

332 PRINCETON AVENUE
HALF MOON BAY, CA 94019
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DRAINAGE REPORT

Stevaux Property
0 Pescadero Creek Road
Pescadero, CA
APN 088-090-030
Sigma Prime Job #: 23-238

May 2, 2025



Project Description

The proposed project is new house, pool house, and pool on an undeveloped lot. The lot covers an area of 88,621 square feet (2.03 acres). Project existing and proposed impervious surfaces are summarized in the table:

	Existing Impervious Area (sq. ft.)	Proposed Impervious Area (sq. ft.)
Roofs	0	4833
Driveway	0	2781
Patio, Pool	0	1953
TOTAL	0	9567

Project Site Drainage Considerations

The average slope across the property is about 5 percent.

The site drains as sheet-flow down a slope to the west, across meadowland and forest for a distance of about 200 feet to Pescadero Creek.

The house site is in FEMA designation X. This is an area that is outside the flood area with a 0.2% probability of occurring. The west side of the property, an area that won't be developed, is in the 100-year FEMA flood zone.

Groundwater was not encountered in the soil borings, drilled to a depth of as much as 18 feet. The soil borings encountered mostly sandy soil. The average percolation rate for sandy soil is 5.75 in/hr, based on percolation tests for the septic system.

Project Drainage Calculations – Flow and Volume Control

The rational method was selected as the calculation method for this project because of the relatively simple nature of the project and because the project size is less than 10 acres.

A 10-year design storm was used for calculating the pre-and post-development peak flow and runoff volumes for this project per the County's minimum guidelines.

A factor of safety of 1.2 was selected to account for currently unplanned minor changes in impervious area on-site, low maintenance periods, and potential construction errors.

Time of concentration was determined using the equation for the NRCS watershed lag method. As these values were less than the County minimum Time of Concentration, a 10 minute time of concentration was used.

Rainfall intensity for the project site was obtained from NOAA's Precipitation Frequency Data Server. As can be seen in the attached NOAA spreadsheet, the intensity for a 10-minute duration, 10-year design storm, is 2.79 inches per hour.

Pre-Development Peak Flow

Topographic site survey shows that under existing conditions, the property sheet flows to the south, so there is only one point of discharge and one tributary area for calculations. Pre-development peak flow is calculated using the rational method, using the attached spreadsheet called "Runoff comparison". The pre-development peak flow is estimated to be 1.664 cfs.

Post-Development Site Runoff

Post-development site runoff also flows generally to the east. Post-development as shown on the attached spread sheet, is estimated to be 2.032 cfs, for an increase of 0.368 cfs.

Project Site Drainage Considerations

The following procedure was performed for the roof and driveway only. San Mateo County requires that project runoff from a 10-year, 1-hour duration design storm be retained onsite. For a 10-year storm, the intensity for a 1-hour duration is 1.110 in/hr.

The attached spreadsheet, called "Detention Basin Sizing", shows the steps in estimating the volume of runoff and the required lengths of different sizes of detention basins. The runoff volume is estimated to be 527 cf. 632 cf of runoff needs to be retained, based on a factor of safety of 1.2.

Proposed Mitigation Features

In order to contain this volume of runoff, it is proposed to route stormwater to a new infiltration-based retention feature that consists of a 62' long, 36" diameter perforated pipe surrounded by 6" of gravel on all sides. The system overflows through 12" diameter grates at the top. The detention storage calculations are outlined on the attached spreadsheet, "Detention Basin Sizing".

As determined above, it is appropriate to use infiltration in this area. However, the following checks need to be completed to verify that infiltration will adequately address runoff from the site (All checks are included in the attached spreadsheet for detention basin sizing.):

- 3-day percolation check: With a percolation rate of 1.1 in/hr, (the lowest percolation rate from the septic perc tests was used, to be conservative.) a 4 foot wide trench is adequate.

Should the system experience a greater than 10-year storm, the system will overflow through the grate at the top and sheet flow safely away.

Culvert Sizing

The attached spreadsheet called "Culvert Sizing" shows the calculations to check on the size of the downspout pipes. Based on a 10-year storm with a 5-minute duration, a rainfall intensity of 3.89 in/hr was applied. The calculations show that a minimum pipe diameter of 3.4 inches is required for the larger portion of the roof. Three entry points to the rain garden are proposed so

that 4-inch pipes will be adequate. We have specified pipe diameters of 4 inches.

