



ENGINEERS / SURVEYORS / PLANNERS

## PRELIMINARY STORM WATER CONTROL PLAN

FOR

### SUNBURST HOTEL

1880 Lincoln Avenue  
Calistoga, CA 94515

APN 011-050-041

SEPTEMBER 2015



**Owner/Developer:**

Calistoga Hotel Group, LP  
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**Preliminary**

09/18/2015 12:33:49 PM

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September 17, 2015

NO. C-78079

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Attachment B: Storm Water Control Plan Exhibit

**Appendices**

Self-Retaining Area Sizing Calculations

Storm Water IMP Inspection and Maintenance Log (Sample)

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## I. Project Data

Table 1. Project Data

Project Name/Number	Sunburst Hotel
Application Submittal Date	September 2015
Project Location	1880 Lincoln Avenue – Calistoga, CA 95415 APN 011-050-041
Project Phase No.	N/A
Project Type and Description	Hotel campus renovation including tenant improvements and outdoor hardscape/landscape improvements
Total Project Site Area	±1.1 acres
Total New and Replaced Impervious Surface Area	±0.6 acres
Total Pre-Project Impervious Surface Area	±0.3 acres
Total Post-Project Impervious Surface Area	±0.6 acres

## II. Setting

### II.A. Project Location and Description

The Sunburst Hotel is located on the east side of Lincoln Avenue (Highway 29) about one quarter mile north of Brannan Street.

The immediate project proposes to update and enhance the existing hotel campus with various interior and exterior improvements including new garden areas and landscaping improvements, accessibility improvements, a bocce ball court, outdoor beer garden, and spa patio. No additional guest units or building expansions are proposed at this time.



### II.B. Existing Site Features and Conditions

The site in its current condition consists of several hotel buildings, landscaping, asphalt parking areas, concrete walkways, patios and a pool area. The site drains generally to a large grassy field located to the southeast of the property.

### II.C. Opportunities and Constraints for Storm Water Control

An opportunity with this project is the substantial amount of landscaped area on the easterly side of the property which may be utilized to capture runoff from impervious surfaces. A constraint with this

project is the lack of an existing storm drain system in the vicinity of the site improvements which prohibits the implementation of bioretention facilities.

### **III. Low Impact Development Design Strategies**

#### **III.A. Optimization of Site Layout**

##### **III.A.1. Limitation of development envelope**

Since this is an existing development, the “development envelope” is already determined. However, landscaping to replace impervious surfaces will be integrated wherever practicable.

##### **III.A.2. Preservation of natural drainage features**

Existing trees within the project limits will be preserved wherever feasible. The existing general drainage patterns of the site will be honored.

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

There are no known creeks, wetlands or riparian habitats that are anticipated to be impacted by this development.

##### **III.A.4. Minimization of imperviousness**

Significant amounts of landscaped areas and semi-permeable decomposed granite surfaces are proposed with this development.

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

A project Landscape Architect has been retained to design attractive water efficient landscaping best suited on the surface of self-retaining areas. The Storm Water Control Plan Exhibit reflects the proposed geometry and location of each self-retaining area.

#### **III.B. Use of Permeable Pavements**

The use of permeable pavements is not anticipated with this development.

#### **III.C. Dispersal of Runoff to Pervious Areas**

Dispersal of runoff to landscaped self-retaining areas is proposed with this development.

#### **III.D. Storm Water Control Measures**

This project proposes to integrate a series of storm water self-retaining areas which capture site runoff during light precipitation events in accordance with the objectives of the current edition of the BASMAA Post-Construction Manual for projects in Marin, Sonoma, Napa and Solano Counties. The project will be equipped with self-retaining areas that capture 3-inches of rainfall prior to discharge. Storm water for larger rain events will overtop the self-retaining areas and drain to the southeast in a manner similar to the existing condition. Overland relief is anticipated to allow the site to drain in a manner similar to the existing condition without causing substantial damage to nearby buildings or infrastructure.

