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Stormwater Control Plan

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Napa County Planning, Building
& Environmental Services

**STORMWATER CONTROL
PLAN FOR A REGULATED
PROJECT**

**The Carneros Inn – Major
Modifications**

Prepared for:

Carneros Resort and Spa
4048 Sonoma Highway
Napa, CA 94559

Prepared by:

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SUMMIT 

CIVIL STRUCTURAL ELECTRICAL WATER|WASTEWATER PLANNING

Project No. 2018118

Date: August 2018

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Vicinity Map
Civil Improvement Plans
Stormwater Control Plan

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

I. PROJECT DATA

Table 1. Project Data

Project Name/Number	The Carneros Inn / P15-00190
Application Submittal Date	
Project Location	4048 Sonoma Highway Napa, CA 94559 APN: 047-110-027, 047-110-028, 047-100-062
Project Phase No.	N/A
Project Type and Description	Regulated Project – Modifications to existing resort
Total Project Site Area (acres)	1.98 Acres Project Area (22.89 Acres Total Resort)
Total New and Replaced Impervious Surface Area	55,998 sqft (1.29 acres)
Total Pre-Project Impervious Surface Area	66,425 sqft (1.52 acres)
Total Post-Project Impervious Surface Area	55,998 sqft (1.29 acres)

II. SETTING

II.A. Project Location and Description

The Carneros Inn project site is approximately 1.98 acres and located at 4048 Sonoma Highway in Napa, California. The project site is located approximately 3 miles southwest of the City of Napa and has approximate coordinates of 38.2558° N & 122.3347° W. The neighboring parcels are agricultural and residential lots. See the Vicinity Map.

The project will be focused in three construction areas. The Hilltop area at the northern portion of the site, the Hall RV site at the southern portion of the site, and the Entry and Farm area located to the west. The Hilltop area modifications include reconstruction of the pool area, relocation of 6 RV units, improvements to driveway turnaround and construction of 3 parking spaces. The Hall RV site modifications include the removal of 6 RV units and the construction of a 2 adjacent pickleball courts, with the remaining area to be landscaped. The work at the Entry and Farm area includes a new entrance drive alignment and related parking lot modifications, paths, and landscaping modifications. Refer to Stormwater Control Plan.

II.B. Existing Site Features and Conditions

The existing site is developed and currently serves as the Carneros Resort and Spa. Access to the site is through two, short paved drives from Sonoma Highway and Old Sonoma Road. The Entry & Farm site has an existing pool, spa building, driveway, and parking. The Hilltop Site has an existing parking lot, resort buildings, and a pool. The Hall RV site contains RV units and a small parking lot. Structures on the site include the cottages, pools, office

buildings, restaurants, and spa buildings. The site is bound by Sonoma Highway to the south, private residences to the west, northwest, and north and agriculture to the east.

Based on mapping from the National Resources Conservation Service (NRCS) Web Soil Survey, the project area is 83% Haire Loam and 17% Bressa-Dibble Complex, which are of the Hydraulic Soil Group D. According to the NRCS, Group "D" Soils have a very slow infiltration rate (high runoff potential) when thoroughly wet, consisting chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Runoff from the property generally flows to the southwest. Stormwater is collected at various drain inlets along the property and is ultimately conveyed to Napa River.

II.C. Opportunities and Constraints for Stormwater Control

Stormwater treatment facilities have been integrated into the planning and design of the proposed improvements. The following potential opportunities and constraints were considered in determining the best stormwater control design for this development.

Opportunities for the Entry & Farm site include landscaped areas located southwest of the parking lot and an orchard area located near the southeastern end. Bioretention Facilities will be installed in these locations to treat stormwater runoff prior to discharge from the site. Runoff will be conveyed to the Bioretention facilities via surface flows. Once in the bioretention basin, the water will be treated via infiltration.

Opportunities for the Hilltop site include the vegetated area to the northeast and west side of the proposed improvements. A vegetated swale will be installed along the eastern edge of the Hilltop. A new bioretention basin will also be installed in the eastern corner of the Hilltop site. Runoff will be conveyed to the proposed vegetated swale via surface flow, where it will then drain into the proposed bioretention basin.

Opportunities in the Hall RV site include the proposed reduction of impervious surface are through the relocation of the RVs and impervious paths.

Constraints include the existing grades and existing structures.

LOW IMPACT DEVELOPMENT DESIGN STRATEGIES

II.D. Optimization of Site Layout

II.D.1. Limitation of development envelope

The Carneros Inn development footprint is expanded within a previously developed A-1 Market parcel. LID Facilities are proposed to be adjacent to the proposed impervious areas not draining to self-treating areas.

II.D.2. Preservation of natural drainage features

The general slopes of the site create existing, naturally defined channels of stormwater runoff. The existing drainage pattern for the site shall be preserved where feasible.

II.D.3. Setbacks from creeks, wetlands, and riparian habitats

No creek, wetland, or riparian habitat setbacks apply to the proposed improvements.

II.D.4. Minimization of imperviousness

Walkways and parking areas are designed to the minimum widths necessary without compromising public safety and a walkable environment. Landscape areas are used instead of decorative impervious areas. Existing trees will be preserved to the maximum extent practicable.

II.D.5. Use of drainage as a design element

Grass-line interceptor swales adjacent to the Hilltop Site shall be utilized for both treatment and aesthetics. The project will utilize self-retaining and bio-retention areas comprised of native grasses and trees. Native flora in the receiving area provides infiltration and treatment.

II.E. Use of Permeable Pavements

Permeable pavements are proposed to be used in this project within the Entry & Farm site. Design of pervious pavers shall be in accordance with the information in "Criteria for Pervious Pavements" on page 4-6 of the BASMAA Post-construction Manual.

II.F. Dispersal of Runoff to Pervious Areas

Runoff will be directed to landscape areas to the maximum extent practicable.

II.G. Stormwater Control Measures

This project will follow the "Design Guidance for Stormwater Treatment and Control for Projects in Marin, Sonoma, Napa, and Solano Counties (DGSTC)", prepared for the Bay Area Stormwater Management Agencies Association (BASMAA). Bioretention LID Facilities are sized at a minimum of 4% of the equivalent tributary area, as specified in the Phase II Stormwater National Pollutant Discharge Elimination System (NPDES) Permit.

Eleven Bioretention LID Facilities shall be located adjacent to new and replaced impervious areas varying in size depending on the impervious areas for which they serve. These facilities are designed in accordance with the Bioretention Facility Design Criteria beginning on Page 4-3 of the DGSTC, as well as Figures 4-1 and 4-2. Locations of LID facilities can be seen in the Drainage Management Areas exhibit attached.

III. DOCUMENTATION OF DRAINAGE DESIGN

III.A. Descriptions of Each Drainage Management Area

III.A.1. Table of Drainage Management Areas

Table 2. Drainage Management Areas

DMA Region	Pervious Area (sqft)	Impervious Area (sqft)	Pervious Pavers (sqft)	Total Area (sqft)
FM - 1	282	9528	--	9,810
FM - 2	--	2,751	--	2,751
FM - 3	--	1,959	3,629	5,583
FM - 4	64	4,650	--	4,714
FM - 5	2,792	--	--	2,792
FM - 6	3,081	--	--	3,081
FM - 7	--	2,676	--	2,676
FM - 8	--	2,938	--	2,938
Hall RV	4,835	4,352	--	9,187
Hilltop - 2	1,357	3,624	--	4,981
Hilltop - 3	7,943	3,090	--	11,033
Hilltop - 4	8,822	20,430	--	29,252

DMA Entry & Farm 1: Totaling 9,810 square feet. Runoff drains southeast towards the bioretention facilities along the edge of the curb. Due to the existing, proposed, and required grades for bioretention facilities, the bioretention facility for this DMA has to be broken up into two parts, but will be connected with a bubble up structure. The bioretention facilities have a total area of 400 Square Feet.