Operations & Maintenance

Recommended operations and maintenance for the proposed drainage system onsite includes:

- » Clear debris from inlets as needed.
- » Monitor for ponding around the house.
- » Maintain appropriate vegetation for infiltration measures per the C.3 Technical Guidance.

As a C.3 Regulated Project, an Operations and Maintenance (O&M) Agreement will need to be recorded for the property prior to the Building Permit final. A draft O&M agreement has been prepared separately.

Attachments

NOAA Atlas 14 Spreadsheet

Runoff Comparison

Rational Method/Detention Basin Sizing

Culvert Sizing

C.3 and C.6 Development Review Checklist



NOAA Atlas 14, Volume 6, Version 2
Location name: Pescadero, California, USA*
Latitude: 37.265°, Longitude: -122.3223°
Elevation: 117 ft**



* source: ESRI Maps
 ** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aeriels](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	2.09 (1.84-2.41)	2.62 (2.30-3.02)	3.32 (2.90-3.84)	3.89 (3.36-4.54)	4.67 (3.88-5.69)	5.28 (4.26-6.59)	5.89 (4.62-7.60)	6.54 (4.96-8.71)	7.42 (5.34-10.4)	8.10 (5.60-11.8)
10-min	1.50 (1.32-1.73)	1.88 (1.65-2.17)	2.38 (2.08-2.75)	2.79 (2.41-3.25)	3.35 (2.78-4.07)	3.78 (3.06-4.72)	4.22 (3.31-5.44)	4.69 (3.55-6.25)	5.32 (3.83-7.45)	5.81 (4.01-8.48)
15-min	1.21 (1.06-1.39)	1.52 (1.33-1.74)	1.92 (1.68-2.22)	2.25 (1.94-2.62)	2.70 (2.24-3.28)	3.05 (2.46-3.81)	3.41 (2.67-4.39)	3.78 (2.86-5.04)	4.28 (3.09-6.01)	4.68 (3.24-6.84)
30-min	0.842 (0.740-0.970)	1.06 (0.926-1.22)	1.34 (1.17-1.54)	1.57 (1.36-1.83)	1.88 (1.56-2.29)	2.13 (1.72-2.66)	2.37 (1.86-3.06)	2.63 (2.00-3.51)	2.99 (2.15-4.19)	3.26 (2.26-4.77)
60-min	0.597 (0.524-0.687)	0.748 (0.656-0.861)	0.946 (0.827-1.09)	1.11 (0.960-1.30)	1.33 (1.10-1.62)	1.50 (1.22-1.88)	1.68 (1.32-2.16)	1.86 (1.41-2.48)	2.12 (1.52-2.96)	2.31 (1.60-3.38)
2-hr	0.439 (0.385-0.504)	0.548 (0.480-0.631)	0.692 (0.605-0.800)	0.811 (0.701-0.946)	0.973 (0.807-1.18)	1.10 (0.888-1.37)	1.23 (0.963-1.58)	1.36 (1.03-1.81)	1.54 (1.11-2.16)	1.69 (1.16-2.46)
3-hr	0.368 (0.323-0.423)	0.460 (0.403-0.530)	0.581 (0.508-0.671)	0.680 (0.588-0.794)	0.817 (0.677-0.994)	0.922 (0.745-1.15)	1.03 (0.808-1.33)	1.14 (0.866-1.52)	1.30 (0.934-1.82)	1.42 (0.979-2.07)
6-hr	0.263 (0.231-0.303)	0.329 (0.288-0.379)	0.416 (0.364-0.481)	0.488 (0.422-0.570)	0.586 (0.486-0.713)	0.662 (0.535-0.827)	0.740 (0.580-0.953)	0.821 (0.622-1.09)	0.932 (0.671-1.31)	1.02 (0.704-1.49)
12-hr	0.175 (0.153-0.201)	0.220 (0.193-0.253)	0.279 (0.244-0.323)	0.328 (0.284-0.383)	0.395 (0.328-0.481)	0.447 (0.361-0.559)	0.500 (0.392-0.644)	0.555 (0.420-0.740)	0.630 (0.454-0.883)	0.688 (0.476-1.01)
24-hr	0.112 (0.102-0.126)	0.142 (0.129-0.160)	0.182 (0.165-0.205)	0.215 (0.193-0.244)	0.259 (0.227-0.303)	0.294 (0.252-0.349)	0.329 (0.276-0.399)	0.365 (0.299-0.454)	0.414 (0.327-0.534)	0.452 (0.347-0.602)
2-day	0.072 (0.065-0.081)	0.092 (0.084-0.104)	0.119 (0.108-0.134)	0.141 (0.127-0.159)	0.170 (0.149-0.198)	0.193 (0.165-0.229)	0.215 (0.181-0.261)	0.239 (0.196-0.297)	0.271 (0.214-0.349)	0.295 (0.227-0.393)
3-day	0.055 (0.050-0.061)	0.071 (0.064-0.079)	0.091 (0.083-0.103)	0.108 (0.097-0.123)	0.131 (0.114-0.153)	0.148 (0.127-0.176)	0.166 (0.139-0.201)	0.183 (0.150-0.228)	0.208 (0.164-0.268)	0.226 (0.174-0.301)
4-day	0.045 (0.041-0.051)	0.059 (0.053-0.066)	0.076 (0.069-0.086)	0.090 (0.081-0.102)	0.109 (0.095-0.128)	0.124 (0.106-0.147)	0.138 (0.116-0.168)	0.153 (0.126-0.191)	0.173 (0.137-0.224)	0.189 (0.145-0.251)
7-day	0.033 (0.030-0.037)	0.042 (0.038-0.047)	0.055 (0.049-0.061)	0.065 (0.058-0.073)	0.078 (0.068-0.091)	0.088 (0.076-0.105)	0.098 (0.083-0.119)	0.109 (0.089-0.135)	0.123 (0.097-0.158)	0.133 (0.102-0.177)
10-day	0.025 (0.023-0.029)	0.033 (0.030-0.037)	0.043 (0.039-0.048)	0.051 (0.045-0.057)	0.061 (0.053-0.071)	0.069 (0.059-0.082)	0.077 (0.064-0.093)	0.085 (0.069-0.105)	0.095 (0.075-0.123)	0.103 (0.079-0.138)
20-day	0.016 (0.015-0.018)	0.021 (0.019-0.024)	0.028 (0.025-0.031)	0.033 (0.029-0.037)	0.039 (0.034-0.046)	0.044 (0.038-0.053)	0.049 (0.041-0.060)	0.054 (0.044-0.067)	0.061 (0.048-0.078)	0.066 (0.050-0.087)
30-day	0.013 (0.012-0.015)	0.017 (0.015-0.019)	0.022 (0.020-0.025)	0.026 (0.024-0.030)	0.031 (0.027-0.037)	0.035 (0.030-0.042)	0.039 (0.033-0.047)	0.043 (0.035-0.053)	0.048 (0.038-0.062)	0.051 (0.039-0.068)
45-day	0.011 (0.010-0.012)	0.014 (0.013-0.016)	0.018 (0.016-0.021)	0.021 (0.019-0.024)	0.026 (0.022-0.030)	0.029 (0.024-0.034)	0.031 (0.026-0.038)	0.034 (0.028-0.043)	0.038 (0.030-0.049)	0.041 (0.031-0.054)
60-day	0.010 (0.009-0.011)	0.013 (0.011-0.014)	0.016 (0.015-0.018)	0.019 (0.017-0.022)	0.023 (0.020-0.026)	0.025 (0.022-0.030)	0.028 (0.023-0.034)	0.030 (0.025-0.037)	0.033 (0.026-0.043)	0.035 (0.027-0.047)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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PF graphical



