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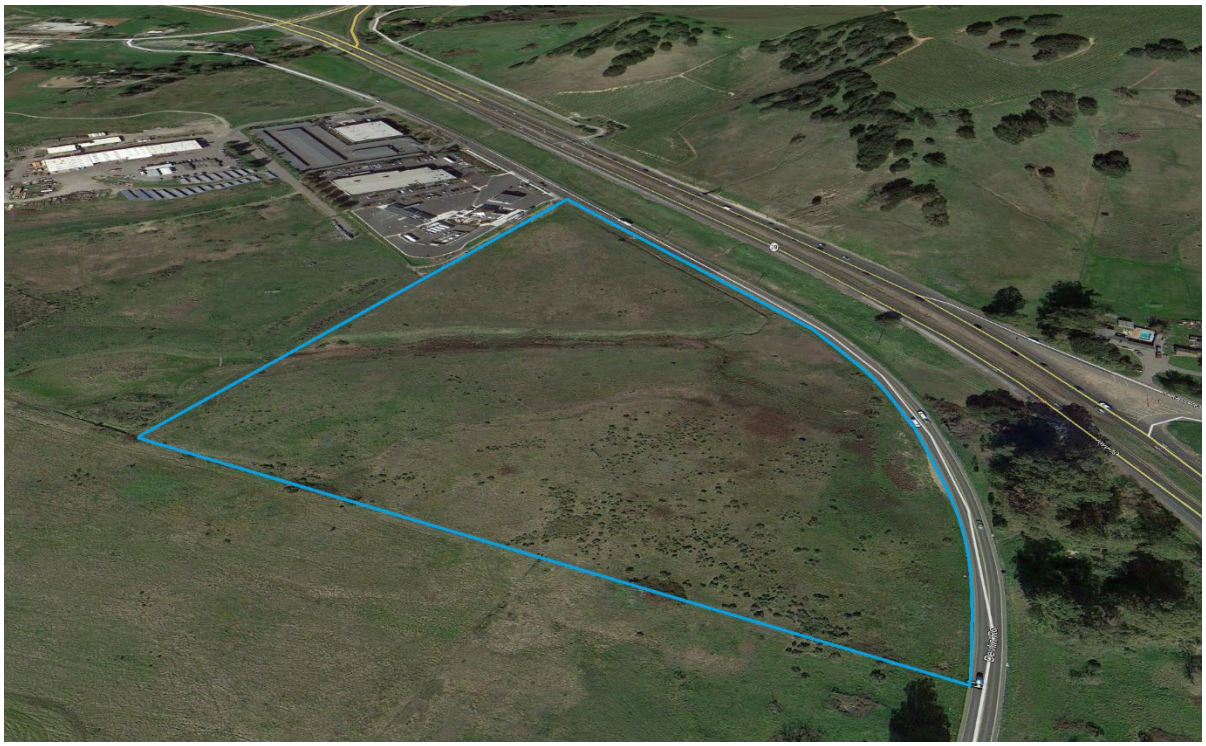
Stormwater Control Plan

Nova Business Park South Tentative Parcel Map (P19-00022)
Planning Commission Hearing Date July 15, 2020

Bay Area Stormwater Management Agencies Association (BASMAA)
Preliminary Stormwater Control Plan
For a Regulated Project

Nova Business Park South Tentative Subdivision Map



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I. Project Data

Table 1. Project Data Form

Project Name / Number	Nova Business Park South (2018.06)
Application Submittal Date	TBD
Project Location	APN 057-020-025
Project Phase No.	Tentative Map
Project Type and Description	The project includes subdivision of single light industrial parcel into 11 new parcels for future development.
Total Project Site Area (acres)	20.23± acres
Total New and Replaced Impervious Surface Area (Public Drives)	New: 2.47 ac (proposed public)
Total Pre-Project Impervious Surface Area	0 sf
Total Post-Project Impervious Surface Area	New: 2.47 ac (proposed public)

II. Setting

II.A. Project Location and Description

The Nova Business Park South is a proposed subdivision of an existing vacant property north of the Napa Airport along Devlin Road. The proposed subdivision includes 11 new parcels accessed by two new public courts connected to Devlin Road. Future full development of each parcel is not known at this time but is expected to include light industrial, warehousing and office which conform to the Airport Specific Plan. The site is accessible from Devlin Road.