#### IV. Documentation of Drainage Design

##### IV.A. Descriptions of each Drainage Management Area

##### IV.A.1. Table 2. Drainage Management Areas

DMA Name	Surface Type	Area (square feet)
Area 1	Concrete, Decomposed Granite & Landscaping	12,445
Area 2	Concrete, Decking & Landscaping	3,320
Area 3	Concrete	460
Area 4	Asphalt, Concrete, Decomposed Granite, Decking, Roof & Landscaping	6,725
Area 5	Concrete, Decomposed Granite, Decking & Landscaping	5,510
Area 6	Asphalt, Concrete & Landscaping	3,930
Area 7	Landscaping	9,785
Area 8	Landscaping	1,825
Area 9	Landscaping	2,220
Area 10	Landscaping	2,605

##### IV.A.2. Drainage Management Area Descriptions

**Area 1** will drain a central portion of the proposed improvements and will consist of concrete, decomposed granite surfaces and landscaping. Area 1 will drain into a designated self-retaining area (Area 7) adjacent to the proposed improvements.

**Area 2** will drain an area behind the existing pool and will consist of concrete, decking and landscaping. Area 2 will drain into a designated self-retaining area (Area 8) adjacent to the proposed improvements.

**Area 3** will drain a new patio behind an existing building and will consist of concrete. Area 3 will drain into a designated self-retaining area (Area 9) adjacent to the proposed improvements.

**Area 4** will drain an area adjacent to the existing restaurant building and will consist of asphalt, concrete, decomposed granite surfaces, roofing and landscaping. Area 4 will drain primarily to the west toward Lincoln Avenue, but an equivalent surface area quantity has been applied to the sizing calculations for a self-retaining area (Area 7) so that an equivalent amount of runoff from impervious surfaces will be captured on site.

Area 5 will drain a new bocce ball court and central area between buildings and patio behind existing guest units and will consist of concrete, decomposed granite surfaces, decking and landscaping. Area 5 will drain into a designated self-retaining area (Area 10) adjacent to the proposed improvements.

Area 6 will drain an area adjacent to the existing restaurant building and will consist of asphalt, concrete, and landscaping. Area 6 will drain primarily to the west toward Lincoln Avenue, but an equivalent surface area quantity has been applied to the sizing calculations for a self-retaining area (Area 9) so that an equivalent amount of runoff from impervious surfaces will be captured on site.

Area 7 will drain itself as well as impervious surfaces on site (Area 1 and Area 4, equivalent) and will consist of landscaping only. The lack of an existing storm drain system in the vicinity of the site improvements makes this area infeasible for use as a bioretention facility.

Area 8 will drain itself as well as impervious surfaces on site (Area 2) and will consist of landscaping only. The lack of an existing storm drain system in the vicinity of the site improvements makes this area infeasible for use as a bioretention facility.

Area 9 will drain itself as well as impervious surfaces on site (Area 3 and Area 6, equivalent) and will consist of landscaping only. The lack of an existing storm drain system in the vicinity of the site improvements makes this area infeasible for use as a bioretention facility.

Area 10 will drain itself as well as impervious surfaces on site (Area 5) and will consist of landscaping only. The lack of an existing storm drain system in the vicinity of the site improvements makes this area infeasible for use as a bioretention facility.

#### IV.B. Tabulation and Sizing Calculations

##### IV.B.1. Table 3. Information Summary for Self-Retaining Area Design

Total Project Site Area:	±0.8 acres
Average Annual Precipitation:	±35.4 inches

##### IV.B.2. Self-Retaining Areas and Areas Draining to Self-Retaining Areas

See Appendix for runoff capture calculations.

#### V. Source Control Measures

##### V.A. Site activities and potential sources of pollutants

BKF Engineers does not anticipate significant potential for pollutants on site.

##### V.B. Sources and Source Control Measures

This project is not anticipated to create substantial new potential pollutant sources.

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

To be determined at time of construction.

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## VI. Storm Water Facility Maintenance

### VI.A. Ownership and Responsibility for Maintenance in Perpetuity

The applicant commits to execute any necessary agreements and/or annex into a fee mechanism, per local requirements. The applicant will accept responsibility for operation and maintenance of facilities until that responsibility is formally transferred.

Storm water treatment facilities described in this report will be owned and maintained in perpetuity by the private owner of the subject property. The applicant will accept responsibility for operation and maintenance of the facilities until such time as this responsibility is formally transferred.