Runoff Comparison

Job: Stevaux
No.: 23-238
Date 5/2/2025
by: CMK

Rational Method to Estimate Storm Runoff

$$Q_p = CIA_d$$

Lot Area (sf):

Pre-Construction:

Pervious Area (sf):

Impervious Area (sf):

Total Area, A_d (sf):

Area, A_d (acres):

Pervious C_{10} :

Impervious C_{10} :

Weighted C_{10} :

Time of Concentration, t_c : minutes

I (rainfall intensity): From NOAA Atlas 14

I_{10} = in/hr

Q=CIA: CFS

Post-Construction:

Pervious Area (sf):

Impervious Area (sf):

Total Area, A_d (sf):

Area, A_d (acres):

Pervious C_{10} :

Impervious C_{10} :

Weighted C_{10} :

Time of Concentration, t_c : minutes

I (rainfall intensity): From NOAA Atlas 14

I_{10} = in/hr

Q=CIA: CFS

Difference: CFS

% Increase:

Detention Basin Sizing

Job: Stevaux
 No.: 23-238
 Date 5/2/2025
 by: CMK

Rational Method to Estimate Storm Runoff

$Q_p = CIA_d$

Area, A_d (sf):	9567
Area, A_d (acres):	0.21963
C:	0.9

Duration=1 hour
 I (rainfall intensity): from NOAA Atlas 14 Dataset

$I_{60} =$ 1.110 in/hr

$Q =$ 0.146 CFS

Detention Size (for 1-hour duration):

