside.

III. LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

III.1 Optimization of Site Layout

The features described in the following subsections were considered during the conceptual site design in order to optimize the layout of the project area.

III.1.1 Limitation of Development Envelope

Setbacks from Silverado Trail, the northern property line, and the location of the existing residence and vineyards define the development envelope. Wastewater disposal areas have been included within the development envelope but excluded from building and parking lot development. No other setbacks or environmental constraints have defined the developable envelope.

III.1.2 Preservation of Natural Drainage Features

Under the natural conditions, runoff from the site drains primarily across the site to the southwest. Areas immediately adjacent to the project site are comprised of established vineyards which currently accept surface runoff, if any, from the undeveloped project site. Preliminary site design includes measures to maintain the existing drainage patterns through allowing the design grades on the site to closely mimic the naturally southwest sloping topography. The existing catch basin, culvert, and storm drain infrastructure which discharges into the existing pond will be maintained and used to capture the overflow runoff from the project site.

III.1.3 Setbacks from Creeks, Wetlands, and Riparian Habitats

No creeks, wetlands, or riparian habitats have been located within the project site. As such, the site layout is not affected by setbacks from creeks, wetlands, or riparian areas.

III.1.4 Minimization of Imperviousness

Impervious surface area has been minimized to the extent feasible through incorporating the following features:

- Designing roads to the minimum standard width of approximately 20 feet.
- Placing new buildings and other improvements on site such that the entire length of existing road can be utilized instead of constructing an entirely new road for site access.
- Utilizing a multi-story design for the winery building which minimizes impervious footprint.

III.1.5 Use of Drainage as a Design Element

Landscaped bioretention areas are planned to be constructed adjacent to the new paved surfaces. These bioretention areas will also function as an aesthetic design element. Native, non-irrigated landscaped areas have also been placed between the impervious areas on site to intercept runoff and provide disconnection between these impervious areas to improve the visual appeal of the site. Oak replanting areas in the landscape strips adjacent to the access road and wine caves further exemplify the use of drainage features as a design element.

III.2 Use of Permeable Pavements

The use of permeable pavements is not included in the site design at this time. However, a new gravel access road to the back of the winery building is proposed in place of constructing a new asphalt paved roadway.

III.3 Dispersal of Runoff to Pervious Areas

Significant amounts of landscaped and open space areas are provided on the site plan (Exhibit 2). Large impervious surface areas are limited while landscaped areas adjacent to the roadways, parking lot, and building have been maximized. In order to disperse stormwater runoff to the pervious areas on site, the following design features have been incorporated:

- Runoff from paved surfaces directed into landscaped areas/bioretention areas for infiltration.
- Discharge of roof drain downspouts directed into landscaped areas/bioretention areas.
- Careful selection of landscaping material to ensure selected vegetation is appropriate to the soils, slopes, and climate of the site.

III.4 Stormwater Control Measures

Stormwater control measures planned for the site generally include the following:

- Maximization of pervious, self-treating, or self-retaining areas on site.
- Minimization and disconnection of large impervious areas.
- Development of bioretention areas to detain and infiltrate stormwater runoff from impervious surfaces.
- Tree and vegetation replanting to encourage runoff interception and infiltration.

IV. DOCUMENTATION OF DRAINAGE DESIGN

IV.1 Descriptions of each Drainage Management Area

Drainage management areas (DMAs) are portions of a project site that drain to a common point. Each DMA must contain only one type of surface (e.g. either landscaped or impervious).

Generally, there are four types of DMAs, which include the following:

- Self-treating areas
- Self-retaining areas
- Areas draining to self-retaining areas
- Areas draining to a bioretention area

Self-treating areas are usually landscaped or vegetated areas that do not drain to bioretention facilities. Rather, self-treating areas drain directly off-site or to a storm drain system.

Self-retaining areas are usually landscaped or vegetated areas that do not drain directly off-site or to a storm drain system. Rather, these areas are typically bermed or depressed such that the first inch of rainfall can be retained within this area.

Runoff from impervious areas, such as roofs and parking lots, can be managed by routing it to a self-retaining area, thereby making the impervious area an **area draining to a self-retaining area**. Self-retaining areas that also accept runoff from impervious areas must be ensured to be adequate to handle the additional run-on.

Impervious areas may also be directed to drain into a bioretion facility, known as **areas draining to a bioretention area.** Multiple DMAs may be able to drain to the same bioretention facility.

The project includes the following types of DMAs:

- Self-treating areas
- Self-retaining areas
- Areas draining to a bioretention area

IV.1.1 Table of Drainage Management Areas

Table 2 below summarizes the drainage management areas delineated on site and includes a description of each DMA type, prevailing surface type, and size.

Table 2. Summary of Drainage Management Areas

DMA Name	DMA Type	Surface Type	DMA Area (sf)
DMA 01	Area Draining to Bioretention	Gravel	5,763
DMA 02	Area Draining to Bioretention	Rock-Faced Soil	2,103
DMA 03	Area Draining to Bioretention	Pavement	6,358
DMA 04	Area Draining to Bioretention	Pavement	19,663
DMA 05	Self-Retaining Area	Native Landscaping (pervious)	17,643
DMA 06	Self-Treating Area	Native Landscaping (pervious)	4,639

DMA Name	DMA Type	Surface Type	DMA Area (sf)
DMA 07	Area Draining to Bioretention	Pavement (impervious)	3,402
DMA 08	Area Draining to Bioretention	Pavement (impervious)	4,783
DMA 09	Area Draining to Bioretention	Pavement (impervious)	2,664
DMA 10	Area Draining to Bioretention	Pavement (impervious)	6,512

IV.1.2 Drainage Management Area Descriptions

The project site has been divided into ten (10) drainage management areas with seven (7) bioretention facilities provided to intercept runoff from the impervious DMAs.

DMA 01, totaling 5,763 square feet (sf), is a gravel road surface. DMA 01 drains to a Biorention Facility 2.

