Project Name: Cotati Commons

Date: 9/27/24

Storm Water Low Impact Development Submittal Coversheet

To be submitted with all SW LID submittals

1. Submittal Information:

Submittal Date: 9/27/24

Initial SW LIDS ☑ **Final SW LIDS** ☐

Design Manual Used for design:

- ☐ 2005 Standard Urban Storm Water Mitigation Plan
- ☐ 2011 Storm Water Low Impact Development Technical Design Manual
- ☑ 2017 Storm Water Low Impact Development Technical Design Manual

2. Applicant Information:

Applicant Name (Owner or Developer): City Ventures

Mailing Address: 444 Spear Street Suite 200

City/State/Zip: San Francisco, CA 94105

Phone/Email/Fax: samatha@cityventures.com

Project Name: Cotati Commons

Date: 9/27/24

Storm Water Low Impact Development Submittal Coversheet

To be submitted with all SW LID submittals

3. Project Information:

Project Name: Cotati Commons

Site Address: North-west intersection of Gravenstein Hwy and Redwood Dr

City/State/Zip: Cotati, CA 94931

APN (s): 144-050-007; 046-286-011

Permit # (s):

Subdivision	✔	Grading Permit	☐	Building Permit	☐	Design Review	☐
Use Permit	☐	Hillside Development	☐	Encroachment	☐	Time Extension	☐

Other:

Project Name: Cotati Commons

Date: 9/27/24

City of Santa Rosa

Storm Water Low Impact Development Submittal Coversheet

To be submitted with all SW LID submittals

4. Design Information:

Narrative:

Project Description

- [x] Description of proposed project type, size, location, and any specific uses or features.
- [x] Description of any sensitive features (creeks, wetlands, trees, etc.) and whether they are going to be preserved, removed or altered.
- [x] Description of the existing site.
- [x] Description of how this project triggers these requirements (impervious area, CALGreen, 401 Permit, etc.).
- [ ] Describe any "on-site offset" used.

Pollution Prevention and Runoff Reduction Measures

- [x] Description of all proposed pollution prevention measures (street sweeping, covered trash enclosures, indoor uses, etc).
- [ ] Description of all Runoff Reduction Measures (Interceptor Trees, Impervious Area Disconnection, and/or Alternative Driveway Design).

Type of BMPs Proposed

- [x] Description of the types of BMPs selected including priority group that each is in.
- [ ] Description of level of treatment and volume capture achieved for each BMP.

Maintence

- [x] Description of maintenance for each type of BMP.
- [ ] Description of funding mechanism.
- [x] Designation of Responsible Party.

Project Name: Cotati Commons

Date: 9/27/24

City of Santa Rosa

Storm Water Low Impact Development Submittal Coversheet

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Exhibits:

Proposed SW LID Exhibit:

- [x] Exhibit should include: street names, property lines, strom drainage system, waterways, title block, scale and north arrow.
- [x] Tributary areas shown for all inlets (including off-site drainage areas).
- [ ] C value for each tributary area.
- [ ] Soil Type of existing site.
- [x] New or replaced impervious area shown.
- [x] All inlets and BMP, shown (including unique identifier).
- [ ] All interceptor trees shown.
- [ ] All proposed BMPs shown including dimensions.

Existing Condition Exhibit

- [x] Exhibit should include: street names, property lines, proposed storm drainage system, waterways, title block, scale, and north arrow.
- [ ] Soil Type of existing site.
- [ ] Proposed tributary areas shown for all proposed inlets (including offsite drainage areas). Existing impervious areas.
- [x] Existing impervious area.

BMP Details:

- [ ] Detail for each type of BMP selected- provide a preliminary 8.5”x11” detail for each BMP type or include on submitted drawings. These can be taken straight from the Fact Sheets if no significant changes are proposed.

On Plans:

- [x] Show all applicable elements of the selected BMPs on the appropriate plan sheets.

Calculations:

- [x] Calculations, for each inlet, and summary sheet using the Storm Water Calculator found at *www.srcity.org/stormwaterLID*
- [ ] Supplemental or supporting calculation if applicable.

PRELIMINARY
STORMWATER CONTROL PLAN

Cotati Commons

September 27, 2024

City Ventures
444 Spear Street
San Francisco, CA 94105

prepared by:

CSW|ST2
504 Redwood Blvd. Suite 310
Novato, CA 94947
415-883-9850

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Appendices

I. Narrative

I.A. Project Location and Description

The Cotati Commons project site is located at the northwest intersection of Gravenstein Highway (HWY 116) and Redwood Drive in Cotati, Sonoma County. The site is bound to the east by Redwood Drive and a restaurant, to the south by Gravenstein Highway, to the west by undeveloped landscaped area and to the north by an existing Lowe's hardware store.

The project proposes the construction of twenty-four (24) residential buildings, with a heritage tree in the center of the development.

Figure 1. Vicinity Map

I.B. Existing Site Features and Conditions

The existing site is covered by grass, dirt paths, and a heritage tree. The heritage tree will be saved and incorporated into the proposed project. The terrain of the project is relatively flat, with less than a 0.5% slope across the property, with higher elevations to the south and west, and lower elevations to the north and east. There is an approximately 18' tall stockpile in the north-west corner of the property. The existing site totals 10.63 acres.

I.C. Requirements

The Storm Water Low Impact Development requirements were triggered as the project creates more than 10,000 square feet of impervious surface. 100% of the post project runoff volume is required on the overall project site as a result of the Hydromodification Control Requirement.

I.D. Pollution Prevention Measures

Pollution prevention measures utilized are shown in the table below.