### VI.B. Summary of Maintenance Requirements for Each Storm Water Facility

Routine maintenance is needed to ensure that flow is unobstructed, that erosion is prevented, and that soils are held together by plant roots and are biologically active. Typical maintenance consists of the following:

- Inspect outlets/outfalls for erosion or plugging.
- Inspect side slopes for evidence of instability or erosion and correct as necessary.
- Observe soil at the bottom of the self-retaining area for uniform percolation throughout. Remove any debris or accumulations of sediment.
- Examine the vegetation to ensure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas. When mowing, remove no more than 1/3 height of grasses. Confirm that irrigation is adequate and not excessive. Replace dead plants and remove noxious and invasive vegetation.

## VII. Construction Plan Checklist

Table 4. Construction Plan Checklist

Storm Water Control Plan Page #	Source Control or Treatment Control Measure	See Plan Sheet #s
Attachment B	On-site drain inlets to be marked with "No Dumping" message.	SWCP Exhibit
	Plant selection to minimize irrigation, minimize use of fertilizers and pesticides, and for pest resistance.	Landscape Drawings

## VIII. Certifications

The preliminary design of storm water treatment facilities and other storm water pollution control measures described in this report have been designed in accordance with the current edition of the BASMAA Post-Construction Manual for projects in Marin, Sonoma, Napa and Solano Counties

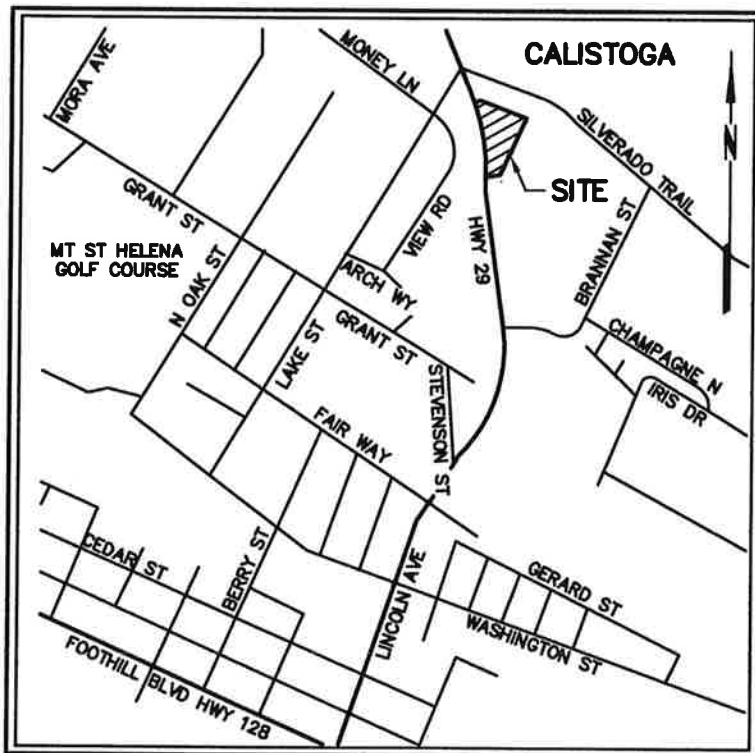


# **ATTACHMENTS**

*Attachment A: Vicinity Map*

**Attachment B: Stormwater Control Plan Exhibit**

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**VICINITY MAP**  
NOT TO SCALE

**ABBREVIATIONS**

APN  
G1  
UP  
SB  
SD  
TD  
TO

**ASSESSOR'S PARCEL NUMBER**  
GATE INLET  
INTEGRATED MANAGEMENT PRACTICE  
SELF-RETAINING AREA  
STORM MAIN  
TOP OF DRIVE

**SYMBOLS & LEGEND**

**EXISTING**

PROPERTY LINE  
RETAINING WALL  
FACE OF CURB  
STORM DRAIN  
ASPHALT  
CONCRETE  
DECOMPOSED GRANITE  
BIORETENTION AREA  
ROOF AREA  
LANDSCAPE AREA

**PROPOSED**

LIGHT POLE  
STREET SIGN  
UTILITY POLE  
CITY ANCHOR  
MANHOLE  
CLEANOUT  
TREE

**PROPOSED**

PROPERTY LINE  
RETAINING WALL  
FACE OF CURB  
STORM DRAIN  
ASPHALT  
CONCRETE  
DECOMPOSED GRANITE  
BIORETENTION AREA  
ROOF AREA  
LANDSCAPE AREA