10-yr Storm:	527	CF
FS = 1.2:	632	CF

Areas:	Pipe Diam-ft	Trench Width -ft	Trench Depth -ft	Trench Area-sf	Pipe Area -sf	Gravel Area-sf	w/Void Ratio 35%	Total Area-sf
	1	2	2	4	0.79	3.21	1.13	1.91
	1.5	2.5	2.82	7.05	1.77	5.28	1.85	3.62
	2	3	3	9	3.14	5.86	2.05	5.19
	3	4	4	16	7.07	8.93	3.13	10.19

Size Pipes for 10-year event:

1' diam. Pipe:	330.7	LF Required
1.5' diam. Pipe:	174.7	LF Required
2' diam. Pipe:	121.7	LF Required
3' diam. Pipe:	62.0	LF Required

3-day percolation check:

Pipe Diameter:	3	feet (side by side 1.5' pipes)
Estimated percolation rate:	1.1	in/hr (lowest perc rate)
Estimated percolation rate:	0.0917	ft/hr
	2.20	ft/day
	3	days
	6.60	ft/sf (perc rate)
	96	sf (needed sf)
Trench Length:	63.0	feet
Trench Width:	1.52	feet
Width of Gravel:	-8.9	inches

Width <6" indicate adequate percolation rate.

Culvert Sizing

Job: Stevaux _____
No.: 23-238 _____
Date 4/9/2025 _____
by: CMK _____

Rational Method to Estimate Storm Runoff (page 20-13)

$Q_p = CIA_d$ Reference: Civil Engineering Reference Manual

Area (SF):
Area, A_d (acres):
C (Appendix 20.A):
I (rainfall intensity): NOAA Atlas 14
Storm Frequency: years
Time of Concentration, t_c : minutes
I = in/hr
 $Q_p =$ ft^3/sec = gal/min

Culvert Size (page 19-6)

$D = 1.335(nQ_p/\text{sqrt}(S))^{3/8}$ Eq. 19.16b, page 19-6, full flow

n: Manning roughness coefficient, from Appendix 19.A
S: Slope of pipe

D = feet
= inches

C.3 and C.6 Development Review Checklist

Municipal Regional Stormwater Permit (MRP 3.0)
 Stormwater Controls for Development Projects

Project Information (Enter information only into blue-highlighted cells - other cells are locked.)

I.A Enter Project Data (For "C.3 Regulated Projects," data will be reported in the municipality's stormwater Annual Report.)

Project Name:	Stevaux	Case Number:	PLN2024-00210
Project Address:	0 Pescadero Creek Road	Cross Street:	Dearborn Park Road
Project APN:	088-090-030	Project Watershed:	Pescadero Creek
Applicant Name:	Olivier Nolan-Stevaux	Project Phase No.	
Applicant Phone:	650-288-5139	Applicant Email Address:	ostevaux@gmail.com

Development Type: (check all that apply)

- Small Single-Family Home Project (<10,000 sq. ft. of created and/or replaced impervious surface¹)
- Large Single-Family Home Project (≥10,000 sq. ft. of created and/or replaced impervious surface¹)
- Subdivision - Residential: Two or more lot development² # of units: _____
- Multi-Family Residential # of units: _____
- Commercial
- Industrial, Manufacturing
- Mixed-Use # of units: _____
- New, widened or reconstructed roads related to parcel-based projects³
- Stand-alone pavement maintenance or construction work, or similar work related to parcel-based projects³
- Other redevelopment project as defined by MRP: creating, adding and/or replacing exterior existing impervious surface on a site where past development has occurred.
- Institutional: schools, libraries, jails, etc.
- Parks and trails, camp grounds, other recreational
- Kennels, Ranches
- Other, Please specify _____

Project Description (Don't include past or future phases)⁴

New house on undeveloped lot.

I.A.1 Total Project Area: 88,833 square feet (on and off-site)
I.A.2 Total Area on-site: 88,621 square feet (on the private property)
I.A.3 Total Area off-site: 212 square feet (frontage or area in Public Right of Way being improved)
I.A.4 Total Area of land disturbed during construction: 20,000 square feet
 (Include all project on-site and off-site areas of clearing, grading, excavating and stockpiling)
I.A.5 Site slope: 5 %

I.A.6 Certification:

I certify that the information provided on this form is correct and acknowledge that, should the project exceed the amount of new and/or replaced impervious surface provided in this form, the as-built project may be subject to additional improvements.