Table 1. Source Controls

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 Bay"; Install trash capture devices.	Maintain and periodically repaint or replace inlet markings.
Landscape/ Outdoor Pesticide Use	Use pest-resistant plants, especially adjacent to hardscape.	Maintain landscaping using minimum or no pesticides.
Sidewalks, and parking lots		Sweep sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge directly to the sanitary sewer not to a storm drain.

Pools		The sanitary sewer operator must be notified and a cleanout identified when pools are to be drained to the sanitary sewer
Refuse Areas	Signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar	Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site.

I.E. BMP Design

See Appendix A – Stormwater Control Plan and Appendix – Calculations for the locations of the BMPs. The bioretention facilities are designed to receive Stormwater runoff from buildings, streets and adjacent landscaping via storm drain systems and overland sheet flow. The BMPs are designed to carry overflow via storm drains to an existing detention pond to the northeast on the adjacent Lowe's site which has been designed to accommodate the proposed 10-acre site per the drainage report dated April 25, 2005.

Bioretention Area 1 (BR1) is a priority 2 BMP located to the north-east of the project site. The runoff from the buildings, streets and sidewalks within DMA 1 will discharge directly to the bioretention area.

Bioretention Area 2 (BR2) is a priority 2 BMP located to the east of the project site. The runoff from the buildings, streets and sidewalks within DMA 2 will discharge directly to the bioretention area.

Bioretention Area 3 (BR3) is a priority 2 BMP located in the center of the project site. The runoff from the buildings, sidewalks, landscape areas, and community areas within DMA 3 will discharge directly to the bioretention area.

Bioretention Area 4 (BR4) is a priority 2 BMP located in the center of the project site. The runoff from the community areas, sidewalks, and landscape areas within DMA 4 will discharge directly to the bioretention area.

Bioretention Area 5 (BR5) is a priority 2 BMP located in the center of the project site. The runoff from the buildings, sidewalks, landscape areas and community area within DMA 5 will discharge directly to the bioretention area.

Bioretention Area 6 (BR6) is a priority 2 BMP located to the west end of the project site. The runoff from the buildings, sidewalks, streets and landscape areas within DMA 6 will discharge directly to the bioretention area.

Bioretention Area 7 (BR7) is a priority 2 BMP located in the center of the project site. The runoff from the buildings and sidewalks within DMA 7 will discharge directly to the bioretention area.

Bioretention Area 8 (BR8) is a priority 2 BMP located in the center of the project site. The runoff from the buildings, sidewalks and landscape areas within DMA 8 will discharge directly to the bioretention area.

Bioretention Area 9 (BR9) is a priority 2 BMP located near the south edge of the project site. The runoff from the buildings, sidewalks, streets and landscape areas within DMA 9 will discharge directly to the bioretention area.

Bioretention Area 10 (BR10) is a priority 2 BMP located at the south-east corner of the project site.

The runoff from the buildings, streets, sidewalks, and landscape areas within DMA 10 will discharge directly to the bioretention area.

I.F. Maintenance Procedures

The owner is committed to execute any necessary agreements and/or annex into a fee mechanism, per local requirements.

The owner accepts responsibility for operation and maintenance of facilities until that responsibility is formally transferred.

I.G. Summary of Maintenance Requirements for Each Stormwater Facility

The ten (10) bioretention facilities will be maintained on the following schedule at a minimum. BMPs are located adjacent to walkways and are accessible for inspections and maintenance. Details of maintenance responsibilities and procedures will be included in a Stormwater Facility Operation and Maintenance Plan to be submitted for approval as required in the conditions of approval.
At no time will synthetic pesticides or fertilizers be applied, nor will any soil amendments, other than aged compost mulch or sand/compost mix, be introduced.

Daily: The facilities will be examined for visible trash during regular policing of the site, and trash will be removed.
After Significant Rain Events: A significant rain event is one that produces approximately a half-inch or more rainfall in a 24-hour period. Within 24 hours after each such event, the following will be conducted: The surface of the facility will be observed to confirm there is no ponding.

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

Prior to the Start of the Rainy Season: In September or each year, the facility will be inspected to confirm there is no accumulation of debris that would block flow, and that growth and spread of plantings does not block inlets or the movement of runoff across the surface of the facility.
Annual Landscape Maintenance: In December – February of each year, vegetation will be cut back as needed, debris removed, and plants and mulch replaced as needed. The concrete work will be inspected for damage. The elevation of the top of soil and mulch layer will be confirmed to be consistent with the 6-inch reservoir depth.

Appendix A – Stormwater Control Plan

Graphic Scale (in feet)

50 0 50 100

1 inch = 50 ft.

LEGEND

	BIORETENTION AREA
	SELF-TREATING AREA
	NOT TREATED AREA
	IMPERVIOUS AREA (PAVEMENT / HARDSCAPE)
	IMPERVIOUS AREA (ROOF)
	PERVIOUS AREA (LANDSCAPE)
	DRAINAGE MANAGEMENT AREA
BIO #	BMP IDENTIFICATION
DMA #	WATER SHED IDENTIFICATION
BMP	BEST MANAGEMENT PRACTICES