DMA Entry & Farm 2: Totaling 2,751 square feet, this area consists of the proposed driveway from Old Sonoma Highway and connects to an existing resort road and an existing parking lot. Runoff drains west across the driveway to vegetated self-retaining areas. The self-retaining areas are located adjacent to the driveway on the west and have an area of 1,852 square feet (greater than the required 2:1 ratio).

DMA Entry & Farm 3: Totaling 5,583 square feet, this area consists of the pervious paver walkway just north of the orchard as well as the designated section of impervious roof/patio. Runoff from this site drains south to bio-retention area 3-A which has a total area of 95 square feet.

DMA Entry & Farm 4: Totaling 4,714 square feet, this area consists of the concrete terrace and walkway to the east of the orchard. Runoff drains southwest towards the orchard. The runoff goes to bio-retention facility 4-A that has a total area of 196 square feet.

DMA Entry & Farm 5: Totaling 2,792 square feet, this DMA is made up of entirely pervious area and it is self-treating.

DMA Entry & Farm 6: Totaling 3,081 square feet, this DMA is made up of entirely pervious area and it is self-treating.

DMA Entry & Farm 7: Totaling 2,576 square feet. Runoff drains south towards the bioretention facility along the edge of the curb. The bioretention facility has a total area of 110 Square Feet.

DMA Entry & Farm 8: Totaling 2,938 square feet. Runoff drains south towards the bioretention facility along the edge of the curb. The bioretention facility has a total area of 120 Square Feet.

DMA Hall RV Site: Totaling 9,187 square feet, this area consists of two proposed pickleball courts and the surrounding landscaped area. Runoff from this site drains south and southeast around the proposed pickle into one of two bioretention facilities located on either side of the proposed pickleball courts. This bioretention facility is broken into two sections with 130 and 71 square feet respectively.

DMA Hilltop 2: Totaling 4,981 square feet, this area consists of the improved segments of an existing vehicular turnaround with emergency access. Runoff drains towards the center of the turnaround oval where bioretention facility H 2-A is located. Bioretention facility H2-A is 150 square feet.

DMA Hilltop 3: Totaling 11,033 square feet, this area consists of the six relocated RVs from the Hall RV site, wood decks, and some landscaped areas. Runoff from this area drains northwest to a vegetated swale that runs along the northeast edge of the property. Runoff is then conveyed to bioretention facility H 3-A, located southeast of this area. Bioretention facility H 3-A has an area of 165 square feet.

DMA Hilltop 4: Totaling 29,252 square feet, this area is located on the eastern corner of the Hilltop site. This area consists of the reconstructed pool area. Runoff from this area is collected by drains. Runoff is then conveyed to a stone energy dissipater at the nearby vegetated swale via storm drains. Runoff then flows long the vegetated swale until it enters Bioretention basin H 4-A. Bioretention basin H 4-A has an area of 860 square feet and is located at the eastern corner of this site.

III.A.2. Self-Retaining Areas

Table 3. Self-Retaining Areas

DMA Region	Area (square feet)
FM2 – A	815
FM2 - B	1,037

III.A.3. Areas Draining to Self-Retaining Areas

Table 4. Areas Draining to Self-Retaining Areas

DMA Region	Area (square feet)	Post-project Surface Type	Runoff Factor	Receiving self-retaining DMA	Receiving self-retaining DMA Area (square feet)
FM - 2	2,751	Asphalt	1.0	FM2 – A & B	1,852

III.A.4. Areas Draining to Bioretention Facilities

Table 5. LID Facility 1

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: FM1-A&B		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
FM 1	9,528	Asphalt	1.0	9,528	0.04	383	400
FM 1	282	Landscape	0.1	28.2			
Total>				9556.2	0.04	383	400

Table 6. LID Facility 2

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: FM 3A		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
FM - 3	1,959	Asphalt	1.0	1,959	0.04	93	95
FM - 3	3,629	Pervious Pavers	0.1	362.9			
Total>				2321.9	0.04	93	95

Table 7. LID Facility 3

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: FM-4A		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
FM - 4	64	Landscape	0.1	6.4	0.04	195	200
FM - 4	4,850	Asphalt	1.0	4,850			
Total>				4,856.4	0.04	195	200

Table 8. LID Facility 4

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: FM-7A		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
FM - 7	2,676	Asphalt	1.0	2,676			
Total>				2,676	0.04	108	110

Table 9. LID Facility 5

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: FM-8A		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
FM - 8	2,938	Asphalts	1.0	2,938			
Total>				2,938	0.04	118	120

Table 10. LID Facility 6

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: RV – 1 & 2		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
RV	4,352	Asphalt	1.0	4,352			
RV	4,835	Landscape	0.1	483.5			
Total>				4,835.5	0.04	194	201

Table 11. LID Facility 7

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: H2-A		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
FM - 4	1,357	Landscape	0.1	137.5	0.04	150	150
FM - 4	3,624	Asphalt	1.0	3,624			
Total>				3,761.5	0.04	150	150

Table 12. LID Facility 8

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: H3-A		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
FM - 4	7,943	Landscape	0.1	794.3	0.04	155	165
FM - 4	3,090	Asphalt	1.0	3,090			
Total>				3,884.3	0.04	155	165

Table 13. LID Facility 9

DMA Region	DMA Area (ft ²)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor (ft ²)	Facility Name: H4-A		
					LID Sizing factor	Minimum LID Size (ft ²)	Proposed LID Size (ft ²)
FM - 4	8,822	Landscape	0.1	882.2	0.04	852	860
FM - 4	20,430	Asphalt	1.0	20,430			
Total>				21,312.2	0.04	852	860

IV. SOURCE CONTROL MEASURES

IV.A. Site activities and potential sources of pollutants

- On-site Storm Drain Inlets
- Parking Areas
- Landscape Maintenance

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

- Parking areas shall be designed to minimize impervious surface areas and graded to direct runoff to nearby LID Facilities to treat and remove oil and petroleum hydrocarbons.
- Energy dissipaters constructed of rip rap shall be specified at the outlets of new and reconstructed storm drains and swales to minimize erosion.
- Grass lined swales shall be incorporated into the design to treat runoff and minimize erosion.
- Existing trees, shrubs and groundcover shall be preserved where feasible.
- Plant species tolerant of saturated soil conditions shall be specified in landscaped areas to be utilized for stormwater infiltration and treatment.
- Trash storage areas shall be paved and stormwater from adjacent areas shall not be directed to the storage area. Containers shall have lids.
- All roofs, gutters, and downspouts made of unprotected metals shall discharge to landscaped areas designed to infiltrate and detain stormwater runoff.

Table 14. Source Control Table

Potential source of runoff pollutants	Permanent source control BMPs	Operational source control BMPs
On-site Storm Drain Inlets	Mark all inlets with the words "No Dumping! Flows to Creek" or similar.	Maintain and periodically replace inlet markings. Provide stormwater pollution prevention information to new site owners, lessees, or operators. See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance"
Landscaping/Pesticide Use/Ground Maintenance	State that final landscaping will accomplish all the following: - Preserve existing native trees, shrubs, and ground cover to maximum extent possible	Maintain landscaping using minimum or no pesticides See applicable operational BMPs in Fact Sheet SC-41, "building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks

	<ul style="list-style-type: none"> - Design landscaping 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. - Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. - Consider using pest-resistant plants, especially adjacent to hardscape. <p>To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.</p>	Provide IPM information to new owners, lessees, and operators
Parking Areas		Sweep parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.
Pools, spas, ponds, decorative fountains and other water features	Pool will not be connected to the sewer	<p>Copper based algaecides are not to be used</p> <p>Water will not be discharged into the street when pool is drained</p> <p>Filters will not be cleaned in the street or near a storm drain</p> <p>Cartridge filters will be rinsed onto a dirt area filter residue will be spade into soil</p>

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

All Source Control BMPs listed in the previous section will be implemented with corresponding and appropriate features, materials, and methods of construction.

V. STORMWATER FACILITY MAINTENANCE

V.A. Ownership and Responsibility for Maintenance in Perpetuity

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. The owner then accepts full responsibility for the proper operation and maintenance of all stormwater facilities.