DMA 02 is 2,103 sf and is a rock-faced soil surface. DMA 02 drains via sheet flow to Bioretention Facility 01.

DMA 03 is 6,358 sf and is a paved surface that drains via sheet flow to Bioretention Facility 01.

DMA 04, totaling 19,663 sf, encompasses the paved parking lot located generally west of the winery building. This area drains to Bioretention Facility 03, which runs parallel to the length of the roadway. Runoff from DMA 04 will be allowed to sheet flow across the pavement into Bioretention Facility 03.

DMA 05, totaling 17,643 sf, is comprised of Native Landscaping. This DMA is a self-retaining area.

DMA 06 is a 4,639 sf area with native landscaping located parallel to the access road to the winery and is a self-treating area. However, DMA 06 is sloped to drain to towards Bioretention Facility 03 in order to encourage runoff from DMA 04 to flow across DMA 06 and into Bioretention Facility 03.

DMA 07, totaling 3,402 sf, encompasses the paved roadway near the site entrance. This area drains to Bioretention Facility 04, which runs parallel to the length of the roadway. Runoff from DMA 07 will be allowed to sheet flow across the pavement into Bioretention Facility 04.

DMA 08, which is 4,783 sf in size, is a section of the paved roadway that is draining to Bioretention Facility 05.

DMA 09 is a 2,664 sf paved shoulder along Silverado Trail. This new pavement will drain into Bioretention Facility 06.

DMA 10, totaling 6,512 sf, is a paved shoulder along Silverado Trail. This new pavement will drain into Bioretention Facility 07.

IV.2 Tabulation and Sizing Calculations

IV.2.1 Information Summary for Bioretention Facility Design

A summary of the bioretention facilities planned for the site is included in Table 3 below. Sizing of these bioretention areas is discussed further below.

Table 3. Summary of Bioretention Facilities

Bioretention Facility Name	Area (sf)
Bioretention Facility 01	430
Bioretention Facility 02	1,417
Bioretention Facility 03	1,012
Bioretention Facility 04	359
Bioretention Facility 05	468
Bioretention Facility 06	1,121
Bioretention Facility 07	2,611

IV.2.2 Self-Treating Areas

A summary of the self-treating drainage management areas is included in Table 4 below.

Table 4. Summary of Self-Treating DMAs

DMA Name	Area (sf)
DMA 06	4,639

IV.2.3 Self-Retaining Areas

A summary of the self-retaining drainage management areas is included in Table 5 below.

Table 5. Summary of Self-Retaining DMAs

DMA Name	Area (sf)
DMA 05	17,643

IV.2.4 Areas Draining to Self-Retaining Areas

No areas are planned to drain to self-retaining areas, as shown in Table 6 below.

Table 6. Summary of DMAs Draining to Self-Retaining Areas

DMA Name	Area (sf)	Post-Project Surface Type	Runoff Factor	Area X Runoff Factor [A]	Receiving Self-Retaining DMA Name	Area of Receiving DMA (sf) [B]	Ratio of [A] / [B]
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

IV.2.5 Areas Draining to Bioretention Facilities

Tables 7 through 11 below summarize the DMAs that are proposed to drain to the various bioretention facilities. These DMAs have been used to size the bioretention facilities consistent with the BASMAA Post-Construction Manual sizing procedure, which generally includes the following steps:

- Determine the size (sf) of each DMA draining to a bioretention facility.
- Determine the post-project surface type of each DMA.
- Assign a runoff factor (from Table 4.1 of the BASMAA Post-Construction Manual) for each surface type.
- Calculate the effective DMA size by modifying the DMA size by the runoff factor for that DMA
- Sum the effective size of all DMAs draining to the bioretention facility.
- Multiply the sum of the effective DMA sizes by 0.04 (4%) to determine the minimum surface area needed for the bioretention area.

The BASMAA Post-Construction Manual calls out a typical bioretention facility cross section, which has been reproduced on Exhibit 3 of this SCP.

Table 7. Sizing Criteria for Bioretention Facility 01

DMA Name	Area (sf)	Post-Project Surface Type	Runoff Factor	Area X Runoff Factor	Facility Name		
					Bioretention Facility 01		
DMA 02	2,103	Rock-Faced Soil	0.5	1,051.5	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
DMA 03	6,367	Pavement	1.0	6,367			
			Total	7418.5	0.04	296.74	430

Table 8. Sizing Criteria for Bioretention Facility 02

DMA Name	Area (sf)	Post-Project Surface Type	Runoff Factor	Area X Runoff Factor	Facility Name		
					Bioretention Facility 02		
DMA 01	5,763	Gravel	0.5	2,881.5	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
			Total	2,881.5	0.04	115.26	1,417

*Rock-Faced Soil is anticipated to function similar to brick pavers on sand due to its moderately impervious nature. Therefore, a runoff factor of 0.5 has been used, per BASMAA Table 4.1.

Table 9. Sizing Criteria for Bioretention Facility 03

DMA Name	Area (sf)	Post-Project Surface Type	Runoff Factor	Area X Runoff Factor	Facility Name		
					Bioretention Facility 03		
DMA 04	19,663	Pavement	1.0	19,663	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
			Total	19,681	0.04	786.52	1,012

Table 10. Sizing Criteria for Bioretention Facility 04

DMA Name	Area (sf)	Post-Project Surface Type	Runoff Factor	Area X Runoff Factor	Facility Name		
					Bioretention Facility 04		
DMA 07	3,402	Pavement	1.0	3,402	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
			Total	3,402	0.04	136	359

*Rock-Faced Bedrock is anticipated to function similar to paving due to its highly impervious nature. Therefore, a runoff factor of 1.0 has been used, per BASMAA Table 4.1.