NOTES

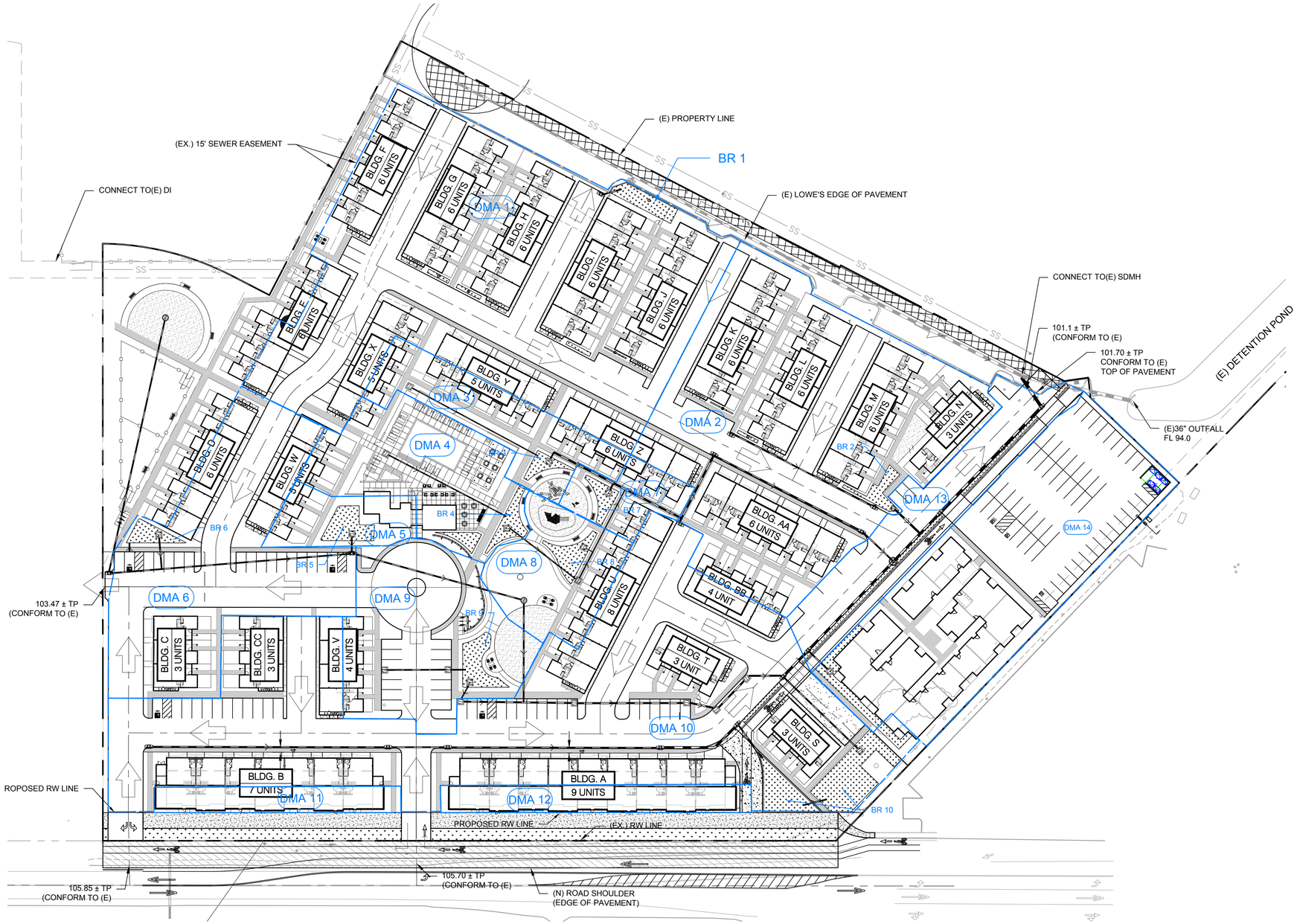
TOTAL SITE IMPERVIOUS AREA: 276,548 SF

BIORETENTION SIZING: IMP. AREA X 0.04 = 11,062 SF OF BIORETENTION REQUIRED

CURRENT AREA FOR PROPOSED BIORETENTION = 12,456 SF

ABBREVIATIONS

AD	AREA DRAIN
BR	BIORETENTION
CB	CATCH BASIN
DI	DRAIN INLET
(E)	EXISTING
EG	EXISTING GROUND
FL	FLOWLINE
HP	HIGH POINT
INV	INVERT
LP	LOW POINT
(N)	NEW
TC	TOP OF CURB
TP	TOP OF PAVEMENT



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STORMWATER CONTROL PLAN

C5.00

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DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 1		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 1	35457	ROOF	1.0	35457			
	32777	PAVEMENT	1.0	32777			
	8194	LANDSCAPE	0.1	819			
TOTAL >				69053	0.04	2762	1065

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 2		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 2	25447	ROOF	1.0	25447			
	24755	PAVEMENT	1.0	24755			
	6189	LANDSCAPE	0.1	619			
TOTAL >				50821	0.04	2033	758

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 3		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 3	3834	ROOF	1.0	3834			
	2819	PAVEMENT	1.0	2819			
	4228	LANDSCAPE	0.1	423			
TOTAL >				7076	0.04	283	420

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 4		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 4	1806	ROOF	1.0	1806			
	11370	PAVEMENT	1.0	11370			
	2843	LANDSCAPE	0.1	284			
TOTAL >				13460	0.04	538	1025

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 5		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 5	1733	ROOF	1.0	1733			
	908	PAVEMENT	1.0	908			
	2117	LANDSCAPE	0.1	212			
TOTAL >				2853	0.04	114	1008

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 6		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 6	8418	ROOF	1.0	8418			
	16742	PAVEMENT	1.0	16742			
	7175	LANDSCAPE	0.1	718			
TOTAL >				25878	0.04	1035	586