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

Any maintenance of all bioretention facilities will be financed and implemented by Carneros Inn. All facilities shall be inspected annually and documented. Any necessary repairs to facilities shall also be documented. Updated information, including contact information, must be provided to the municipality if property is sold and whenever designated individuals or contractors change.

VI. CONSTRUCTION CHECKLIST

Table 15. Construction Checklist

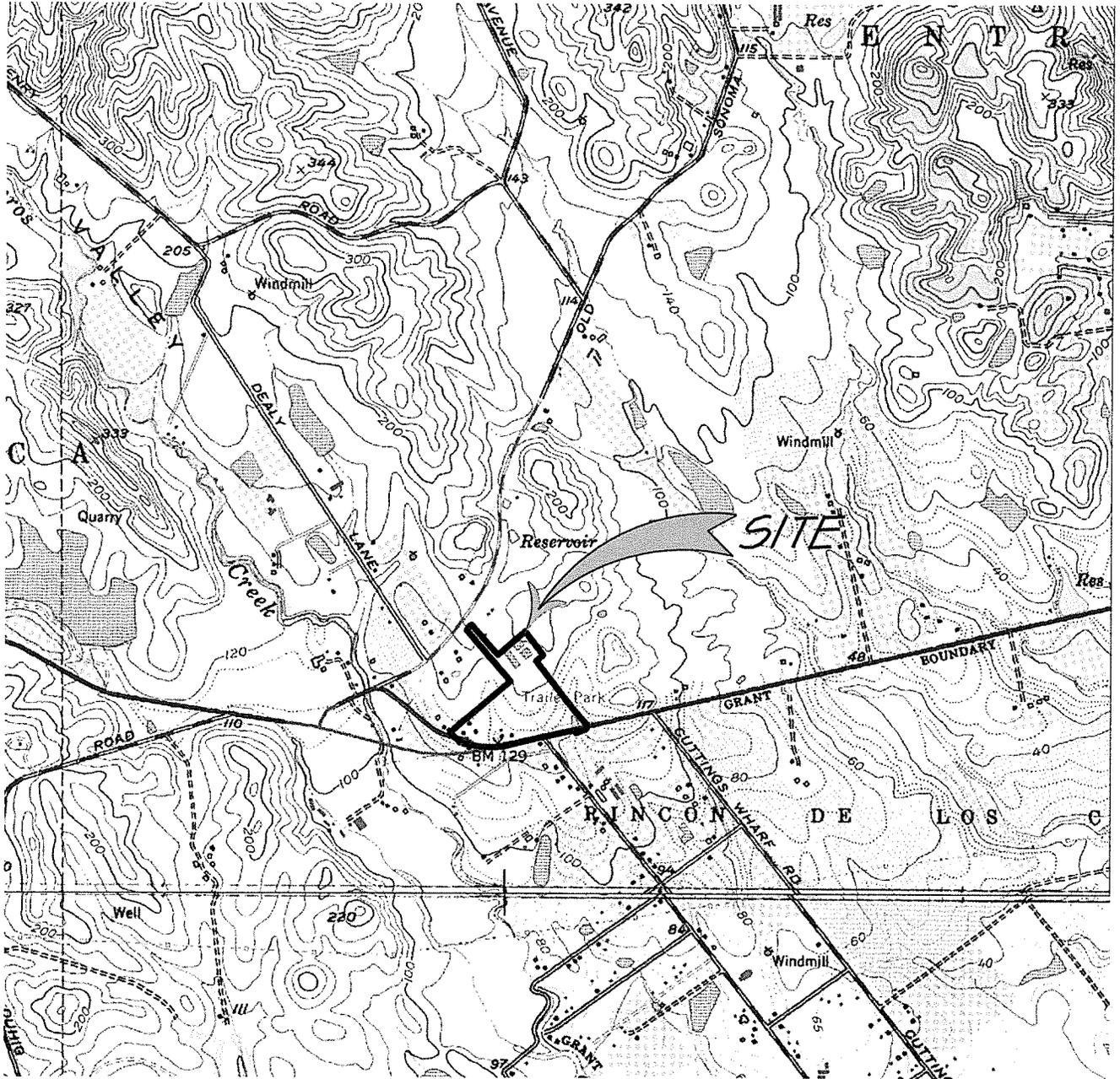
Stormwater Control Plan Page #	Source Control or Treatment Control Measure	See Plan Sheet #s
5	Self-retaining area	C4.0
6-8	Bio-retention facilities	C4.0, C4.1, C4.2

VII. CERTIFICATIONS

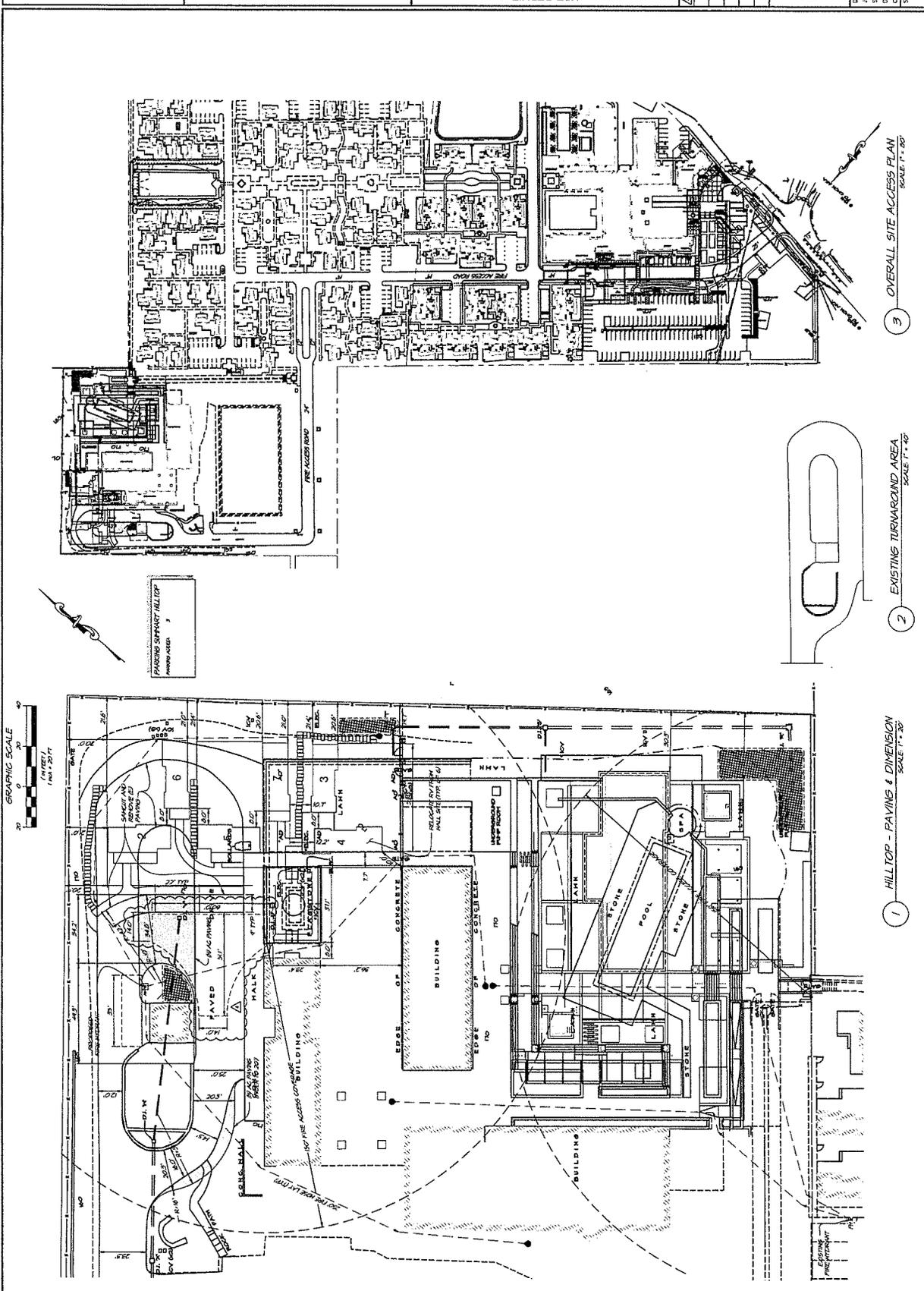
The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA *Post-Construction Manual*.