Table 11. Sizing Criteria for Bioretention Facility 05

DMA Name	Area (sf)	Post-Project Surface Type	Runoff Factor	Area X Runoff Factor	Facility Name		
					Bioretention Facility 05		
DMA 08	4,783	Pavement	1.0	4,783	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
			Total	4,783	0.04	191	468

Table 12. Sizing Criteria for Bioretention Facility 06

DMA Name	Area (sf)	Post-Project Surface Type	Runoff Factor	Area X Runoff Factor	Facility Name		
					Bioretention Facility 06		
DMA 09	2,664	Pavement	1.0	2,664	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
			Total	2,664	0.04	106.56	1,121

Table 13. Sizing Criteria for Bioretention Facility 07

DMA Name	Area (sf)	Post-Project Surface Type	Runoff Factor	Area X Runoff Factor	Facility Name		
					Bioretention Facility 07		
DMA 10	6,512	Pavement	1.0	6,512	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
			Total	6,512	0.04	260.48	2,611

V. SOURCE CONTROL MEASURES

V.1 Site Activities and Potential Sources of Pollutants

Wine production and small-scale wine tasting and other related events will occur at the project site. Wine production activities will take place indoors, with process and wash water being directed into the private septic system and not into the storm drain system. Site activities with the potential to release pollutants into stormwater runoff include the following:

- Landscape maintenance (i.e., sediment loss through irrigation, use of fertilizers and pesticides)
- General building maintenance (routine building exterior cleaning, painting/refinishing)
- General grounds/parking area maintenance (routine sweeping, repaving and restriping)
- Trash and recyclable material storage
- Vehicular traffic (potential loss of oil and grease from passenger vehicles, freight vehicles, refuse collection vehicles)

V.2 Source Control Table

The Stormwater Pollutant Sources / Source Control Checklist provided in Appendix A of the BASMAA Post-Construction Manual has been utilized to prepare Table 14 below, which summarizes the potential pollutant sources and related source control BMPs.

Table 14. Stormwater Pollutant Sources and Source Control BMPs

Potential Source of Runoff Pollutants	Structural Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	Storm drain inlets shall be marked with the words "No Dumping" or similar	Routine inspection and maintenance of the storm drain inlet to prevent blockages and overflow
Interior floor drains	Interior floor drains will be plumbed to private septic system	Routine inspection and maintenance of drains to prevent blockages and overflow
Landscaping/outdoor pesticide use/building and grounds maintenance	Landscape plan preserves native trees, shrubs, and ground cover to the maximum extent possible	Maintain landscaping using minimal or no pesticides. The project O&M Plan will detail how to carry out these and other Operational Source Control BMPs
	Landscape plan includes use of native plants to minimize the need for fertilizers and pesticides	
	Plants tolerant of saturated soil conditions have been selected for landscaped areas designed to retain stormwater and are shown on the landscape plan	Provide O&M Plan information to new owners, lessees, and operators, if/when applicable
	To ensure successful establishment, plants appropriate to site soils, slopes, and climate have been selected and are shown on the landscape plan	

Potential Source of Runoff Pollutants	Structural Source Control BMPs	Operational Source Control BMPs
Refuse areas	Trash and recycling will be stored in a designated area adjacent to the winery building. This area will be paved and graded to drain away from the covered storage receptacles. Grape pomace will be temporarily stored in covered bins outdoors until off-hauled from the site.	Routine maintenance and inspection of the trash, recycling, and pomace storage areas will occur to ensure that an adequate number of receptacles is provided and that leaky or damaged receptacles are replaced immediately. Spill control materials will be available on-site. The project O&M Plan will detail how to carry out these and other Operational Source Control BMPs
	Signs will be posted on or near the dumpsters with the words "Do Not Dump Hazardous Materials Here" or similar	
Miscellaneous wash water	Provide interior floor drains to collect wash water and to prevent discharge of wash water into stormwater/storm drain system.	Wash water containing any cleaning agent or degreaser shall be collected and discharged to the private septic system and not to a storm drain. The project O&M Plan will detail how to carry out these and other Operational Source Control BMPs
Plazas, sidewalks, and parking lots	N/A	Plazas, sidewalks, and parking lots shall be swept regularly to prevent accumulation of litter and debris. Debris from any pressure washing shall be collected and disposed of in order to prevent entry into storm water/storm drain system. The project O&M Plan will detail how to carry out these and other Operational Source Control BMPs

V.3 Features, Materials, and Methods of Construction of Source Control BMPs

The conceptual layout of the project site includes a number of features to limit pollution generation and/or prevent pollutants from coming into contact with stormwater. These features include the following:

- Directing runoff from paved surfaces into landscaped areas and/or bioretention areas for infiltration
- Vegetated and rock-lined swales to minimize erosion and reduce channel velocities
- Careful selection of landscaping material to ensure selected vegetation is appropriate to the soils, slopes, and client of the site
- Paved and protected trash storage area
- Discharge of roof drain downspouts to landscaped areas and/or bioretention areas
- Protection of the dosing chamber with bollards to prevent leaks from accidental damage

VI. STORMWATER FACILITY MAINTENANCE

VI.1 Ownership and Responsibility for Maintenance in Perpetuity

As required by the County of Napa through adoption of the BASMAA Post-Construction Manual, an Operation and Maintenance Plan (O&M Plan) must be developed detailing how the bioretention and any other stormwater facilities will be maintained, inspected, and financed. Maintenance of the bioretention facilities must be financed and implemented in perpetuity to ensure continued functionality of these areas. The project O&M Plan will specify how maintenance will be funded and budgeted for and will likely take the form of a Stormwater Management Facilities Agreement. This agreement, which would be transferred along with the property in the event that the Tench Winery is sold, would call out requirements for periodic inspections and reporting at the site owner's expense. Preparation of both the O&M Plan and the Stormwater Management Facilities Agreement, if needed, must be completed following construction of the bioretention facilities, with copies provided to the County of Napa for record keeping purposes.

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.

VI.2 Summary of Maintenance Requirements

A complete and detailed list of maintenance and inspection requirements, including inspection frequencies, will be included in the project O&M Plan. Detailed documentation of the construction of the biorentention facilities shall also be included in the O&M Manual such that future owners of the site have an understanding of the facilities to be inspected and maintained.