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 7		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 7	1483	ROOF	1.0	1483			
	1210	PAVEMENT	1.0	1210			
	1815	LANDSCAPE	0.1	182			
TOTAL >				2875	0.04	115	514

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 8		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 8	1607	ROOF	1.0	1607			
	3301	PAVEMENT	1.0	3301			
	4952	LANDSCAPE	0.1	495			
TOTAL >				5403	0.04	216	798

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 9		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 9	0	ROOF	1.0	0			
	14293	PAVEMENT	1.0	14293			
	6126	LANDSCAPE	0.1	613			
TOTAL >				14906	0.04	596	1045

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 10		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 10	28040	ROOF	1.0	28040			
	43790	PAVEMENT	1.0	43790			
	10947	LANDSCAPE	0.1	1095			
TOTAL >				72925	0.04	2917	4510

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 11		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 11	4159	ROOF	1.0	4159			
	0	PAVEMENT	1.0	0			
	0	LANDSCAPE	0.1	0			
TOTAL >				4159	0.04	166	0

* NO BIO ASSOCIATED WITH DMA 11, WILL DRAIN DIRECTLY TO HWY 116 HABITAT AREA

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 12		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 12	5829	ROOF	1.0	5829			
	0	PAVEMENT	1.0	0			
	0	LANDSCAPE	0.1	0			
TOTAL >				5829	0.04	233	0

* NO BIO ASSOCIATED WITH DMA 12, WILL DRAIN DIRECTLY TO HWY 116 HABITAT AREA

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 13		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 13	0	ROOF	1.0	0			
	13815	PAVEMENT	1.0	13815			
	1535	LANDSCAPE	0.1	154			
TOTAL >				13969	0.04	559	0

* NO BIO ASSOCIATED WITH DMA 13, WILL DRAIN DIRECTLY (E) DETENTION POND

DMA NAME	DMA AREA (SF)	POST-PROJECT SURFACE TYPE	DMA RUNOFF FACTOR	DMA AREA X RUNOFF FACTOR	IMP NAME: BIO 14		
					IMP SIZING FACTOR	MIN. IMP SIZE (SF)	PRO. IMP SIZE (SF)
DMA 14	0	ROOF	1.0	0			
	0	PAVEMENT	1.0	0			
	0	LANDSCAPE	0.1	0			
TOTAL >				0	0.04	0	0

* NO BIO ASSOCIATED WITH DMA 14. THIS 1 ACRE LOT WILL BE USED FOR AFFORDABLE HOUSING. BIORETENTION TO BE DETERMINED

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STORMWATER CONTROL TABLES

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PROJECT: 317068.00

Appendix B – Calculations

City of Santa Rosa WATER

STORM WATER CALCULATOR

LID BMP Summary Page & Site Global Values

Project Information:

Project Name:	Cotati Commons
Address/Location:	Northwest Intersection of Gravenstein Hwy and Redwood Blvd
Designer:	Michael Vidra
Date:	9/27/2024

Site Information:

Mean Seasonal Precipitation (MSP) of Project Site:	33.78	(inches)
K=MSP/3(K=	1.13	
Impervious area - pre development:	17,860.0	ft^2
Impervious area - post development:	276,548.0	ft^2

Based upon the pre and post development impervious area, the post construction BMP requirement is:

100% Capture & Treatment

Summary of Saved BMP Results:

		Tributary Area		Requirements		BMP Design Results						
							Hydromodification Control		Flow Base Treatment		Delta Volume Capture	
	BMP ID:	Tributary Area (ft^2.)	Runoff Reduction Measures (Y/N)	Type of Requirement Met	Type of BMP Design	Percent Achieved	Required $V_{Hydromod}$ (ft^3)	Achieved (ft^3)	Required Q Treatment (cfs)	Achieved (ft^3)	Required Vdelta (ft^3)	Achieved (ft^3)
1	BR1 - Treat	77,463	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	30.3			0.3204	0.0972		
2	BR2 - Treat	57,143	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	28.2			0.2363	0.0667		
3	BR3 - Treat	11,280	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	104.3			0.0467	0.0486		
4	BR4 - Treat	17,009	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	94.5			0.0703	0.0665		
5	BR5 - Treat	5,737	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	490.2			0.0237	0.1163		
6	BR6 - Treat	32,870	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	49.9			0.1359	0.0678		
7	BR7 - Treat	5,004	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	285.6			0.0207	0.0591		
8	BR8 - Treat	10,652	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	208.9			0.0441	0.0920		
9	BR9 - Treat	21,462	No	100% Vertical Flow Treatment	Priority 2: P2-04 Roadside Bioretention - Curb Opening	136.0			0.0888	0.1208		
10	BR10 - Treat	87,244	No	100% Vertical Flow Treatment	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	118.2			0.3608	0.4264		
11	SITE	314,376	No	Hydromod Volume Capture	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter	49.4	23930.3008	11833.2002				
12												
13												
14												
15												
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STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR1 - Treat
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	77,463.0 ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = 0.3204 cfs

Post surface type:	Concrete			
C_{POST}:	0.80			
User Composite post development C_{POST}:	0.00	Treatment Factor (Tf):	1	Calculated
User Input $I_{Historical}$:	0.00 in./hr.	$I_{Design\ Storm}$:	0.20	in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 30.35 %

Infiltration rate of the specified BMP soil:	5.00 in./hr.
Depth of drainage pipe:	1.50 ft
BMP Length:	60.00 ft
BMP Width:	14.00 ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR2 - Treat
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	57,143.0 ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = 0.2363 cfs