The existing land use is vacant. The parcel is zoned IP (Industrial Park)/AC (Airport Commercial). The parcel slopes slightly to the west at approximately 1% with a drainage through the middle of the parcel.

This report is prepared to address stormwater controls for public spaces that will be developed under a future Final Map and Improvement Plan. Individual lot buildout and stormwater controls will be addressed during Use Permit processing of the individual eleven new parcels.

A vicinity map is provided in Figure 1, on the following page.

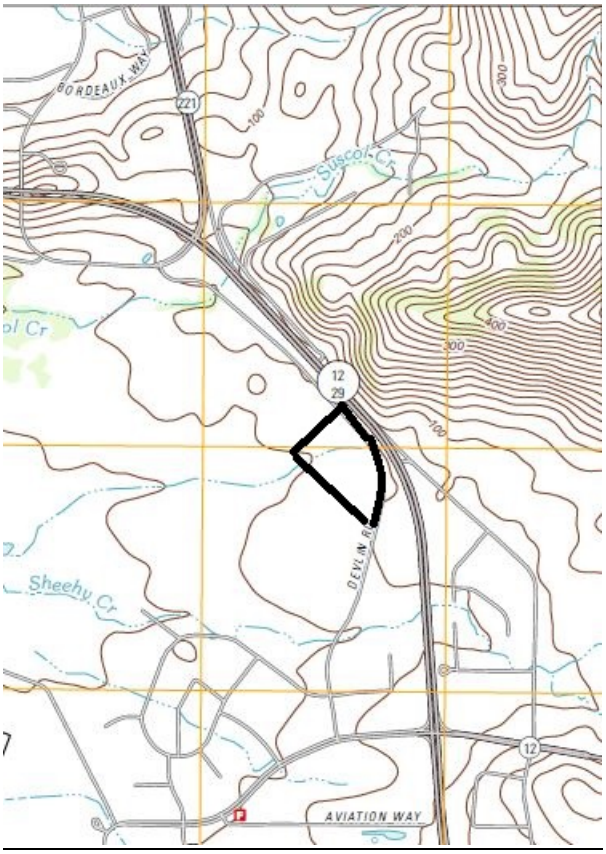


Figure 1.

II.B. Existing Site Features and Conditions

The 20.32 acre parcel is sloped approximately 1.0 percent to the west. The site elevations range from 65 to 40 feet MSL. The higher elevations are found on the eastern property line along Devlin Road.

Existing Wetlands are mapped and located outside of proposed developed areas.

The subsurface soils are primarily Haire Clay Loam, with the first horizon at 0-22 inches consisting of clay loam, and third horizon consisting of 27-45 inches of clay. The secondary soils group is Fagan Clay Loam, with the first horizon of 0-16 inches consisting of clay loam and the second horizon between 16-28 consisting of clay. Soil information from web soil survey provided by the National Resources and Conservation Service (NRCS). Depth to ground water estimated at 80 inches, however several wetlands occur onsite indicating presence of vadose (shallow) ground water in the lower elevations. Natural drainage consists of overland relief and a mapped blue line drainage through the center of the parcel.

II.C. Opportunities and Constraints for Stormwater Control

Three opportunities are provided with this site for Stormwater control. First, the site has roughly 8600 feet of overland relief conveyance through open space and grasslands until discharge into Napa River allowing sufficient time for filtration prior to discharge to a listed waterbody. Second, the airport specific plan mandates a 25’ landscape setback and planting area along property frontage

that can be used for treatment and infiltration. Last, the site has a natural drainage flowing through it with enough relief to allow for installation of bioretention units on each parcel before connection to the proposed storm drain network.

The single most challenging constraint for the project is managing setback requirements due to wetland and specific plan demands.

III. Low Impact Development Design Strategies

III.A. Optimization of Site Layout

III.A.1. Limitation of development envelope

The development envelope has been constrained on this site to retain as much natural land as possible, conserve as many wetlands as possible and to comply with all setbacks of the airport specific plan. Additionally, landscaping has been preserved to allow for collection of runoff.

III.A.2. Preservation of natural drainage features

The natural drainage pattern on the site is sheet flow from north and south to the existing drainage. This same drainage pattern will be mimicked in post construction to minimize the impact from hydro-modification.

III.A.3. Setbacks from creeks, wetlands, and riparian habitats

Napa County has a long history of regulated development near or adjacent to creeks, wetlands and riparian habitats. The existing site contains a mapped blue line stream, wetlands and riparian areas. The project proposes a 45' setback to the top of bank of the existing blue line stream, minimal impacts to riparian areas.