General maintenance responsibilities described in the project O&M Plan are expected to include the following:

- Routine removal of soil and/or debris from drainage inlets and overflows
- Pruning and trimming of trees and vegetation
- Routine weed control in landscaped and bioretention areas, preferably by mechanical means or using natural herbicides
- Re-application of mulch to landscaped areas, if applicable following final design
- Routine inspection of signage for graffiti or damage, and replacement as needed
- Continual monitoring of the irrigation system and adjustment of timing and flow to ensure irrigation is adequate, but not excessive, if applicable following final design

VII. CONSTRUCTION CHECKLIST

Table 15 below includes a checklist for BMP-related items that need to be incorporated into the construction plan set, as required by the County of Napa through the adoption of the BASMAA Post-Construction Manual. Additionally, Table 15 shall be reproduced within the construction plan set with plan sheet numbers provided within the construction checklist table indicating the location of each source or treatment control measure within the plan set.

Table 15. Construction Checklist

Page Number of Stormwater Control Plan	Source Control or Treatment Control Measure	Plan Sheet #
Page # 12	Mark/provide signage at storm drain inlets	
Page # 12	Connect interior floor drains to waste water system	
Page # 12	Use native plants in landscaped and vegetated areas	
Page # 13	Grade trash, recycling, and grape pomace storage areas to avoid stormwater run-on from pervious areas	
Page # 13	Mark/provide signage at trash, recycling, and grape pomace storage areas	
Exhibit 3	Construct bioretention facilities as designed/per BASMAA Post-Construction Manual Figure 4.1 and Appendix B	

Careful construction of the bioretention facilities will help to ensure that these areas function as intended while also minimizing future maintenance problems. Attachment 3 of this SCP includes a copy of the BASMAA Bioretention Facility Construction Inspection Checklist (originally enclosed at Appendix B within the BASMAA Post-Construction Manual), which should be utilized during final design and construction of the bioretention facilities.

VIII. CERTIFICATIONS

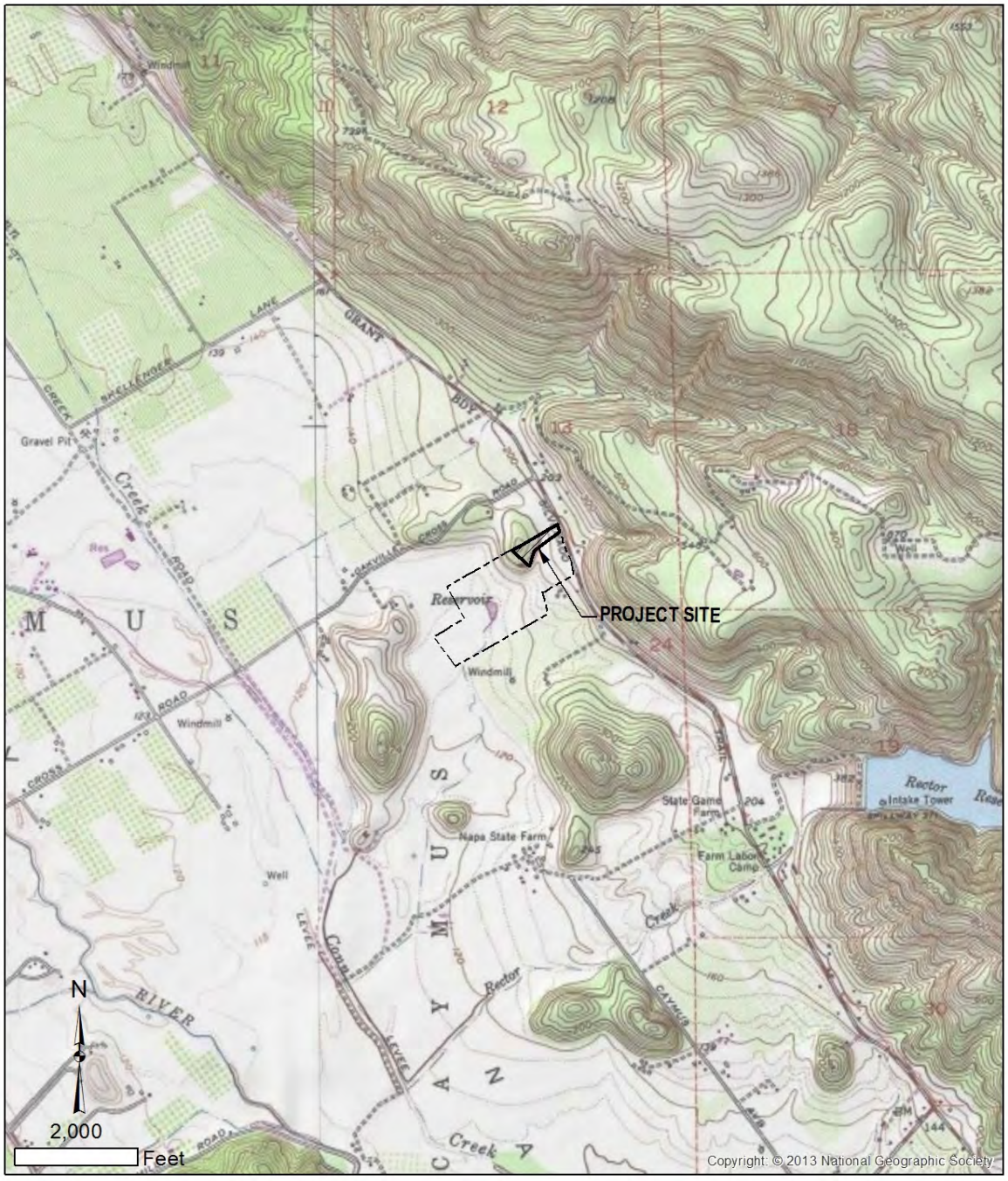
The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this Stormwater Control Plan are in accordance with the current edition of the BASMAA Post-Construction Manual, dated July 14, 2014.