Post surface type:	Concrete			
C_{POST}:	0.80			
User Composite post development C_{POST}:	0.00	Treatment Factor (Tf):	1	Calculated
User Input $I_{Historical}$:	0.00 in./hr.	$I_{Design\ Storm}$:	0.20	in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 28.21 %

Infiltration rate of the specified BMP soil:	5.00	in./hr.
Depth of drainage pipe:	1.50	ft
BMP Length:	48.00	ft
BMP Width:	12.00	ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR3 - Treat
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	11,280.0 ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = 0.0467 cfs

Post surface type:	Concrete			
C_{POST}:	0.80			
User Composite post development C_{POST}:	0.00	Treatment Factor (Tf):	1	Calculated
User Input $I_{Historical}$:	0.00 in./hr.	$I_{Design\ Storm}$:	0.20	in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 104.26 %

Infiltration rate of the specified BMP soil:	5.00 in./hr.
Depth of drainage pipe:	1.50 ft
BMP Length:	20.50 ft
BMP Width:	20.50 ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR4 - Treat
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	17,009.0 ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = 0.0703 cfs

Post surface type:	Concrete		
C_{POST}:	0.80		
User Composite post development C_{POST}:	0.00	Treatment Factor (Tf):	1 Calculated
User Input $I_{Historical}$:	0.00 in./hr.	$I_{Design\ Storm}$:	0.20 in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 94.54 %

Infiltration rate of the specified BMP soil:	4.00 in./hr.
Depth of drainage pipe:	1.50 ft
BMP Length:	26.80 ft
BMP Width:	26.80 ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR5 - Treat
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	5,737.0 ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = 0.0237 cfs

Post surface type:	Concrete			
C_{POST}:	0.80			
User Composite post development C_{POST}:	0.00	Treatment Factor (Tf):	1	Calculated
User Input $I_{Historical}$:	0.00 in./hr.	$I_{Design\ Storm}$:	0.20	in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 490.17 %

Infiltration rate of the specified BMP soil:	5.00	in./hr.
Depth of drainage pipe:	1.50	ft
BMP Length:	31.70	ft
BMP Width:	31.70	ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR6 - Treat
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	32,870.0 ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = 0.1359 cfs

Post surface type:	Concrete			
C_{POST}:	0.80			
User Composite post development C_{POST}:	0.00	Treatment Factor (Tf):	1	Calculated
User Input $I_{Historical}$:	0.00 in./hr.	$I_{Design\ Storm}$:	0.20	in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 49.86 %

Infiltration rate of the specified BMP soil:	5.00	in./hr.
Depth of drainage pipe:	1.50	ft
BMP Length:	24.20	ft
BMP Width:	24.20	ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR7 - Treat
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	5,004.0 ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = 0.0207 cfs

Post surface type:	Concrete			
C_{POST}:	0.80			
User Composite post development C_{POST}:	0.00	Treatment Factor (Tf):	1	Calculated
User Input $I_{Historical}$:	0.00 in./hr.	$I_{Design\ Storm}$:	0.20	in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 285.64 %

Infiltration rate of the specified BMP soil:	5.00	in./hr.
Depth of drainage pipe:	1.50	ft
BMP Length:	22.60	ft
BMP Width:	22.60	ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR8 - Treat
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	10,652.0 ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = 0.0441 cfs

Post surface type:	Concrete			
C_{POST}:	0.80			
User Composite post development C_{POST}:	0.00	Treatment Factor (Tf):	1	Calculated
User Input $I_{Historical}$:	0.00 in./hr.	$I_{Design\ Storm}$:	0.20	in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 208.92 %

Infiltration rate of the specified BMP soil:	5.00	in./hr.
Depth of drainage pipe:	1.50	ft
BMP Length:	28.20	ft
BMP Width:	28.20	ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	BR9 - Treat	
BMP Design Criteria:	100% Capture & Treatment	
Type of BMP Design:	Priority 2: P2-04 Roadside Bioretention - Curb Opening	
BMP's Physical Tributary Area:	21,462.0	ft^2
Description/Notes:		

100% Treatment

$Q_{TREATMENT}$ = 0.0888 cfs

Post surface type:	Concrete			
C_{POST}:	0.80			
User Composite post development C_{POST}:	0.00		Treatment Factor (Tf):	1 Calculated
User Input $I_{Historical}$:	0.00	in./hr.	$I_{Design\ Storm}$:	0.20 in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = 136.03 %

Infiltration rate of the specified BMP soil:	5.00	in./hr.
Depth of drainage pipe:	1.50	ft
BMP Length:	32.30	ft
BMP Width:	32.30	ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	**BR10 - Treat**
BMP Design Criteria:	**100% Capture & Treatment**
Type of BMP Design:	**Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter**
BMP's Physical Tributary Area:	**87,244.0** ft^2
Description/Notes:	

100% Treatment

$Q_{TREATMENT}$ = **0.3608** cfs

Post surface type:	**Concrete**			
C_{POST}:	**0.80**			
User Composite post development C_{POST}:	**0.00**	Treatment Factor (Tf):	**1**	Calculated
User Input $I_{Historical}$:	**0.00** in./hr.	$I_{Design\ Storm}$:	**0.20**	in./hr.