- Preliminary Calculations Attached Final Calculations Attached Stormwater Control Plan Attached

Name of person completing the form:	Charles Kissick	Title:	Engineer
Signature:		Date:	5/2/2025
Phone Number:	650-728-3590	E-mail:	sigmaprm@gmail.com

¹ Small and Large Detached Single-Family Homes that are not part of a common plan of development².
² Common Plans of Development (subdivisions or contiguous, commonly owned lots, for the construction of two or more homes developed within 1 year of each other), and/or constructed with shared utilities, are not considered single family home projects by the MRP.
³ Stand-alone roadway or pavement projects, or pavement work that is part of a project, creating or replacing 5,000 sq. ft. or more of impervious surface may be subject to C.3 requirements - both in public and private areas. See the Roads Factsheet at: www.flowstobay.org/newdevelopment
⁴ Project description examples: 5-story office building, industrial warehouse, residential with five 4-story buildings for 200 condominiums, etc. 7/1/23

I.B Is the project a "C.3 Regulated Project" per MRP Provision C.3.b? (Use table below to make determination.)

I.B.1 Enter the amount of Impervious surface Retained, Replaced or Created⁵ by the project (use DMA Table in Worksheet D):

Table I.B.1 Impervious⁵ and Pervious⁶ Surfaces (Match DMA Summary Table in Worksheet D, if applicable)

Impervious Surfaces (IS) (e.g., sidewalks, driveways, parking areas, patios, roads, rooftops, pools, pathways, etc.)	Pre-Project	Post-Project			
	I.B.1.a Existing (Pre-Project) Impervious Surface (sq.ft.)	I.B.1.b Existing Impervious Surface to be Retained ⁵ (sq.ft.)	I.B.1.c Existing Impervious Surface to be Replaced ⁵ (sq.ft.)	I.B.1.d New Impervious Surface to be Created ⁵ (sq.ft.)	I.B.1.e Post-Project Impervious Surface (sq.ft.) (=b+c+d)
On-site area (within the parcel/private site boundaries)	-	-	-	9,355	9,355
Off-site area (e.g., frontage/other area in Public Right of Way)	-	-	-	212	212
Subtotal:	-	-	-	9,567	9,567
Total Impervious Surface Replaced and Created: (sum of totals for columns I.B.1.c and I.B.1.d):		I.B.1.f		9,567 sq. ft.	
Pervious Surfaces (PS) (e.g., landscaping, pervious pavement, bioretention areas, parking strips, street trees, etc. - both on-site and off-site)	Existing (Pre-Project) Pervious Surface (sq.ft.)				Post-project Pervious Surface (sq.ft.)
All pervious off-site area (e.g., frontage/Public Right of Way) ⁶	212				-
Landscaping area on-site	88,621				79,266
Pervious Pavement area on-site	-				I.B.1.g 783
Green Roof area on-site	-				
Subtotal:	88,833	50% Rule Calculation			80,049
Total Project Area (should be equal to I.A.1)	88,833	I.B.1.h 0%			88,833

I.B.2 Please review and attach additional worksheets as required below using the Total Impervious Surface (IS) Replaced or Created in cell **I.B.1.f** from Table **I.B.1** above and other factors:

	Review Steps	Check One		Attach Worksheet
		Yes	No	
I.B.2.a	Does this project involve any earthwork and/or stockpiling of soil, aggregates etc? If YES, then Check Yes, and Complete Worksheet A. If NO, then Check No, and go to I.B.2.b	<input checked="" type="checkbox"/>	<input type="checkbox"/>	A
I.B.2.b	Is I.B.1.f greater than or equal to 2,500 sq.ft? If YES, then the Project is subject to Provision C.3.i. - complete Worksheets B, C and go to I.B.2.c. If NO, go to I.B.2.i - or ask municipal staff for Small Project Checklist.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	B, C
I.B.2.c	Does the 50% rule apply to the project? Is I.B.1.h 50% or more? If YES, site design, source control and treatment requirements apply to the entire on-site area. Continue to I.B.2.d If NO, these requirements apply only to the impervious surface created and/or replaced. Continue to I.B.2.d	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
I.B.2.d	Is this project a Roadway Project and is I.B.1.f greater than or equal to 5,000 sq.ft? If YES, project may be C.3 Regulated Project. See the Roadways Fact Sheet at: www.flowstobay.org/newdevelopment If NO, go to I.B.2.e	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
I.B.2.e	Is I.B.1.f greater than or equal to 5,000 sq.ft? Or 10,000 sq.ft. for a Large Single-Family Home? (Small Single-Family Homes are exempt) If YES, project is a C.3 Regulated Project - complete Worksheet D. Then continue to I.B.2.f. If NO, then skip to I.B.2.g.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	D
I.B.2.f	Is I.B.1.f greater than or equal to 43,560 sq.ft. (i.e., one acre)? If YES, project may be subject to Hydromodification Management requirements - complete Worksheet E then go to I.B.2.g. If NO, then go to I.B.2.g.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	E
I.B.2.g	Is I.A.4 greater than or equal to 43,560 sq.ft., (i.e., one acre)? [SWRS Site: Subject to monthly inspections from Oct 1 to April 30; weekly inspections if located in ASBS Watershed] For more information see: www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml If YES, check box, obtain coverage under CA Construction General Permit & submit Notice of Intent to municipality- go to I.B.2.h. If NO, then go to I.B.2.h.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
I.B.2.h	Is this a Special Project or does it have the potential to be a Special Project? If YES, complete Worksheet F - then continue to I.B.2.i. If NO, go to I.B.2.i.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	F
I.B.2.i	Is this project a Hillside Site ? Or a High Priority Site ? Hillside Sites include those with ≥ 20% slope (see I.A.5) disturbing greater than or equal to 5,000 square feet. High Priority Sites include: 1) Project that involve grading in excess of 250 c.y. or requiring a Grading or Land Clearing Permit; or 2) Project with land disturbance of: a.) 1 sq. ft. or greater within the Fitzgerald Marine Reserve ASBS Watershed, b.) 1,000 sq. ft. or greater for areas within 100 feet of a creek, wetland, or coastline; or 3) Any public project involving work within a waterway or any private project involving work within a waterway that requires a permit issued by the Planning and Building Department. [SWRS Site: Subject to monthly inspections from Oct 1 to April 30; weekly inspections if located in ASBS Watershed] If YES, complete section G-2 on Worksheet G - then continue to I.B.2.j. and complete the Certification in Section I.A.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	G
I.B.2.j	For Municipal Staff Use Only: Are you using Alternative Certification for the project review? If YES, then fill out section G-1 on Worksheet G. Fill out other sections of Worksheet G as appropriate. See cell I.B.1.g above - Is the project installing 3,000 square feet or more of pervious pavement? If YES, then fill out section G-3 on Worksheet G. Add to Municipal Inspection Lists (C.3 and C.3.h)	<input type="checkbox"/>	<input type="checkbox"/>	G

⁵ "Retained" means to leave existing impervious surfaces in place; "Replaced" means to install new impervious surface where existing impervious surface is removed anywhere on the same site; and "Created" means the amount of new impervious surface being proposed which exceeds the total amount of existing impervious surface at the site.

⁶ Per the MRP, pavement that meets the following definition of pervious pavement is NOT an impervious surface: pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3. Gravel pavement is not pervious unless it is constructed using pervious pavement system designs or runoff flows to adjacent landscaping. Pervious off-site areas include landscaped areas such as parking strips and street trees; off-site pervious pavement includes pervious concrete gutters and interlocking permeable concrete paver sidewalks, etc. 7/1/23

Worksheet A

C.6 – Construction Stormwater BMPs

Identify Plan sheet showing the appropriate construction Best Management Practices (BMPs) used on this project:

(Applies to all projects with earthwork)