VIII. ATTACHMENTS

CARNEROS INN USGS QUAD MAP



SCALE: 1" = 2000'



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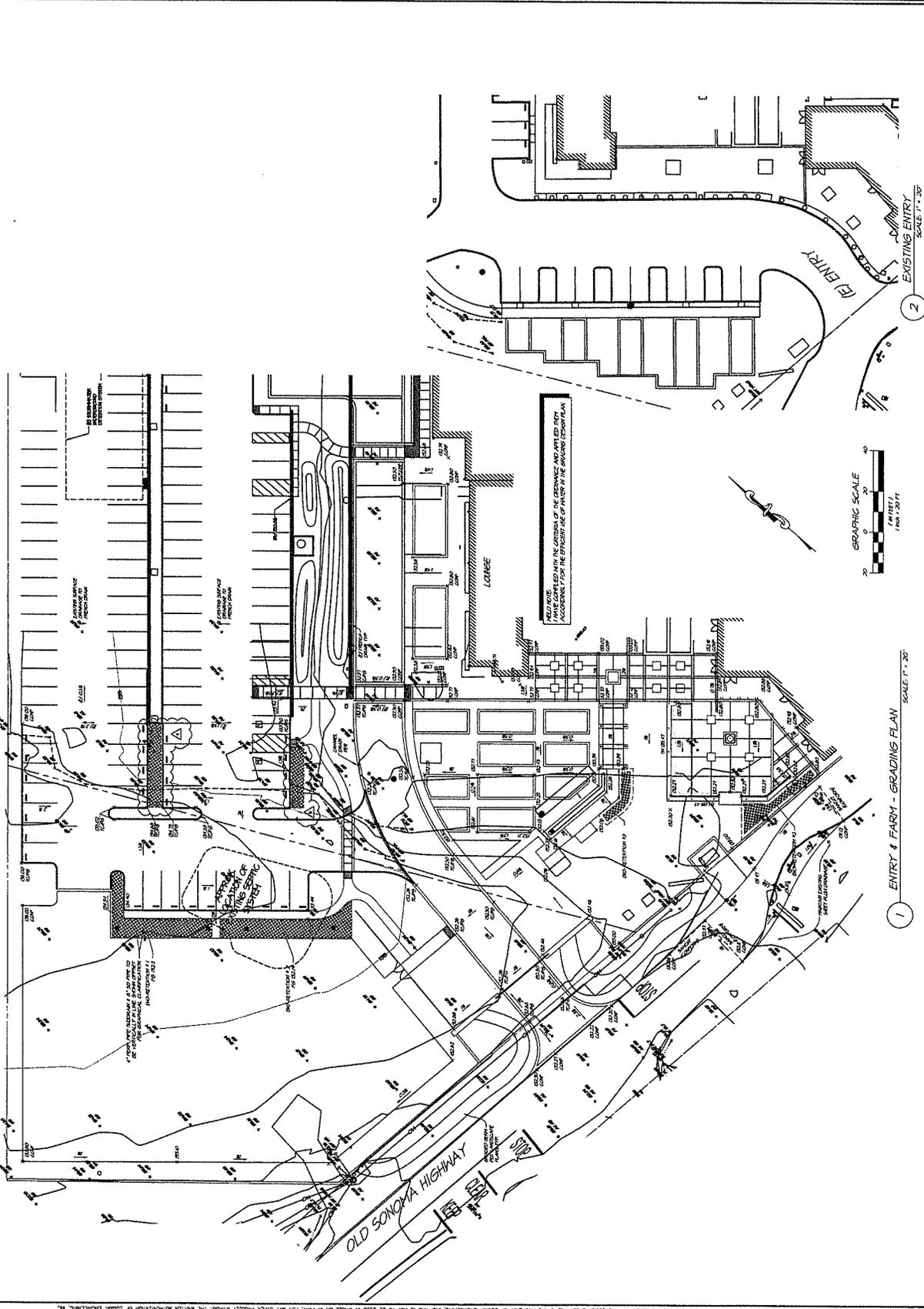
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1 ENTRY & FARM - GRADING PLAN SCALE 1" = 20'