BMP Sizing 100% Treatment Vertical

Percent of Goal Achieved = **118.18** %

Infiltration rate of the specified BMP soil:	**5.00**	in./hr.
Depth of drainage pipe:	**1.50**	ft
BMP Length:	**60.70**	ft
BMP Width:	**60.70**	ft

STORM WATER CALCULATOR

BMP Tributary Parameters

Project Name: **Cotati Commons**

BMP ID:	SITE
BMP Design Criteria:	100% Capture & Treatment
Type of BMP Design:	Priority 2: P2-05 Roadside Bioretention - No Curb AND Gutter
BMP's Physical Tributary Area:	314,376.0 ft^2
Description/Notes:	

Hydromodification Requirement: 100% Volume Capture; $V_{HYDROMOD}$

$V_{HYDROMOD}$ = 23,930.30 ft^3

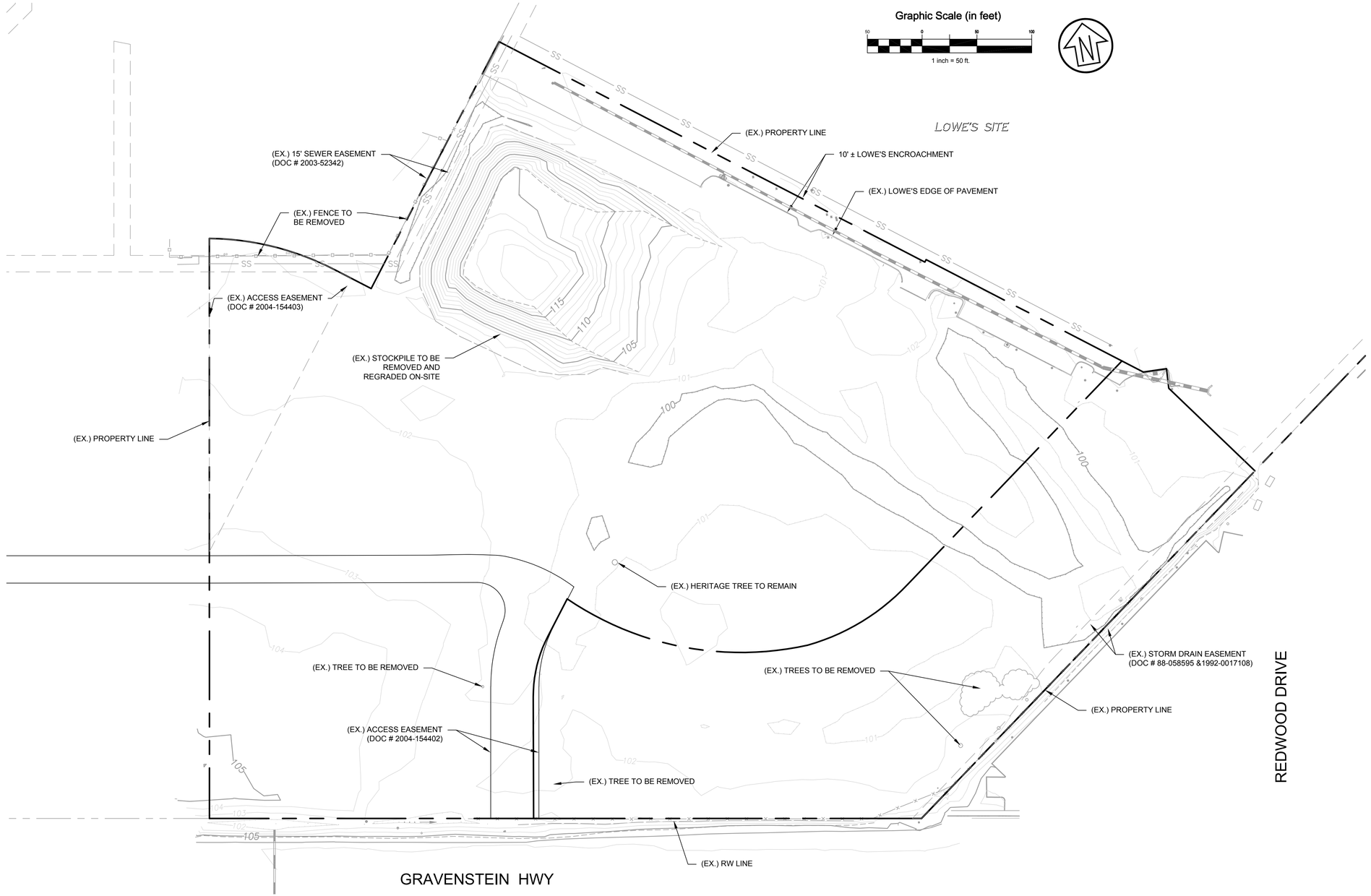
Post development hydrologic soil type within tributary area:	C: 0.05 - 0.15 in/hr infiltration (transmission) rate
Post development ground cover description:	Impervious - Paved Parking, Rooftop, Driveways
CN_{POST} :	98
User Composite post development CN:	0.0

BMP Sizing Tool: Hydromodification Requirement

Percent of Goal Achieved = 49.45 %

	BMP Volume Below Ground		Ponded Water Above Ground	
Porosity:	0.30			
Depth below perforated pipe if present:	1.50	ft	Depth: 0.50	ft
Width:	0.00	ft	Width: 0.00	ft
Length:	0.00	ft	Length: 0.00	ft
Area:	12,456.00	ft^2	Area: 12,456.00	ft^2

Appendix C – Existing Conditions



LEGEND

BOUNDARY LINE

EASEMENT AS NOTED

DEMOLITION NOTES

1. IF EXISTING WELLS OR TANKS ARE FOUND WITHIN THE PROJECT SITE, THEY SHALL BE ABANDONED IN ACCORDANCE WITH THE SONOMA COUNTY PERMIT & RESOURCE MANAGEMENT DEPARTMENT AND AN ABANDONMENT PERMIT WILL BE PROCURED PRIOR TO DEMOLITION.