ATTACHMENT 1

Exhibit 1: Vicinity Map

Exhibit 2: Site Plan

Exhibit 3: Drainage Management Areas



PRELIMINARY - NOT FOR CONSTRUCTION

LACO
Eureka - Ukiah - Santa Rosa
Advancing the quality of life for generations to come
1-800-515-5054
www.lacoassociates.com

ENGINEER OF RECORD: NATHAN TOEWS, P.E.
LICENSE NUMBER: 70251
EXPIRATION DATE: 09/30/16

Project:
Tench Winery

Project Address:
7631 Silverado Trail
Napa, CA 94558
APN: 031-070-006
Phone: 646.660.4200

Client:
Tench Winery, LLC

Client Address:
7631 Silverado Trail
Napa, CA 94558
APN: 031-070-006
Phone: 646.660.4200

Sheet Title:
Stormwater Control Plan

VICINITY MAP

Project History:

01	05-12-2015	Design Review Submittal
02	07-10-2015	Revised Design Review Submittal

Project Number:
8091.00

Designed & Drawn By:
SMS, NKT, KDB, RLD

Date:
10 JULY 2015

Sheet Number:
Exhibit 1

LEGEND

- LOW SLOPE AREA TO BE REPLACED WITH OAKS AND NATIVE VEGETATION
- BIORETENTION FACILITY
- SLOPE WITH ROCK-FACED SOIL
- SLOPE SYMBOL, POINTS DOWNHILL

PRELIMINARY - NOT FOR CONSTRUCTION

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ENGINEER OF RECORD: NATHAN TOEWS, P.E.
LICENSE NUMBER: 70251
EXPIRATION DATE: 09/30/16

Project:
Tench Winery

Project Address:
7631 Silverado Trail
Napa, CA 94558
APN: 031-070-006
Phone: 646.660.4200

Client:
Tench Winery, LLC

Client Address:
7631 Silverado Trail
Napa, CA 94558
APN: 031-070-006
Phone: 646.660.4200

Sheet Title:
Stormwater Control Plan

SITE PLAN

Project History:

01 05-12-2015 Design Review Submittal
02 07-10-2015 Revised Design Review Submittal

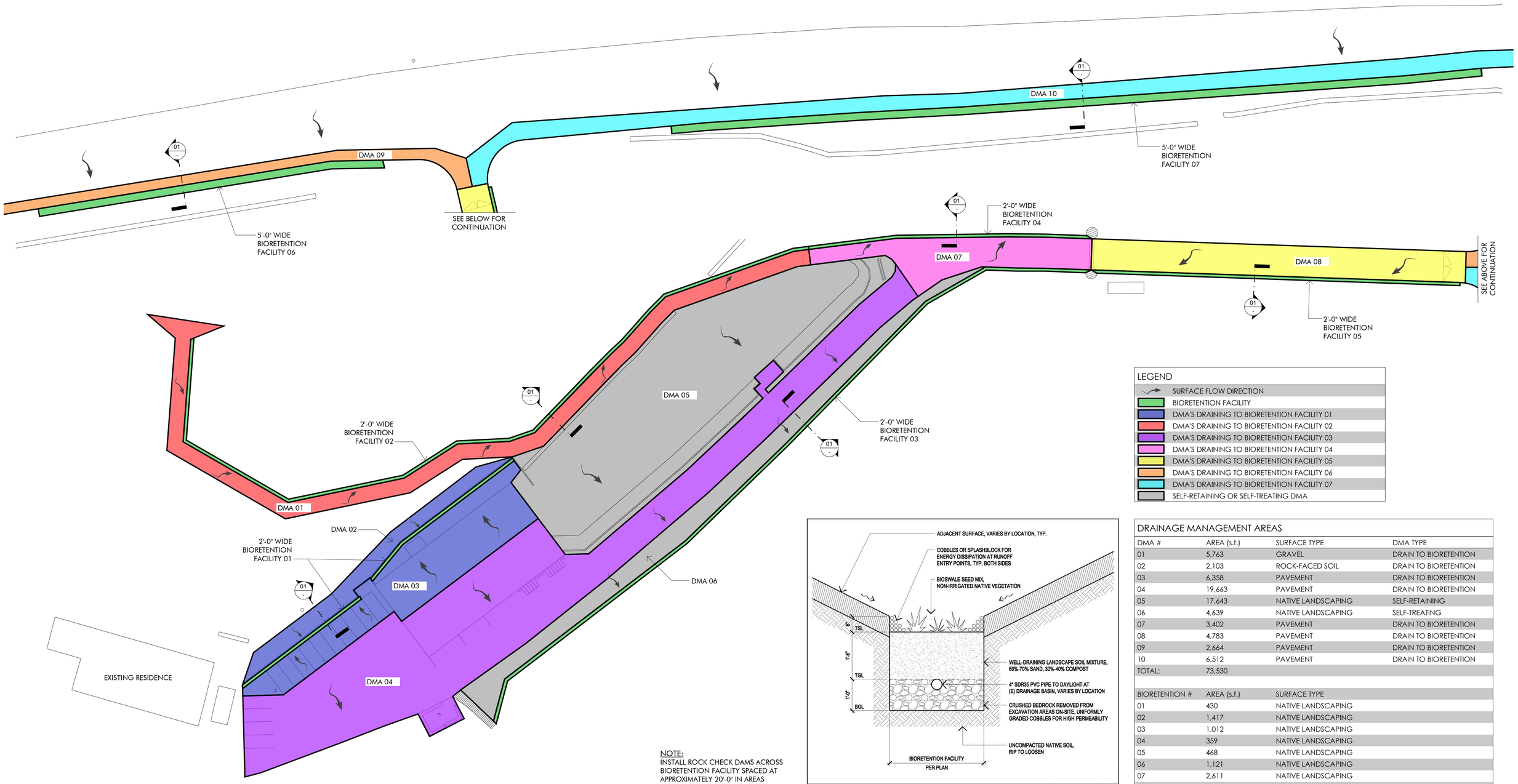
SCALE: 1" = 30' - 0"
0' 30' 60' 120'