2 EXISTING ENTRY SCALE 1" = 20'



ENTRY & FARM GRADING PLAN

USE PERMIT

THE CARNEROS INN
4048 SOMOMA HIGHWAY
NAPA, CA 94559

APN 047-10-008, 047-100-082, 047-10-027 & 028

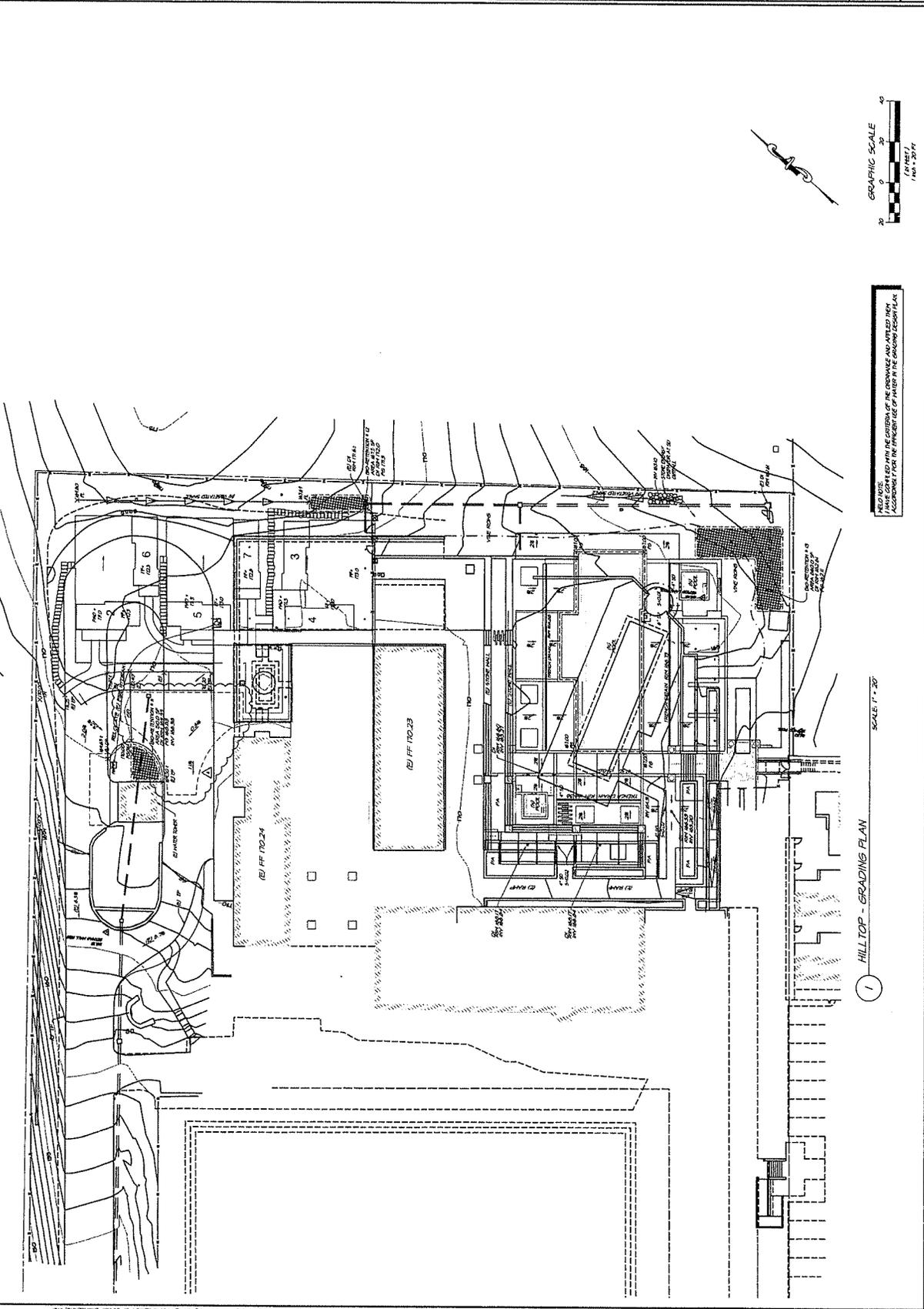
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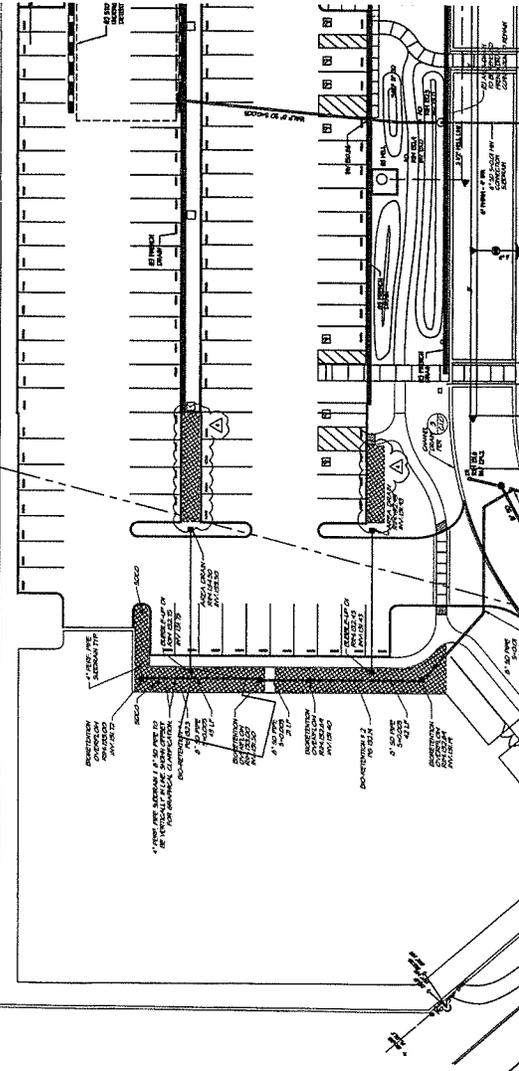
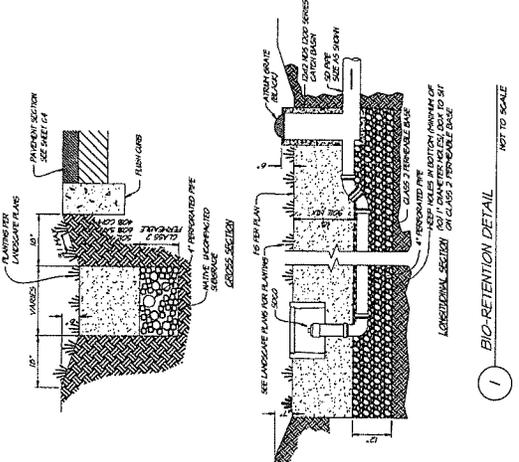
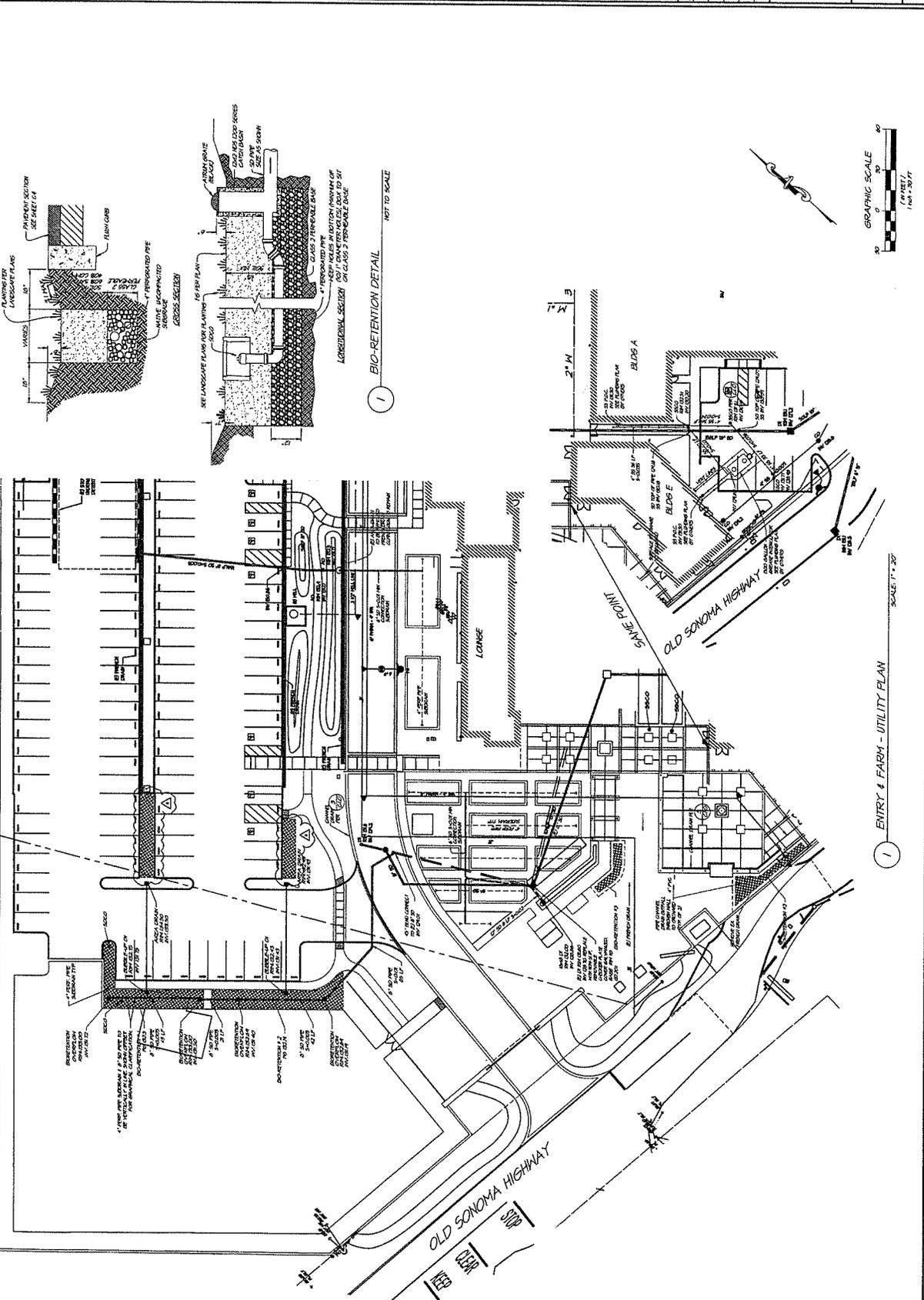