NOTES

1. DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF.
2. THE BASIS OF BEARING FOR THIS MAP IS THE CALCULATED BEARING OF NORTH 73°49'32" EAST BETWEEN FOUND 1/2" IRON PIPE TAGGED 7790[3] AND FOUND 3/4" IRON PIPE MARKED SONOMA COUNTY WATER AGENCY.
3. VERTICAL DATUM IS NORTH AMERICAN DATUM OF 1988 (NAVD88) PER CALIFORNIA REAL TIME NETWORK (CRTN), EPOCH 2017.5.
4. TOPOGRAPHY SHOWN WAS PERFORMED BY FIELD SURVEY IN MAY OF 2022 BY CSW|ST2.
5. EXISTING EASEMENTS SHOWN WERE BASED ON TITLE REPORT FROM FIRST AMERICAN TITLE, DATED MARCH 28, 2022.

City Ventures

CITY VENTURES

COTATI

CALIFORNIA

C2 Collaborative

CSW|ST2

TARRAR UTILITY CONSULTANTS

HUNT HALE JONES

Architecture | Planning | Interiors

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San Francisco, CA 94105
www.hunthalejones.com

t. 415-512-1300
f. 415-288-0288

EXISTING CONDITIONS

C1.00

PAGE NO.: OF 12
SCALE: 1:50
DATE: 12.15.2023
PROJECT: 317068.00

Appendix D – BMP Selection Table

BMP Selection Table

Project Name: Cotati Commons

	Best Management Practice (BMP)	Detail Sheet	Detail Title	Can be used with...	High Ground Water	Contamination	Slope Constraints	Achieves...	Treatment	Volume Capture	Runoff Reduction Measure	BMP in priority selected?	Yes	No	Unique Identifier of BMP per planes	Explanation of selection	Other notes:
Universal BMP- to be considered on all projects.	Living Roof	N/A	N/A		X	X	X		X	X							
	Rainwater Harvesting	N/A	N/A		X	X	X			X							
Runoff Reduction Measures	Interceptor Trees	N/A	N/A		X	X	X				X						
	Bovine Terrace	RRM-01	Bovine Terrace		X						X						
	Vegetated Buffer Strip	RRM-02	Vegetated Buffer Strip								X						
	Impervious Area Disconnection	N/A	N/A		X	X	X				X						
Priority 1- to be installed with no underdrains or liners. Must drain all stading water within 72 hours.	Bioretention	P1-02	Roadside Bioretention - no C & G						X	X							
	Vegetated Swale- with Bioretention	P1-06	Swale with Bioretention						X	X							
	Constructed Wetlands	N/A	N/A						X	X							
Priority 2 BMPs- with subsurface drains installed above the capture volume.	Bioretention	P2-02	Roadside Bioretinton - Flush Design Roadside						X	X							
		P2-03	Roadside Bioretenion- Contiguous SW						X	X							
		P2-04	Roadside Bioretenion- Curb Opening						X	X							
		P2-05	Roadside Bioretenion- No C & G						X	X			X		BR1-10	Flexibility regarding placement	
	Constructed Wetlands	N/A	N/A						X	X							

Date: 9/27/24

BMP Selection Table

	Best Management Practice (BMP)	Detail Sheet	Detail Title	Can be used with...	High Ground Water	Contamination	Slope Constraints	Achieves...	Treatment	Volume Capture	Runoff Reduction Measure	BMP in priority selected?	Yes	No	Unique Identifier of BMP per planes	Explanation of selection	Other notes:
Priority 3 BMPs- installed with subdrains and/or impermeable liner. Does not achieve volume capture and must be used as part of a treatment train.	Bioretention	P3-02	Roadside Bioretinton - Flush Design Roadside		X	X	X		X								
		P3-03	Roadside Bioretenion- Contiguous SW		X	X	X		X								
		P3-04	Roadside Bioretenion- Curb Opening		X	X	X		X								
	Flow Through Planters	P3-05	Flow Through Planters		X	X	X		X								
	Vegetated Swale	P3-06	With Bioretention		X	X	X		X	X							
		P3-07	Vegetated Swale		X	X	X		X								
Priority 4 BMPs- does not achieve volume capture and must be used as part of a	Tree Filter Unit				X	X	X		X								
	Modular Bioretention				X	X	X		X								
Priority 5 BMPs- does not achieve volume capture and must be used as part of a treatment train.	Chambered Separator Units				X	X	X		X								
	Centrifugal Separator Units				X	X	X		X								
	Trash Excluders				X	X	X		X								
	Filter Inserts				X	X	X		X								
Priority 6 BMPs- see the "Offset Program" chapter for details.	Offset Program								N/A	N/A	N/A						
Other	Detention				X												

Appendix E – Storm Water LID Determination Worksheet

FOR OFFICE USE ONLY:
Does this project require permanent storm water BMP's?

☐ Y ☐ N

City of Santa Rosa

PRINT FORM

File No:	Quadrant
Related Files:	
Set:	
Department Use Only	

2017 Storm Water LID Determination Worksheet

PURPOSE AND APPLICABILITY: Use this form to determine whether or not this project will need to incorporate permanent Storm Water Best Management Practices (BMP's) and submit a Strom Water Low Impact Development Submittal (SW LIDS) as required by the City's National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System (NPDES MS4) only. Your project may still need to incorporate permanent storm water BMP's as required by CALGREEN or North Coast Regional Water Quality Control Board (NCRWQCB).