**DRAINAGE AREAS**

AREA 1 (SMALL)	9,080 SF
LANDSCAPE TIME	3,350 SF
TOTAL	12,430 SF
AREA 2 (SMALL)	1,844 SF
LANDSCAPE TIME	1,375 SF
TOTAL	3,219 SF
AREA 3 (SMALL)	400 SF
LANDSCAPE TIME	0 SF
TOTAL	400 SF
AREA 4 (SMALL)	5,385 SF
LANDSCAPE TIME	1,050 SF
TOTAL	6,435 SF
AREA 5 (SMALL)	5,130 SF
LANDSCAPE TIME	370 SF
TOTAL	5,500 SF
AREA 6 (SMALL)	3,370 SF
LANDSCAPE TIME	0 SF
TOTAL	3,370 SF
AREA 7 (SMALL)	9,745 SF
LANDSCAPE TIME	5,150 SF
TOTAL	14,895 SF
AREA 8 (SMALL)	2,220 SF
LANDSCAPE TIME	2,220 SF
TOTAL	4,440 SF
AREA 9 (SMALL)	2,005 SF
LANDSCAPE TIME	2,005 SF
TOTAL	4,010 SF

# STORM WATER CONTROL PLAN

FOR

## SUNBURST HOTEL

1880 LINCOLN AVENUE  
CALISTOGA, CALIFORNIA  
APN 011-050-041  
SEPTEMBER 2015



JOB NO. 201509083

SHEET 1 OF 1

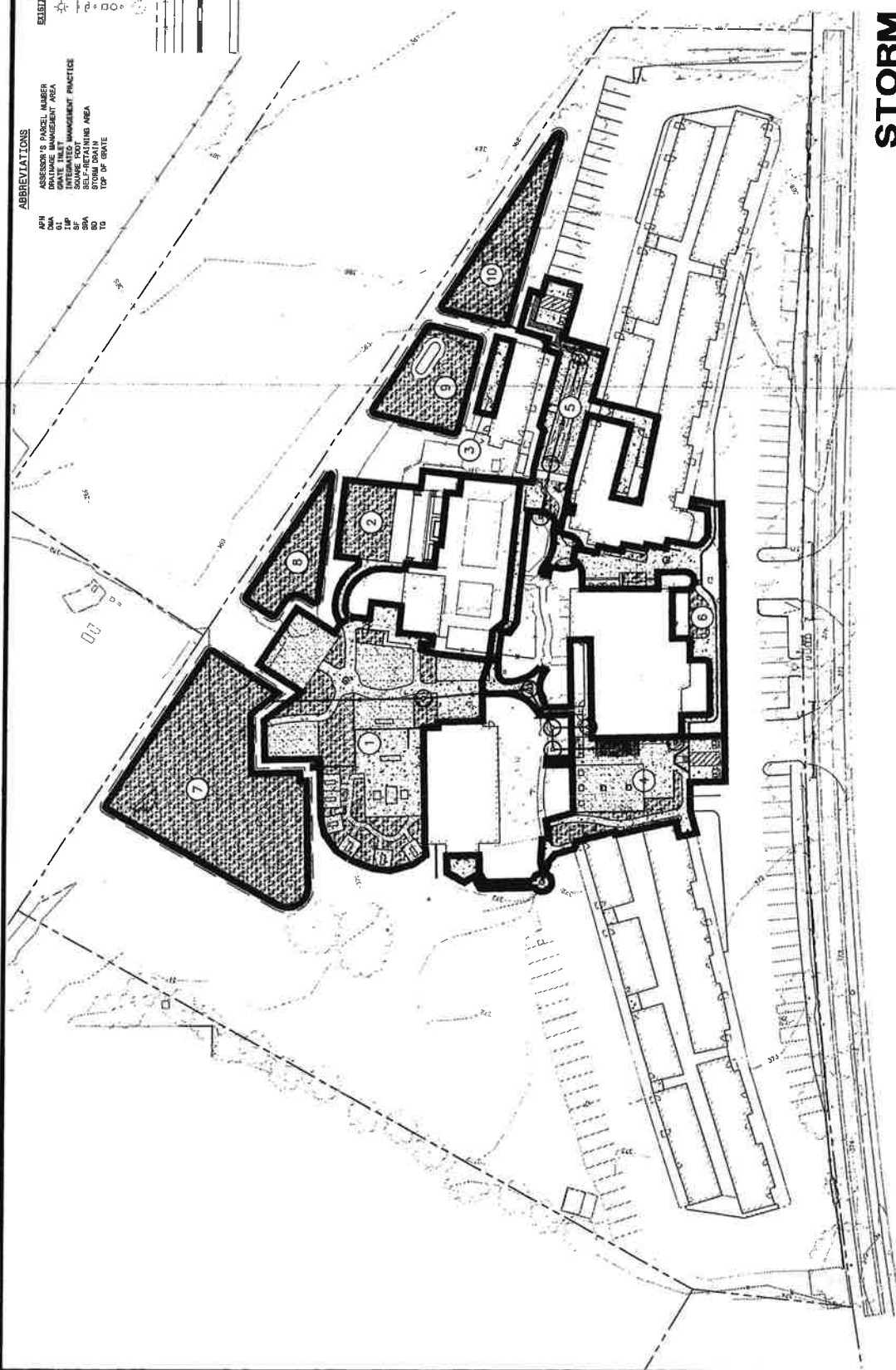
**STORM WATER CONTROL PLAN LEGEND**

○ BIORETENTION AREA (BIA) #

□ SELF-RETAINING AREA (SRA) #

□ INTEGRATED MANAGEMENT PRACTICE (IMP) #

○ PLOTTER'S DASH SHOW MOSES LOGO AND "MO" REGISTRATION IN ACCORDANCE WITH LOCAL REGULATIONS



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# **APPENDICES**

**Self-Retaining Area Sizing Calculations**

**Storm Water IMP Inspection and Maintenance Log (Sample)**

Self-Retaining Area Sizing Calculations

Sunburst Hotel  
 BKF Engineers  
 September 2015



DMA Name	DMA Area (square feet)	Post-project Surface Type	DMA Weighted Runoff Factor	DMA Area x Runoff Factor	Facility Name		
					Area 7		
Area 1	9,090	Hardscape	1	9,090	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
Area 1	3,355	Landscape	0.1	336			
Area 4	5,385	Hardscape	1	5,385			
Area 4	1,050	Landscape	0.1	105			
Area 4	290	Roof	1	290			
Total>				15,206	0.5	7,603	9,785

DMA Name	DMA Area (square feet)	Post-project Surface Type	DMA Weighted Runoff Factor	DMA Area x Runoff Factor	Facility Name		
					Area 8		