Yes	Plan Sheet	Best Management Practice (BMP)
<input checked="" type="checkbox"/>	BMP Sheet	Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, rinse water from architectural copper, and non-stormwater discharges to storm drains and watercourses.
<input checked="" type="checkbox"/>	BMP Sheet	Store, handle, and dispose of construction materials/wastes properly to prevent contact with stormwater.
<input checked="" type="checkbox"/>	BMP Sheet	Do not clean, fuel, or maintain vehicles on-site, except in a designated area where wash water is contained and treated.
<input checked="" type="checkbox"/>	BMP Sheet	Train and provide instruction to all employees/subcontractors re: construction BMPs.
<input type="checkbox"/>		Protect all storm drain inlets in vicinity of site using sediment controls such as berms, fiber rolls, or filters.
<input checked="" type="checkbox"/>	BMP Sheet	Limit construction access routes and stabilize designated access points.
<input checked="" type="checkbox"/>	BMP Sheet	Attach the San Mateo Countywide Water Pollution Prevention Program's construction BMP plan sheet to project plans and require contractor to implement the applicable BMPs on the plan sheet.
<input checked="" type="checkbox"/>	BMP Sheet	Use temporary erosion controls to stabilize all denuded areas until permanent erosion controls are established.
<input type="checkbox"/>		Delineate with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.
<input type="checkbox"/>		Provide notes, specifications, or attachments describing the following: <ul style="list-style-type: none"> ■ Construction, operation and maintenance of erosion and sediment controls, include inspection frequency; ■ Methods and schedule for grading, excavation, filling, clearing of vegetation, and storage and disposal of excavated or cleared material; ■ Specifications for vegetative cover & mulch, include methods and schedules for planting and fertilization; ■ Provisions for temporary and/or permanent irrigation.
<input checked="" type="checkbox"/>	C-2	Perform clearing and earth moving activities only during dry weather.
<input checked="" type="checkbox"/>	C-2	Use sediment controls or filtration to remove sediment when dewatering and obtain all necessary permits.
<input type="checkbox"/>		Trap sediment on-site, using BMPs such as sediment basins or traps, earthen dikes or berms, silt fences, check dams, soil blankets or mats, covers for soil stock piles, etc.
<input type="checkbox"/>		Divert on-site runoff around exposed areas; divert off-site runoff around the site (e.g., swales and dikes).
<input checked="" type="checkbox"/>	C-2	Protect adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

Worksheet B

C.3 – Source Controls

Select appropriate source controls and identify the detail/plan sheet where these elements are shown.

Yes	Detail/Plan Sheet No.	Features that require source control	Source Control Measures (Refer to Local Source Control List for detailed requirements)
<input type="checkbox"/>		Storm Drain	Mark on-site inlets with the words “No Dumping! Flows to Bay” or equivalent.
<input type="checkbox"/>		Floor Drains	Plumb interior floor drains to sanitary sewer [or prohibit].
<input type="checkbox"/>		Parking garage	Plumb interior parking garage floor drains to sanitary sewer. ⁸
<input type="checkbox"/>		Landscaping	<ul style="list-style-type: none"> ■ Retain existing vegetation as practicable. ■ Follow ReScape (www.rescapeca.org) principles. Select diverse species appropriate to the site. Include plants that are pest- and/or disease-resistant, drought-tolerant, and/or attract beneficial insects. ■ Minimize use of pesticides and quick-release fertilizers. ■ Use efficient irrigation system; design to minimize runoff.
<input type="checkbox"/>		Pool/Spa/Fountain	Provide connection to the sanitary sewer to facilitate draining. ⁸
<input type="checkbox"/>		Food Service Equipment (non-residential)	Provide sink or other area for equipment cleaning, which is: <ul style="list-style-type: none"> ■ Connected to a grease interceptor prior to sanitary sewer discharge.⁸ ■ Large enough for the largest mat or piece of equipment to be cleaned. ■ Indoors or in an outdoor roofed area designed to prevent stormwater run-on and run-off, and signed to require equipment washing in this area.
<input type="checkbox"/>		Refuse Areas	<ul style="list-style-type: none"> ■ Provide a roofed and enclosed area for dumpsters, recycling containers, etc., designed to prevent stormwater run-on and runoff. ■ Connect any drains in or beneath dumpsters, compactors, and tallow bin areas serving food service facilities to the sanitary sewer.⁸ ■ For more information, see the New Development Projects Litter Reduction Fact Sheet at: https://www.flowstobay.org/wp-content/uploads/2021/06/New-Dev-Litter-Reduction-Fact-Sheet-062021.pdf
<input type="checkbox"/>		Outdoor Process Activities ⁹	Perform process activities either indoors or in roofed outdoor area, designed to prevent stormwater run-on and runoff, and to drain to the sanitary sewer. ⁸
<input type="checkbox"/>		Outdoor Equipment/ Materials Storage	<ul style="list-style-type: none"> ■ Cover the area or design to avoid pollutant contact with stormwater runoff. ■ Locate area only on paved and contained areas. ■ Roof storage areas that will contain non-hazardous liquids, drain to sanitary sewer⁸, and contain by berms or similar.
<input type="checkbox"/>		Vehicle/ Equipment Cleaning	<ul style="list-style-type: none"> ■ Roofed, pave and berm wash area to prevent stormwater run-on and runoff, plumb to the sanitary sewer⁸, and sign as a designated wash area. ■ Commercial car wash facilities shall discharge to the sanitary sewer.⁸
<input type="checkbox"/>		Vehicle/ Equipment Repair and Maintenance	<ul style="list-style-type: none"> ■ Designate repair/maintenance area indoors, or an outdoors area designed to prevent stormwater run-on and runoff and provide secondary containment. Do not install drains in the secondary containment areas. ■ No floor drains unless pretreated prior to discharge to the sanitary sewer.⁸ ■ Connect containers or sinks used for parts cleaning to the sanitary sewer.⁸
<input type="checkbox"/>		Fuel Dispensing Areas	<ul style="list-style-type: none"> ■ Fueling areas shall have impermeable surface that is a) minimally graded to prevent ponding and b) separated from the rest of the site by a grade break. ■ Canopy shall extend at least 10 ft. in each direction from each pump and drain away from fueling area.
<input type="checkbox"/>		Loading Docks	<ul style="list-style-type: none"> ■ Cover and/or grade to minimize run-on to and runoff from the loading area. ■ Position downspouts to direct stormwater away from the loading area. ■ Drain water from loading dock areas to the sanitary sewer.⁸ ■ Install door skirts between the trailers and the building.
<input type="checkbox"/>		Fire Sprinklers	Design for discharge of fire sprinkler test water to landscape or sanitary sewer. ⁸
<input type="checkbox"/>		Miscellaneous Drain or Wash Water	<ul style="list-style-type: none"> ■ Drain condensate of air conditioning units to landscaping. Large air conditioning units may connect to the sanitary sewer.⁸ ■ Roof drains from equipment drain to landscaped area where practicable. ■ Drain boiler drain lines, roof top equipment, all wash water to sanitary sewer.⁸
<input type="checkbox"/>		Architectural Copper Rinse Water	<ul style="list-style-type: none"> ■ Drain rinse water to landscaping, discharge to sanitary sewer⁸, or collect and dispose properly offsite. See flyer “Requirements for Architectural Copper.”¹⁰