Project Number:
8091.00

Designed & Drawn By:
SMS, NKT, KDB, RLD

Date:
15 JULY 2015

Sheet Number:
Exhibit 2



LEGEND

SURFACE FLOW DIRECTION
BIORETENTION FACILITY
DMA'S DRAINING TO BIORETENTION FACILITY 01
DMA'S DRAINING TO BIORETENTION FACILITY 02
DMA'S DRAINING TO BIORETENTION FACILITY 03
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DMA'S DRAINING TO BIORETENTION FACILITY 05
DMA'S DRAINING TO BIORETENTION FACILITY 06
DMA'S DRAINING TO BIORETENTION FACILITY 07
SELF-RETAINING OR SELF-TREATING DMA

TYPICAL BIORETENTION FACILITY — SCALE: 3/4"=1'-0" — 01

DRAINAGE MANAGEMENT AREAS

DMA #	AREA (s.f.)	SURFACE TYPE	DMA TYPE
01	5,763	GRAVEL	DRAIN TO BIORETENTION
02	2,103	ROCK-FACED SOIL	DRAIN TO BIORETENTION
03	6,358	PAVEMENT	DRAIN TO BIORETENTION
04	19,663	PAVEMENT	DRAIN TO BIORETENTION
05	17,643	NATIVE LANDSCAPING	SELF-RETAINING
06	4,639	NATIVE LANDSCAPING	SELF-TREATING
07	3,402	PAVEMENT	DRAIN TO BIORETENTION
08	4,783	PAVEMENT	DRAIN TO BIORETENTION
09	2,664	PAVEMENT	DRAIN TO BIORETENTION
10	6,512	PAVEMENT	DRAIN TO BIORETENTION
TOTAL:	73,530		
BIORETENTION #	AREA (s.f.)	SURFACE TYPE	
01	430	NATIVE LANDSCAPING	
02	1,417	NATIVE LANDSCAPING	
03	1,012	NATIVE LANDSCAPING	
04	359	NATIVE LANDSCAPING	
05	468	NATIVE LANDSCAPING	
06	1,121	NATIVE LANDSCAPING	
07	2,611	NATIVE LANDSCAPING	
TOTAL:	7,418		

NOTE:
INSTALL ROCK CHECK DAMS ACROSS BIORETENTION FACILITY SPACED AT APPROXIMATELY 20'-0" IN AREAS WHERE BIORETENTION FACILITY IS SLOPED AT 6% OR STEEPER

PRELIMINARY - NOT FOR CONSTRUCTION

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ENGINEER OF RECORD: NATHAN TOEWS, P.E.
LICENSE NUMBER: 70251
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Exhibit 3

ATTACHMENT 2

Stormwater Control Plan Checklist

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Stormwater Control Plan Checklist

Contents of Exhibit

- ☑ Existing natural hydrologic features (depressions, watercourses, wetlands, riparian corridors, relatively undisturbed areas) and significant natural resources.
- ☑ Existing and proposed site drainage network and connections to drainage off-site.
- ☑ Proposed design features and surface treatments used to minimize imperviousness and reduce runoff.
- ☑ Entire site divided into separate Drainage Management Areas (DMAs). Each DMA has a unique identifier and is characterized as self-retaining (zero-discharge), self-treating, or draining to a bioretention facility.
- ☑ Proposed locations and footprints of bioretention facilities.
- ☑ Potential pollutant source areas, including loading docks, food service areas, refuse areas, outdoor processes and storage, vehicle cleaning, repair or maintenance, fuel dispensing, equipment washing, etc. listed in Appendix A.

Contents of Report

- ☑ Narrative analysis or description of site features and conditions that constrain, or provide opportunities for, stormwater control.
- ☑ Narrative description of site design characteristics that protect natural resources.
- ☑ Narrative description and/or tabulation of site design characteristics, building features, and pavement selections that reduce imperviousness of the site.
- ☑ Tabulation of proposed pervious and impervious area, showing self-treating areas, self-retaining areas, areas draining to self-retaining areas, and areas tributary to each bioretention facility.
- ☑ Preliminary designs, including calculations, for each bioretention facility. Elevations should show sufficient hydraulic head for each bioretention facility.
- ☑ Tabulation of pollutant sources from the list in Appendix A and for each source, the corresponding source control measure(s).
- ☑ General maintenance requirements for bioretention facilities
- ☑ Means by which facility maintenance will be financed and implemented in perpetuity.
- ☑ Statement accepting responsibility for interim operation & maintenance of facilities.
- ☑ Stormwater Construction Checklist.
- ☑ Certification by professional civil engineer, architect, or landscape architect (if required by local agency).

ATTACHMENT 3

Bioretention Facility Construction Inspection Checklist

LACO

Appendix B. Bioretention Facility Construction Inspection Checklist

Layout (to be confirmed prior to beginning excavation)

- ❒ Square footage of the facility meets or exceeds minimum shown in Stormwater Control Plan
- ❒ Site grading and grade breaks are consistent with the boundaries of the tributary Drainage Management Area(s) (DMAs) shown in the Stormwater Control Plan
- ❒ Inlet elevation of the facility is low enough to receive drainage from the entire tributary DMA
- ❒ Locations and elevations of overland flow or piping, including roof leaders, from impervious areas to the facility have been laid out and any conflicts resolved
- ❒ Rim elevation of the facility is laid out to be level all the way around, or elevations are consistent with a detailed cross-section showing location and height of interior dams
- ❒ Locations for vaults, utility boxes, and light standards have been identified so that they will not conflict with the facility
- ❒ Facility is protected as needed from construction-phase runoff and sediment