Part 1: Project Information

Cotati Commons Project Name	City Ventures Applicant (owner or developer) Name
Northwest Intersection of Gravenstein Hwy and Redwood Dr Site Address	444 Spear Street Mailing Address
Cotati, CA 94931 City/State/Zip	San Francisco, CA 94105 City/State/Zip
 Permit Number(s) - if applicable	 Phone/Email/Fax
Michael Vidra Engineer Name	5870 Stoneridge Mall Rd, Suite 203 Mailing Address
Pleasonton, CA 94588 City/State/Zip	mvidra@cswst2.com Phone/Email

Type of Application/Project:

☒ Subdivision ☐ Grading Permit ☐ Building Permit ☐ Hillside Development

☐ Design Review ☐ Use Permit ☐ Encroachment ☐ Time Extensions ☐ Other

PART 2: Project Exemptions

1. Is this a project that creates or replaces less than 10,000 square feet of impervious surface, including all project phases and off-site improvements?

   ☐ Yes ☒ No

2. Is this project a routine maintenance activity[1] that is being conducted to maintain original line and grade, hydraulic capacity, and original purpose of facility such as resurfacing existing roads and parking lots?

   ☐ Yes ☒ No

[1] "Routine Maintenance Activity" includes activities such as overlays and/or resurfacing of existing roads or parking lots as well as trenching and patching activities and reroofing activities.

3. Is this project a stand-alone pedestrian pathway, trail, or off-street bike lane?

☐ Yes ☒ No

Did you answer "YES" to any of the above questions in Part 2?

☐ **YES:** This project will not need to incorporate permanent Storm Water BMP's as required by the NPDES MS4 permit. **Please complete the Section 4 and "Exemption Signature Section" on Page 4.**

☒ **NO:** Proceed with worksheet.

Part 3: Project Triggers

Projects that Trigger Requirements:
Please answer the following questions to determine whether this project requires permanent Storm Water BMP's and the submittal of a SW LIDs.

1. Does this project create or replace a combined total of 10,000 square feet or more of impervious surface including all project phases and offsite improvements?

☒ Yes ☐ No

2. Does this project create or replace a combined total or 10,000 square feet[2] or more of impervious street, roads, highways, or freeway construction or reconstruction? ☒ Yes ☐ No

3. Does this project create or replace a combined total of 1.0 acre of more of impervious surface including all project phases and off-site improvements? ☒ Yes ☐ No

Did you answer "YES" to any of the above questions in Part 3?

☒ **YES**: This project requires permanent Storm Water BMP's and the submittal of a SW LIDS. **Please complete the remainder of this worksheet and sign the "Acknowledgment Signature Section" on Page 4.**

☐ **NO:** This project will not need to incorporate permanent Storm Water BMP's as required by the NPDES MS4 permit. **Please complete the "Exemption Signature Section" on Page 4**.

[2] Impervious surface replacement, such as the reconstruction of parking lots or excavation to roadway subgrades, is not a routine maintenance activity. Reconstruction is defined as work that replaces surfaces down to the subgrade. Overlays, resurfacing, trenching, and patching are defined as maintenance activities.

Part 4: Project Description

1. Total Project area: 10.63 ○ square feet ⊘ acres

2. Existing land use(s): (check all that apply)

☐ Commercial ☐ Industrial ☐ Residential ☐ Public ■ Other

Description of buildings, significant site features (creeks, wetlands, heritage trees), etc.:

The project area is currently undeveloped land with one (1) heritage tree, a stockpile, and a small area of curb, gutters and asphalt. There are no other significant features in the project area.

3. Existing impervious surface area: 0.41 ○ square feet ⊘ acres

4. Proposed Land Use(s): (check all that apply)

☐ Commercial ☐ Industrial ☐ Residential ☐ Public ☐ Other

Description of buildings, significant site features (creeks, wetlands, heritage trees), etc.:

The project proposes twenty-four (24) residential buildings, with a heritage tree.

5. Proposed impervious surface area: 6.35 ○ square feet ⊘ acres

Acknowledgment Signature Section:

As the property owner or developer, I understand that this project is required to implement permanent Storm Water Best Management Practices and provide a Storm Water Low Impact Development Submittal (SW LIDS) as required by the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit. Any unknown responses must be resolved to determine if the project is subject to these requirements.*

_____ _____

Applicant Signature Date

Exemption Signature Section:

As the property owner or developer, I understand that this project as currently designed does not require permanent Storm Water BMP's nor the submittal of a Storm Water Low Impact Development Submittal (SW LIDS) as required by the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit. I understand that redesign may require submittal of a new Determination Worksheet and may require permanent Storm Water BMP's.*

_____ _____

Applicant Signature Date

*Your project may still need to incorporate permanent storm water BMP's as required by CALGREEN or North Coast Regional Water Quality Control Board (NCRWQCB).

Implementation Requirements: *All calculations shall be completed using the "Storm Water Calculator" available at: www.srcity.org/stormwaterLID*

Hydromodification Control/100% Volume Capture: Capture (infiltration and/or reuse) of 100% of the volume of runoff generated by a 1.0" 24-hour storm event, as calculated using the "Urban Hydrology for Small Watersheds" TR-55 Manual method. 100% volume capture is the ideal condition and if achieved satisfies all requirements so that no additional treatment is required. This is a retention requirement.

***Treatment Requirement*:** Treatment of 100% of the flow calculated using the modified Rational Method and a known intensity of 0.20 inches per hour.

Delta Volume Capture Requirement: Capture (infiltration and/or reuse) of the increase in volume of storm water due to development generated by a 1.0" 24-hour storm event, as calculated using the "Urban Hydrology for Small Watersheds" TR-55 Manual method. This is a retention requirement.