⁸ Any connection to the sanitary sewer system is subject to sanitary district approval.

⁹ Businesses that may have outdoor process activities/equipment include machine shops, auto repair, industries with pretreatment facilities.

¹⁰ See the Flowstobay website: <https://flowstobay.org/wp-content/uploads/2020/04/ArchitecturalcopperBMPs.pdf>

Worksheet C

Low Impact Development – Site Design Measures

Select Appropriate Site Design Measures (Required for C.3 Regulated Projects; all other projects are encouraged to implement site design measures, which may be required at municipality discretion.) Projects that create and/or replace between 2,500 and 5,000 sq.ft. of impervious surface, and detached single family homes that create/replace between 2,500 and 10,000 sq.ft. of impervious surface, must include **one of Site Design Measures a through f** (Provision C.3.i requirements).¹⁰ Larger (>=5,000 sq.ft) projects must also include applicable Site Design Measures g through i. Consult with municipal staff about requirements for your project.

Select appropriate site design measures and Identify the Plan Sheet where these elements are shown.

Yes	Plan Sheet No.	Site Design Measures
<input type="checkbox"/>		a. Direct roof runoff into cisterns or rain barrels and use rainwater for irrigation or other non-potable use.
<input type="checkbox"/>		b. Direct roof runoff onto vegetated areas.
<input checked="" type="checkbox"/>	C-1	c. Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
<input type="checkbox"/>		d. Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
<input type="checkbox"/>		e. Construct sidewalks, walkways, and/or patios with pervious or permeable surfaces. Use the specifications in the C.3 Regulated Projects Guide downloadable at www.flowstobay.org/newdevelopment
<input type="checkbox"/>		f. Construct bike lanes, driveways, and/or uncovered parking lots with pervious surfaces. Use the specifications in the C.3 Regulated Projects Guide downloadable at www.flowstobay.org/newdevelopment
<input type="checkbox"/>		g. Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
<input type="checkbox"/>		h. Conserve natural areas, including existing trees, other vegetation and soils.
<input checked="" type="checkbox"/>	C-1	i. Minimize impervious surfaces.

Regulated Projects can also consider the following site design measures to reduce treatment system sizing:

Yes	Plan Sheet No.	Site Design Measures
<input type="checkbox"/>		j. Self-treating area (see Section 4.2 of the C.3 Regulated Projects Guide)
<input checked="" type="checkbox"/>	C-1	k. Self-retaining area (see Section 4.3 of the C.3 Regulated Projects Guide)

¹⁰ See MRP Provision C.3.a.i.(6) for non-C.3 Regulated Projects, C.3.c.i.(2)(a) for Regulated Projects, C.3.i for projects that create/replace between 2,500 and 5,000 sq.ft. of impervious surface and detached single family homes that create/replace between 2,500 and 10,000 sq.ft. of impervious surface.