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C3.1

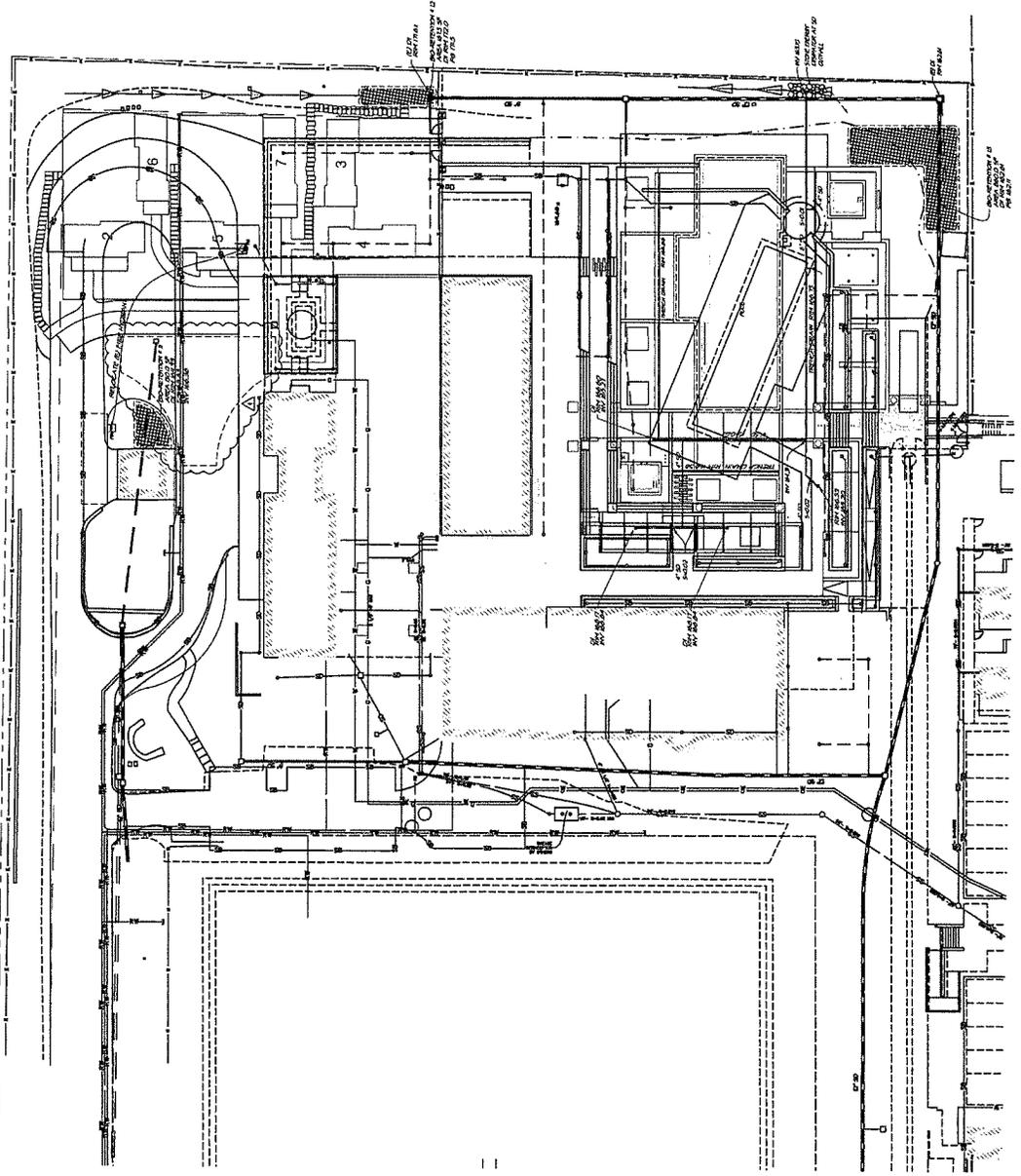


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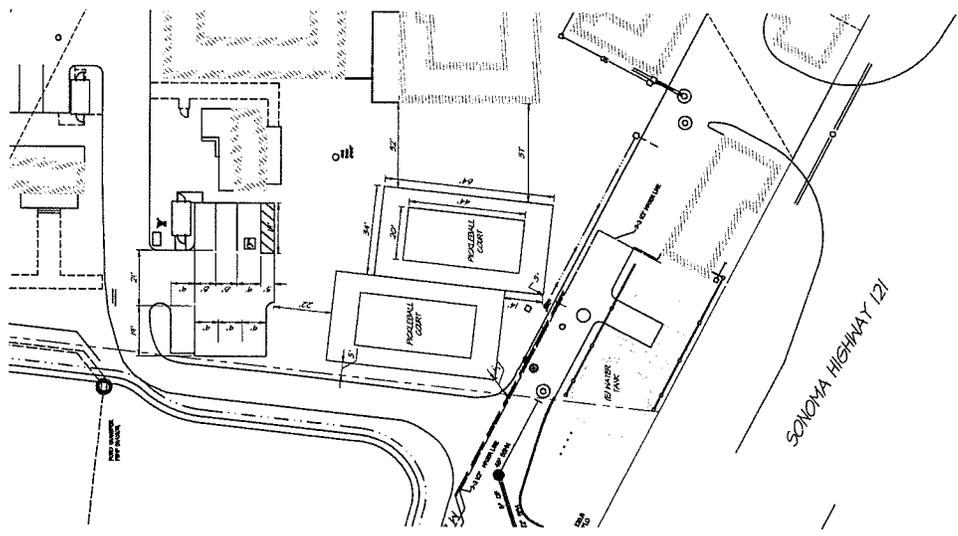


1 HILLTOP - GRADING PLAN
 SCALE: 1" = 20'

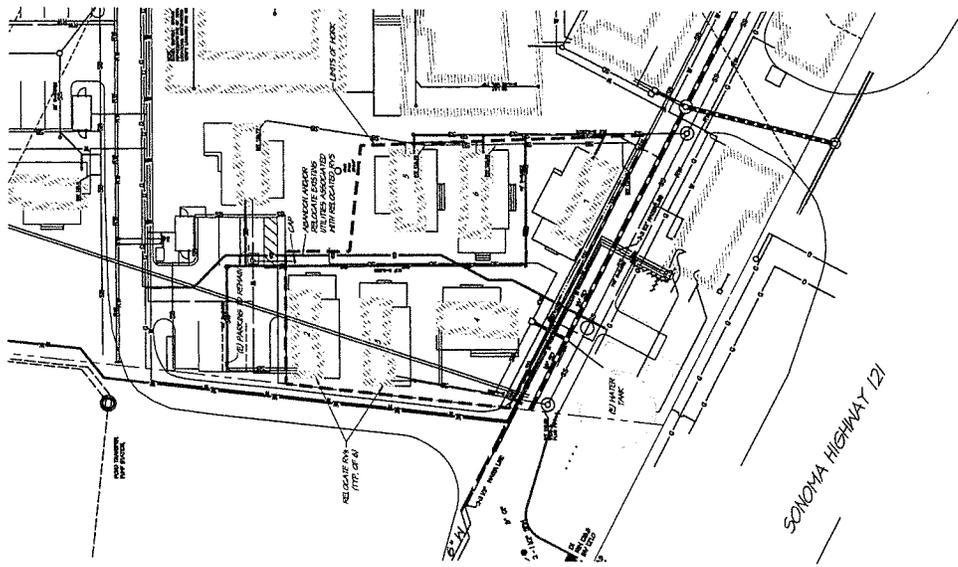
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1 HALL RV SITE - DIMENSION PLAN
SCALE: 1" = 20'