III.A.4. Minimization of imperviousness

The maximum amount of natural land will be maintained throughout the construction process to allow for capture and treatment of post construction runoff from the proposed developed areas.

III.A.5. Use of drainage as a design element

Off-site drainage is proposed to flow to bioretention planters within the 10-foot street to back of walk area within 5.5-foot bioretention planters and then to the proposed storm drain network. Thus, all stormwater falling on impervious surfaces is proposed to be treated prior to discharge from the storm drain network. *A preliminary cross section detail of the planters is provided in the Stormwater Control Plan in Appendix A.*

III.B. Use of Permeable Pavements

No Permeable Pavement is planned for use in this plan due to clay/clay loam soils and low infiltration capabilities.

III.C. Dispersal of Runoff to Pervious Areas

The Stormwater Control Plan provided in Appendix 1, illustrates how all public spaces proposed to be

developed will be treated.

The Nova Business Park South project has no stormwater conveyance features that would concentrate or direct storm water discharge without proper treatment. *The site sheet flows storm water runoff generally from the centerline of each court to adjacent bioinfiltration planters.* The Nova Business Park South project "BASMAA Bioretention Areas" are shown on the Stormwater Control Plan.

III.D. Stormwater Control Measures

The primary stormwater control measure for the project are bioretention areas shown on the Stormwater Control Plan. Landscape and undeveloped areas on each parcel are shown as "blank" with no hatching within the proposed Drainage Management Area.

IV. Documentation of Drainage Design

IV.A. Descriptions of Each Drainage Management Area

IV.A.1. Table of Drainage Management Areas

Table 1.

DMA Name	Surface Type	Area (Square Feet)
DMA C1	Public Road	30800
DMA C2	Public Road	48200
	Total	

IV.A.2. Drainage Management Area Descriptions

DMA C1, totaling 30800 square feet of roadway, drains Court 1. This area is proposed to drain to the east then north to Stormwater Retention Area C1.

DMA C2, totaling 48200 square feet of roadway, drains Court 2. This area is proposed to drain to the east then north to Stormwater Retention Area C2.

IV.B. Tabulation and Sizing Calculations

IV.B.1. Information Summary for Bioretention Facility Design

In accordance with BASMAA guidelines for bioretention treatment, 4% of the proposed impervious surface that does not drain to a self-retaining area must be captured and treated within a bioretention facility. Table 3, on the next page, summarizes bioretention capture areas and required bioretention treatment facility sizing.

Table 3.

Bioretention Capture Area	Impervious Area (Square Feet)	Post Project Surface Type	DMA Runoff Factor	DMA Area x Runoff Factor	Bioretention Areas		
					Sizing Factor	Min Area	Proposed Area
DMA C1a	47800	Road	1.0	47800	0.04	1912	8300
DMA C2a	59693	Road	1.0	59693	0.04	2387	10620
Total	107493		1.0	107493			
					0.04	**4308**	**18920**

IV.B.2. Self-Treating Areas

According to the BASMAA Post Construction Manual (PCM), self-treating areas are:

"landscaped or turf areas that do not drain to bioretention facilities, but rather drain directly off site or to the storm drain system. In general, self-treating areas include no impervious areas, unless the impervious area is small (5% or less) relative to the receiving pervious area and slopes are gentle enough to ensure runoff will be absorbed into the vegetation and soil."

No Self Treating areas are proposed by the Tentative Subdivision Map.

IV.B.3. Self-Retaining Areas

According to the BASMAA PCM, self-retaining areas are:

"used where, because of site layout or topography, it is not possible to drain entirely pervious areas off-site separately (as with self-treating areas). The technique works best on flat, heavily landscaped sites."

Additionally, "Areas draining to self-retaining areas, such as roofs, can be managed by routing it to self-retaining pervious areas."

BASMAA specifies that the maximum ratio is 2 parts impervious area for every 1 part pervious area. For example, 1000 square feet of impervious area will require 500 feet of pervious area with the ability to capture an inch of rainfall without flowing off site. If the maximum ratio of 2:1 are used, then 3-inches of water over the self-retaining area must be captured and absorbed before flowing to an off-site drain.

No Self Retaining Areas are proposed for this Subdivision Project.

V. Source Control Measures

V.A. Site activities and potential sources of pollutants

Primary potential sources for pollutants for residential projects includes on-site storm drain inlets,

and landscape and grounds maintenance.