Excavation (to be confirmed prior to backfilling or pipe installation)

- ❒ Excavation conducted with materials and techniques to minimize compaction of soils within the facility area
- ❒ Excavation is to accurate area and depth
- ❒ Slopes or side walls protect from sloughing of native soils into the facility
- ❒ Moisture barrier, if specified, has been added to protect adjacent pavement or structures.
- ❒ Native soils at bottom of excavation are ripped or loosened to promote infiltration

Overflow or Surface Connection to Storm Drainage
(to be confirmed prior to backfilling with any materials)

- ❒ Overflow is at specified elevation
- ❒ No knockouts or side inlets are in overflow riser
- ❒ Overflow location selected to minimize surface flow velocity (near, but offset from, inlet recommended)
- ❒ Grating excludes mulch and litter (beehive or atrium-style grates with ¼" openings recommended)
- ❒ Overflow is connected to storm drain via appropriately sized piping

Underground connection to storm drain/outlet orifice
(to be confirmed prior to backfilling with any materials)

- ❒ Perforated pipe underdrain (PVC SDR 35 or approved equivalent) is installed with holes facing down
- ❒ Perforated pipe is connected to storm drain at specified elevation (typ. bottom of soil elevation)
- ❒ Cleanouts are in accessible locations and connected via sweep bends

Drain Rock/Subdrain (to be confirmed prior to installation of soil mix)

- ❒ Rock is installed as specified, 12" min. depth. Class 2 permeable, Caltrans specification 68-2.02F(3) recommended
- ❒ Rock is smoothed to a consistent top elevation. Depth and top elevation are as shown in plans
- ❒ Slopes or side walls protect from sloughing of native soils into the facility
- ❒ No filter fabric is placed between the subdrain and soil mix layers

Soil Mix

- ❒ Soil mix is as specified.
- ❒ Mix installed in lifts not exceeding 12"
- ❒ Mix is not compacted during installation but may be thoroughly wetted to encourage consolidation
- ❒ Mix is smoothed to a consistent top elevation. Depth of mix (18" min.) and top elevation are as shown in plans, accounting for depth of mulch to follow and required reservoir depth

Irrigation

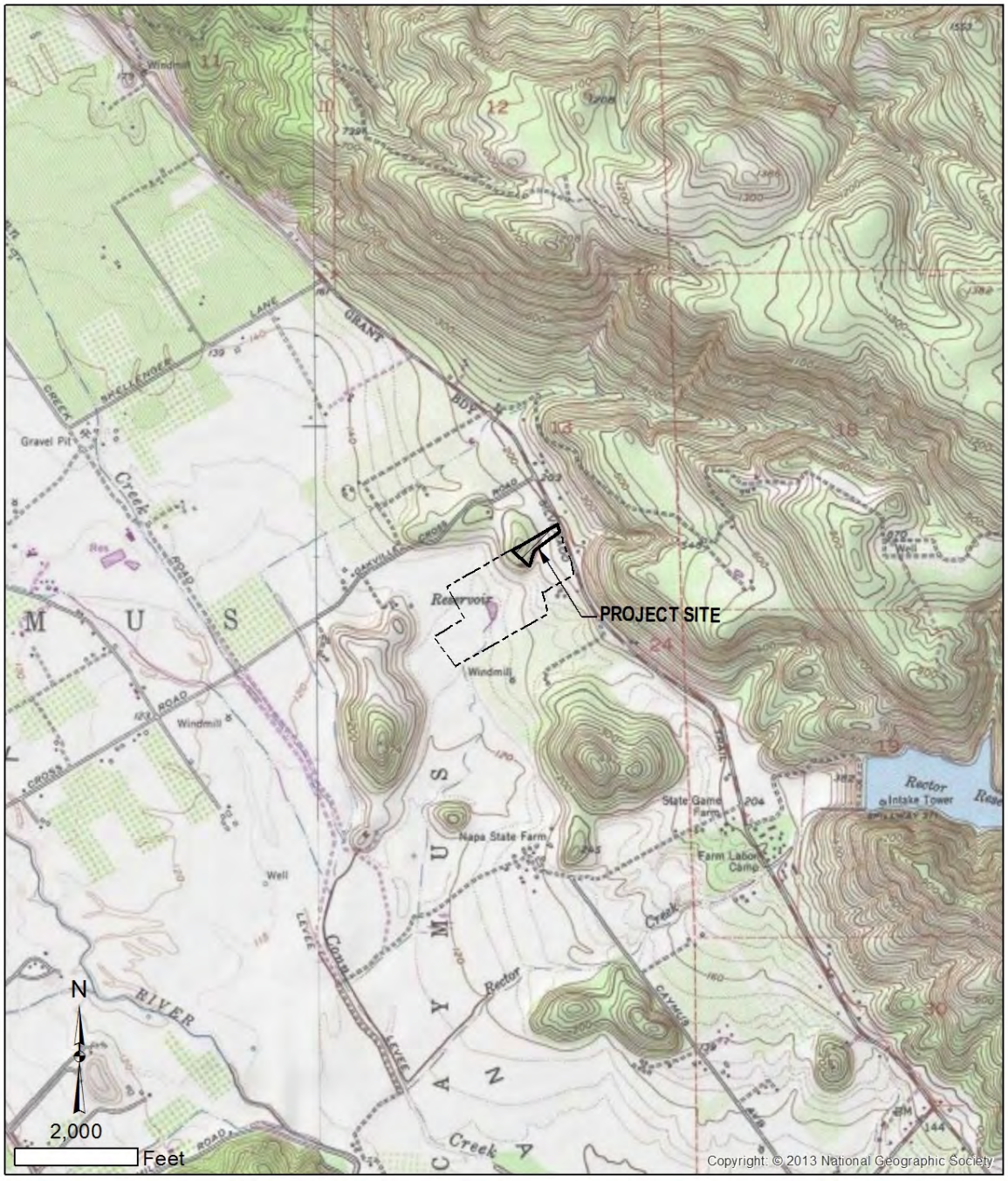
- ❒ Irrigation system is installed so it can be controlled separately from other landscaped areas. Smart irrigation controllers and drip emitters are recommended and may be required by local code or ordinance.
- ❒ Spray heads, if any, are positioned to avoid direct spray into outlet structures