1 HALL RV SITE - DEMO PLAN
SCALE: 1" = 20'

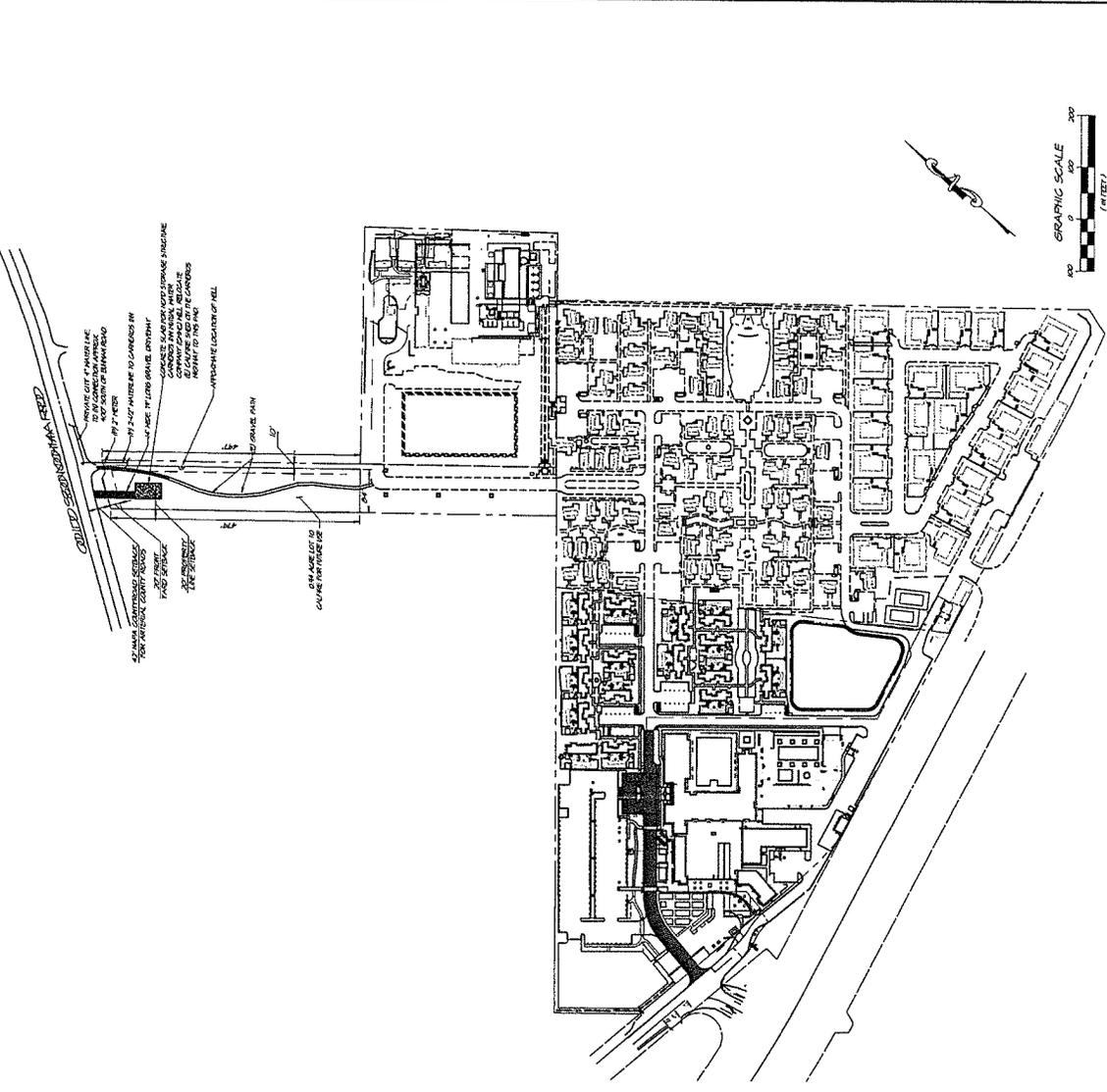
HALL RV SITE
DEMO & UTILITY
PLAN
C4.2

GRAPHIC SCALE
0 20 40
FEET
0 20 40
METERS

PLOTTED ON: 8/10/2018 2:55 PM

P:\2018\2018118 CARNEROS RESORT AND SPA\CAD\CONCRETE PERMITS\0118-C4.2-UTIL.DWG

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1 OVERALL SITE UTILITY PLAN

SCALE: 1" = 100'

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P:\JORDAN\1118 CARNEROS RESORT AND SPA\CON\CON\USE #1864\1118-C4-3-UT.LWG

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THE CARNEROS INN DRAINAGE MANAGEMENT AREAS

PROPOSED STORMWATER CONTROL PLAN AREAS CALCULATIONS

DMA #	TOTAL AREA (SF)	PROPOSED IMPERVIOUS AREA (SF)	IMPERVIOUS RUNOFF FACTOR	PROPOSED PERVIOUS AREA (SF)	PERVIOUS RUNOFF FACTOR	PERVIOUS RUNOFF FACTOR	PERVIOUS RUNOFF FACTOR	REQUIRED BIO-RETENTION OR TREATMENT AREA (SF)	PROVIDED TREATMENT AREA (SF)
FM-1	9610	9526	1.0	282	0.1	0.1	0.1	393	400
FM-2	2751	2751	1.0	---	0.1	0.1	0.1	*1376	1652
FM-3	5583	1959	1.0	---	0.1	0.1	0.1	93	95
FM-4	4714	4650	1.0	64	0.1	0.1	0.1	195	200
FM-5	2782	---	1.0	2782	0.1	0.1	0.1	SELF TREATING	N/A
FM-6	3081	---	1.0	3081	0.1	0.1	0.1	SELF TREATING	N/A
FM-7	2678	2676	1.0	---	0.1	0.1	0.1	108	110
FM-8	2338	2338	1.0	---	0.1	0.1	0.1	118	120

LEGEND

- DMA BOUNDARY
- IMPERVIOUS SURFACE
- PERVIOUS AREA
- BIO RETENTION AREA
- PERVIOUS PAVEMENT AREA
- SELF-RETAINING AREA

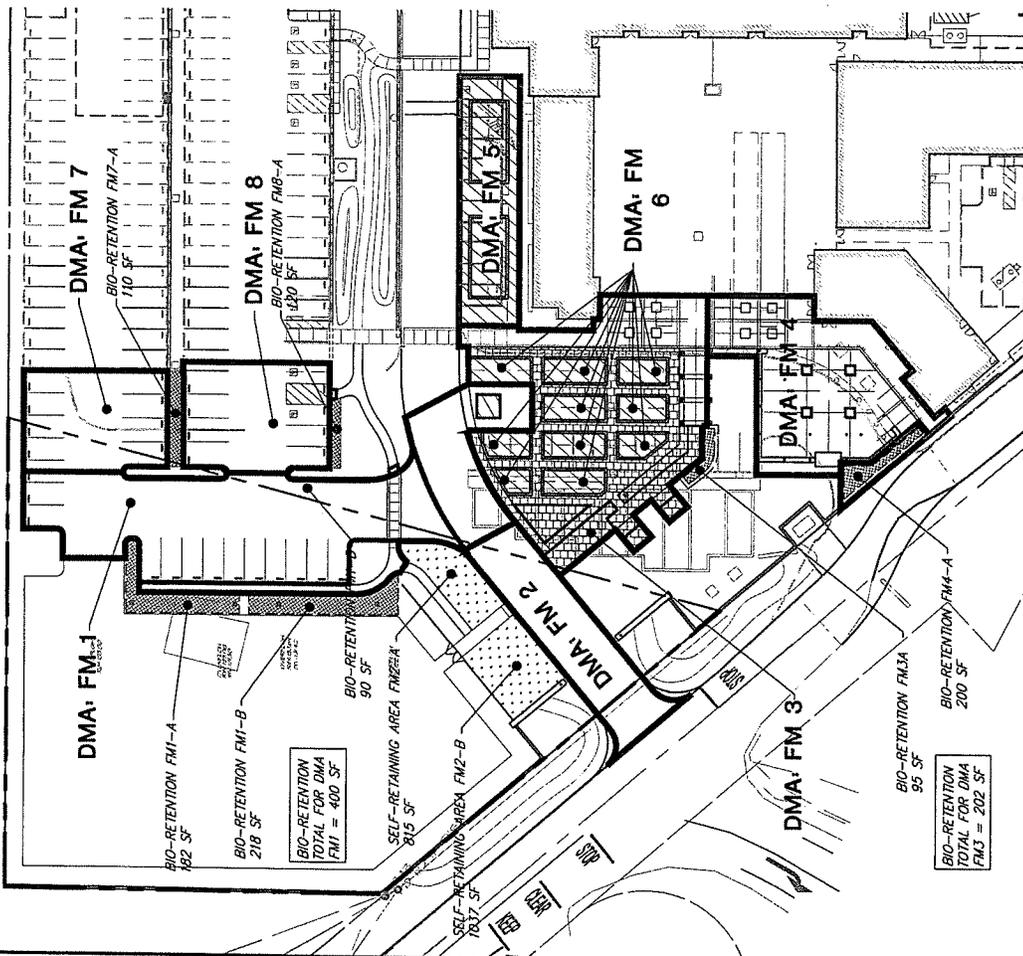


PROJECT NO. 2018118 DATE 2018-08-10
 BY TF CHK RP SHT NO. 1 OF 3



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 707-527-0775 • www.summit-sr.com