V.B. Source Control Table

Table 3.

Potential Source of Runoff Pollutants	Permanent Source Control BMP	Operational Source Control BMP
Landscape and Ground Maintenance of Public Areas (Does Not Include Future Development of Individual Lots)	Preserve existing vegetation to the maximum extent	Maintain landscape using a minimum or no pesticides
	Design Landscape to minimize irrigation and runoff	Provide Irrigation Planting Management Plan to new owners
	Select Plants appropriate to the environment	Provide BMP O&M Plan to new owners

VI. Stormwater Facility Maintenance

VI.A. Ownership and Responsibility for Maintenance in Perpetuity

The ownership and responsibility of the permanent facilities associated with DMA C1 and C2 will be executed during the Final Map and Improvement Plan phase. Since final use and development of each parcel are undetermined at this stage, final ownership and responsibility of those individual facilities will lie with the Use Permit and Improvement plan for each development.

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

The maintenance requirements for the proposed installation are found in the Operations and Maintenance Plan required by the current BASMAA code. The operations and maintenance plan will be prepared during the Final Map and Improvement Plans for DMAs C1 and C2. Maintenance plans for each individual lot will be prepared during those Use Permit and Improvement Plan phases.

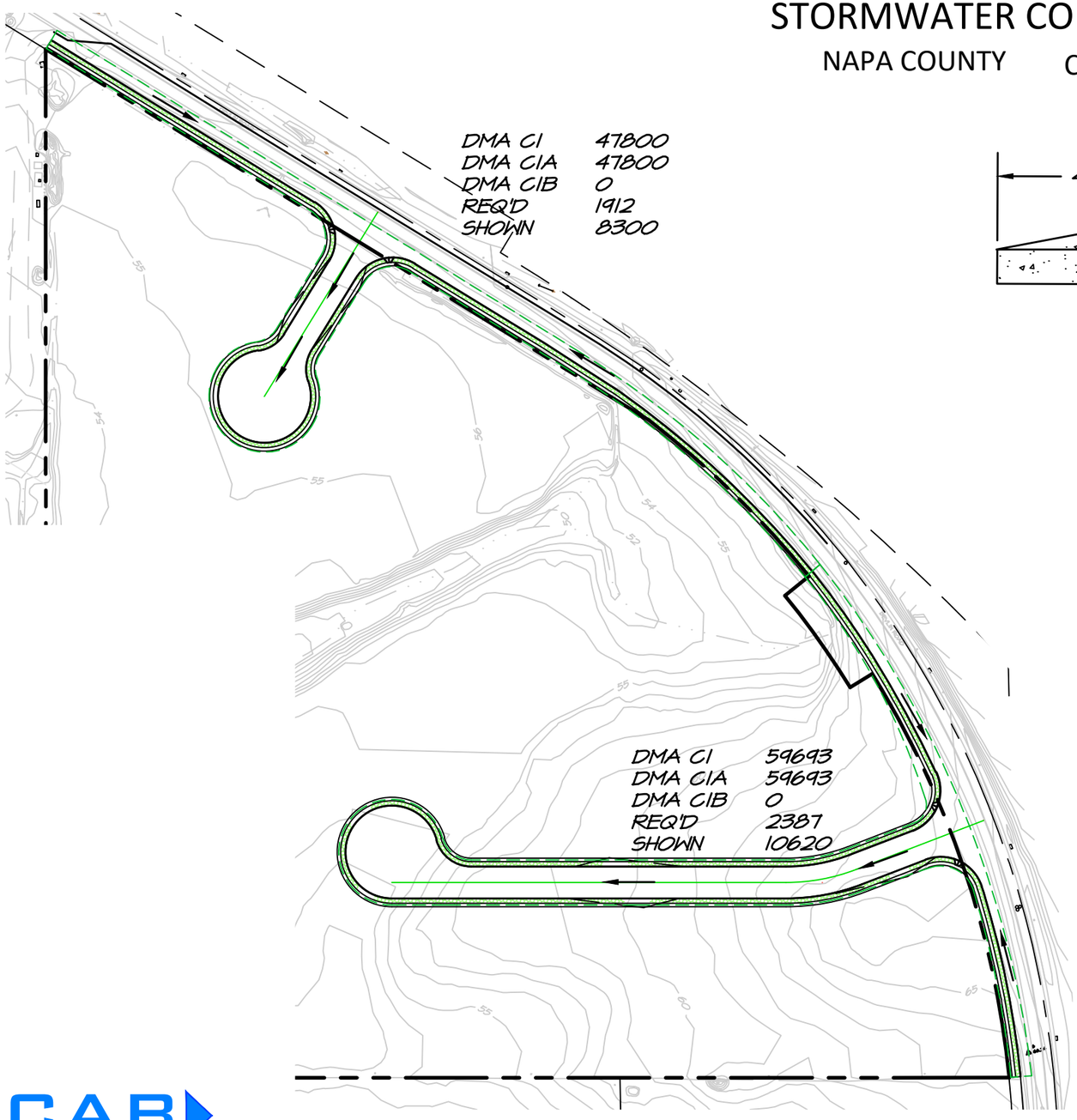
VII. Certifications

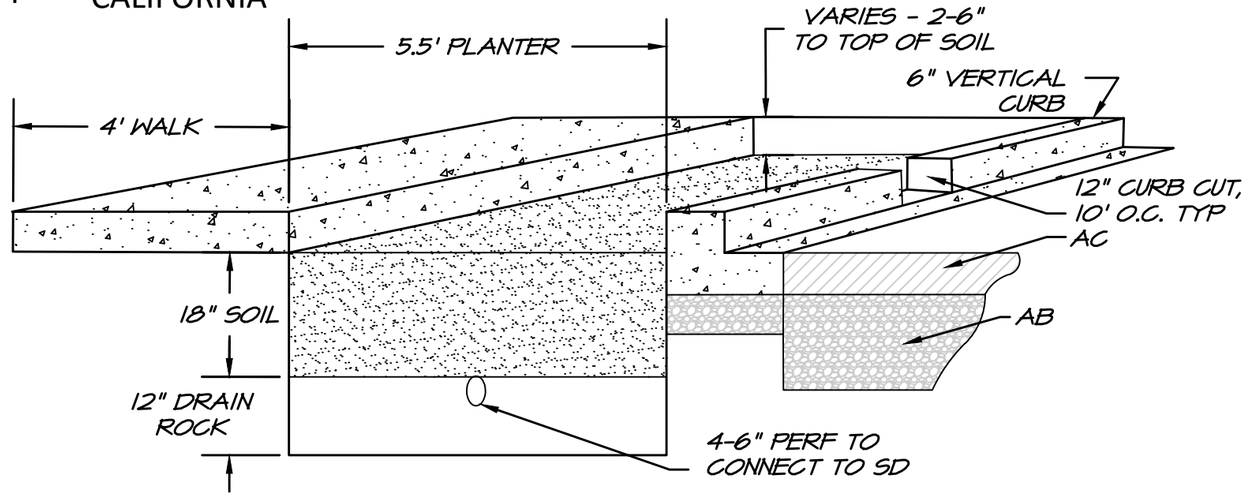
The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA Post-Construction Manual, seal attached hereto.

APPENDIX 1. STORMWATER CONTROL PLAN

NOVA BUSINESS PARK SOUTH
STORMWATER CONTROL PLAN

NAPA COUNTY CALIFORNIA





TYPICAL BIOINFILTRATION PLANTER

NO SCALE

NOTES:

1. ALL NUMBERS SHOWN HEREON REFER TO SQUARE FEET FOR CALCULATIONS OF STORMWATER MANAGEMENT REQUIREMENTS.
2. DMA C1/C2 REFER TO COURT DRAINAGE WHICH IS COLLECTED NEAR END OF COURT AND PROPOSED IN 5.5' PLANTER STRIP WITHIN 10' BACK OF CURB TO BACK OF WALK SPACE.
3. DMA'S ARE CATEGORIZED A/B FOR IMPERVIOUS & PERVIOUS AREAS RESPECTIVELY. PERVIOUS AREAS ARE CONSIDERED TO BE SELF TREATING.
4. "REQ'D" IS 4% OF DMA "A" AREA FOR BASMAA BIOINFILTRATION REQUIREMENTS.
5. "SHOWN" IS CALCULATED SQUARE FOOT OF BASMAA BIOINFILTRATION SHOWN ON THIS EXHIBIT.
6. DMA'S EXCLUDE CONSERVATION SETBACKS.

BASMAA BIOINFILTRATION BASINS, TYP

DRAINAGE MANAGEMENT AREA BOUNDARY, TYP

DRAINAGE DIRECTION, TYP

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1" = 150' 2019.05.01 2018.08