Area 2	1,945	Hardscape	1	1,945	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
Area 2	1,375	Landscape	0.1	138			
Total>				2,083	0.5	1,041	1,825

DMA Name	DMA Area (square feet)	Post-project Surface Type	DMA Weighted Runoff Factor	DMA Area x Runoff Factor	Facility Name		
					Area 9		
Area 3	460	Hardscape	1	460	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
Area 6	3,370	Hardscape	1	3,370			
Area 6	560	Landscape	0.1	56			
Total>				3,886	0.5	1,943	2,220

DMA Name	DMA Area (square feet)	Post-project Surface Type	DMA Weighted Runoff Factor	DMA Area x Runoff Factor	Facility Name		
					Area 10		
Area 5	5,135	Hardscape	1	5,135	Sizing Factor	Minimum Facility Size (sf)	Proposed Facility Size (sf)
Area 5	375	Landscape	0.1	38			
Total>				5,173	0.5	2,586	2,605

## Stormwater IMP Inspection and Maintenance Log

Facility Name	
Address	
Begin Date	End Date

Date	IMP ID#	IMP Description	Inspected by:	Cause for Inspection	Exceptions Noted	Comments and Actions Taken

**Instructions:** Record all inspections and maintenance for all treatment IMPs on this form. Use additional log sheets and/or attach extended comments or documentation as necessary. Submit a copy of the completed log with the annual independent inspectors' report to the municipality, and start a new log at that time.

- IMP ID# — Always use ID# from the Operation and Maintenance Manual.
- Inspected by — Note all inspections and maintenance on this form, including the required independent annual inspection.
- Cause for inspection — Note if the inspection is routine, pre-rainy-season, post-storm, annual, or in response to a noted problem or complaint.
- Exceptions noted — Note any condition that requires correction or indicates a need for maintenance.
- Comments and actions taken — Describe any maintenance done and need for follow-up.