THE CARNEROS INN
 4048 SONOMA HIGHWAY
 NAPA, CA 94559
 APN 047-110-003, 047-100-082,
 047-110-027 & 028



ENTRY AND FARM AREA

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THE CARNEROS INN DRAINAGE MANAGEMENT AREAS

PROPOSED STORMWATER CONTROL PLAN AREAS CALCULATIONS

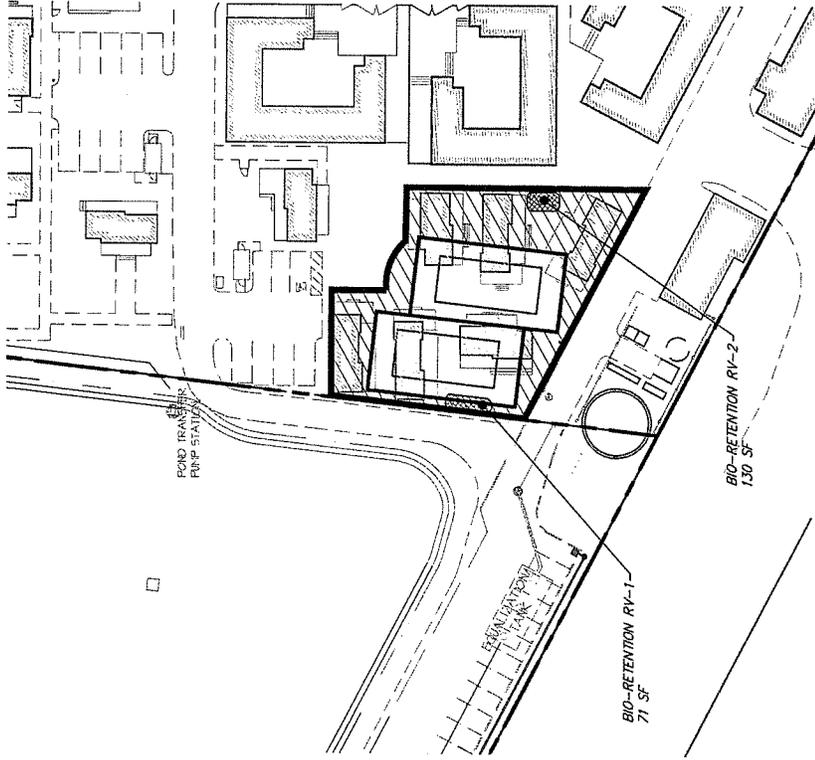
DMA #.	TOTAL AREA (SF)	PROPOSED IMPERVIOUS AREA (SF)	IMPERVIOUS RUNOFF FACTOR	PROPOSED PERVIOUS AREA (SF)	PERVIOUS RUNOFF FACTOR	PERVIOUS PAVERS FACTOR	REQUIRED BIORETENTION TREATMENT AREA (SF)	PROVIDED TREATMENT AREA (SF)
RV	9187	4352	1.0	4835	0.1	0.1	184	201

LEGEND

-  DMA BOUNDARY
-  IMPERVIOUS SURFACE
-  PERVIOUS AREA
-  BIO RETENTION AREA



HALL RV SITE



PROJECT NO. 2018118 DATE 2018-08-10
 BY JF CHK RP SHT NO 3 OF 3



THE CARNEROS INN
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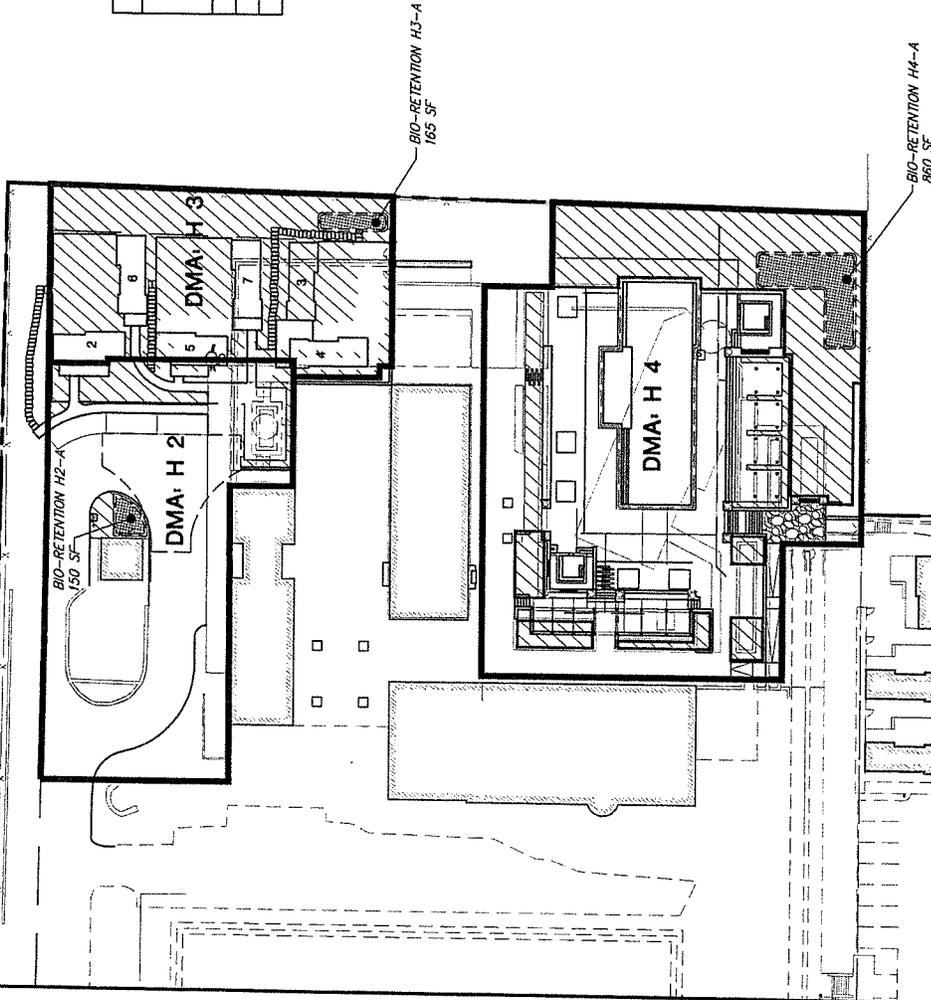
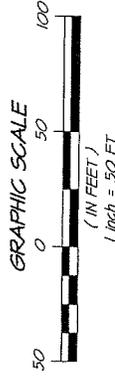
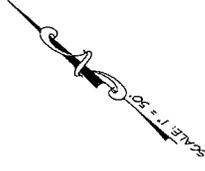
THE CARNEROS INN DRAINAGE MANAGEMENT AREAS

PROPOSED STORMWATER CONTROL PLAN AREAS CALCULATIONS

DMA #	TOTAL AREA (SF)	PROPOSED IMPERVIOUS AREA (SF)	IMPERVIOUS RUNOFF FACTOR	PROPOSED PERVIOUS AREA (SF)	PERVIOUS RUNOFF FACTOR	PERVIOUS PAVERS FACTOR	REQUIRED BIOMATI ON TREATMENT AREA (SF)	PROVIDED TREATMENT AREA (SF)
H-2	4981	3624	1.0	1357	0.1	-	150	150
H-3	11033	3090	1.0	7943	0.1	-	195	165
H-4	29252	20430	1.0	8822	0.1	-	852	860

LEGEND

-  DMA BOUNDARY
-  IMPERVIOUS SURFACE
-  PERVIOUS AREA
-  BIO RETENTION AREA



HILLTOP AREA

PROJECT NO. 2018118 DATE 2018-08-10
BY TE CHK RP SHT NO 2 OF 3



THE CARNEROS INN
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APN 047-110-003, 047-100-082,
047-110-027 & 028

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Carneros Inn
Project No. 2018118
Date: August 2018

SUMMIT ENGINEERING, INC.
Stormwater Control Plan

SUMMIT 
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