Planting

- ❒ Plants are installed consistent with approved planting plan, consistent with site water allowance
- ❒ Any trees and large shrubs are staked securely
- ❒ No fertilizer is added; compost tea may be used
- ❒ No native soil or clayey material are imported into the facility with plantings
- ❒ 1"-2" mulch may be applied following planting; mulch selected to avoid floating
- ❒ Final elevation of soil mix maintained following planting
- ❒ Curb openings are free of obstructions

Final Engineering Inspection

- ❒ Drainage Management Area(s) are free of construction sediment and landscaped areas are stabilized
- ❒ Inlets are installed to provide smooth entry of runoff from adjoining pavement, have sufficient reveal (drop from the adjoining pavement to the top of the mulch or soil mix, and are not blocked
- ❒ Inflows from roof leaders and pipes are connected and operable
- ❒ Temporary flow diversions are removed
- ❒ Rock or other energy dissipation at piped or surface inlets is adequate
- ❒ Overflow outlets are configured to allow the facility to flood and fill to near rim before overflow
- ❒ Plantings are healthy and becoming established
- ❒ Irrigation is operable
- ❒ Facility drains rapidly; no surface ponding is evident
- ❒ Any accumulated construction debris, trash, or sediment is removed from facility
- ❒ Permanent signage is installed and is visible to site users and maintenance personnel



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VICINITY MAP

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Designed & Drawn By:
SMS, NKT, KDB, RLD

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10 JULY 2015

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Exhibit 1

LEGEND

- LOW SLOPE AREA TO BE REPLACED WITH OAKS AND NATIVE VEGETATION
- BIORETENTION FACILITY
- SLOPE WITH ROCK-FACED SOIL
- SLOPE SYMBOL, POINTS DOWNHILL

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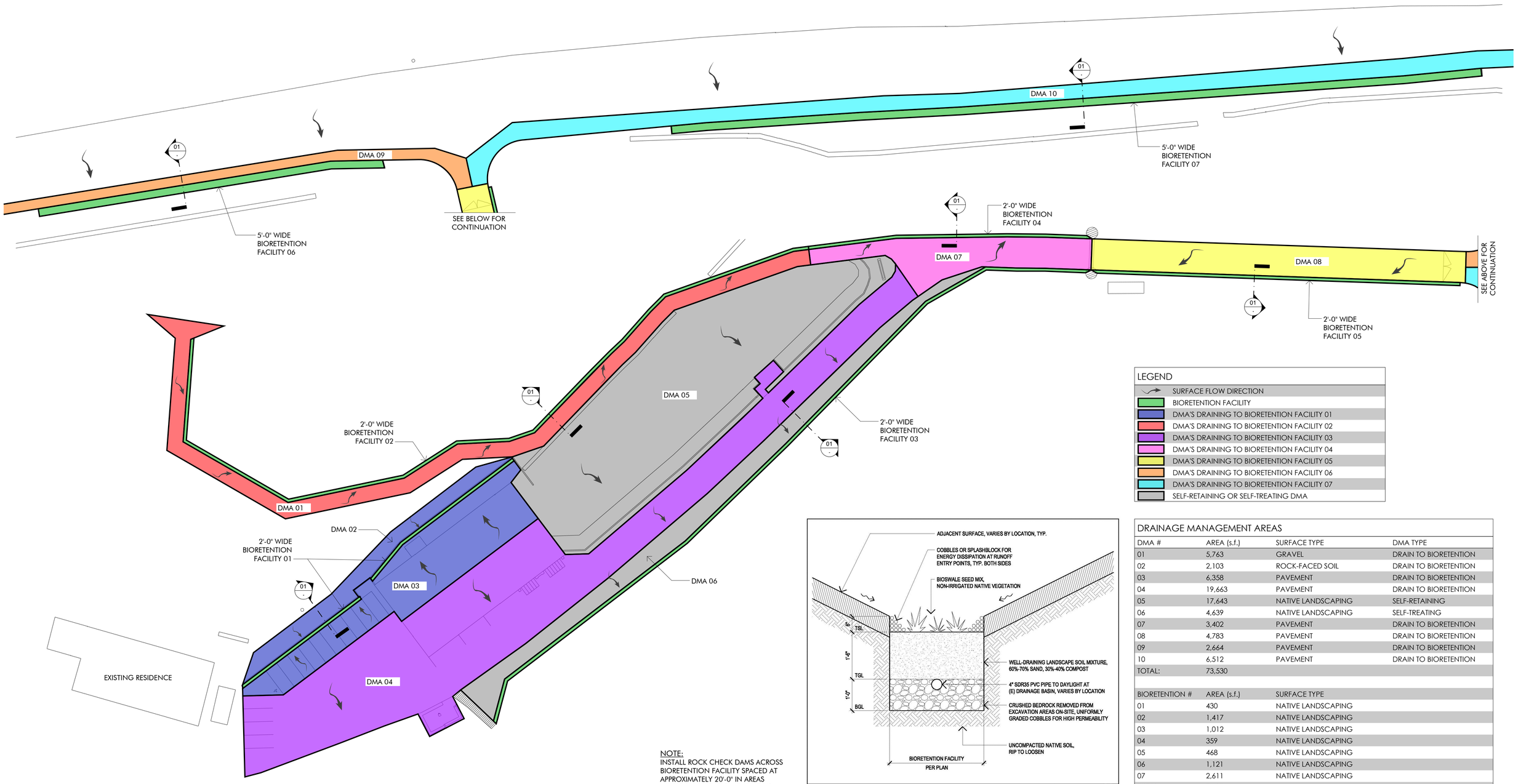

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