Appendix B
Stormwater Quality Best Management Practice
Design Handbook

Filter Strip Example

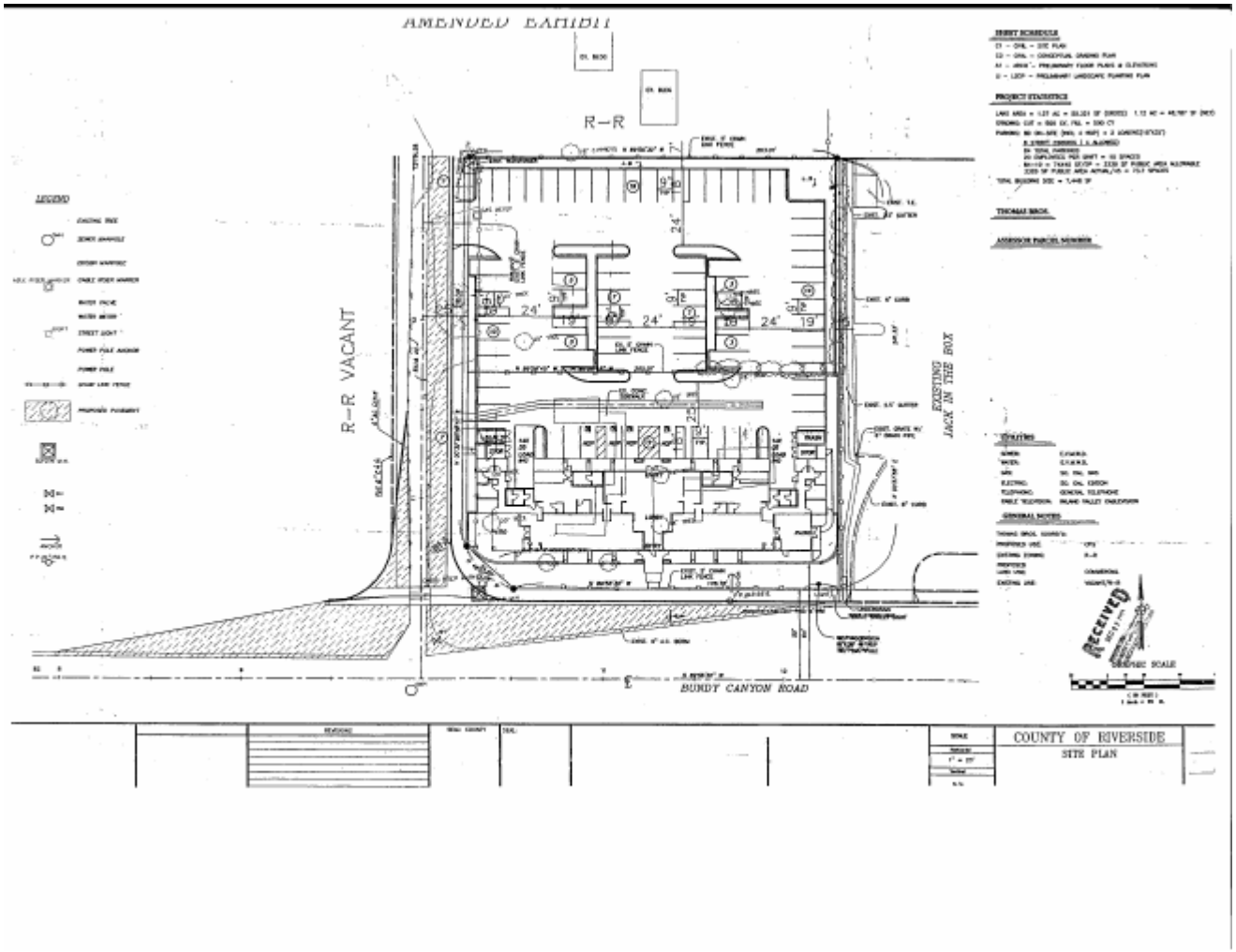

AMENDED EXHIBIT
R-R
R-R VACANT
EXISTING JACK IN THE BOX
BURDY CANYON ROAD
LEGEND
SHEET SCHEDULE
PROJECT STATISTICS
UTILITIES
GENERAL NOTES
RECEIVED
GRAPHIC SCALE
COUNTY OF RIVERSIDE
SITE PLAN

Table 4. Runoff Coefficients for an Intensity = 0.2 $^{in}/_{hr}$ for Urban Soil Types*

Impervious %	A Soil RI =32	B Soil RI =56	C Soil RI =69	D Soil RI =75
0 (Natural)	0.06	0.14	0.23	0.28
5	0.10	0.18	0.26	0.31
10	0.14	0.22	0.29	0.34
15	0.19	0.26	0.33	0.37
20 (1-Acre)	0.23	0.30	0.36	0.40
25	0.27	0.33	0.39	0.43
30	0.31	0.37	0.43	0.47
35	0.35	0.41	0.46	0.50
40 (1/2-Acre)	0.40	0.45	0.50	0.53
45	0.44	0.48	0.53	0.56
50 (1/4-Acre)	0.48	0.52	0.56	0.59
55	0.52	0.56	0.60	0.62
60	0.56	0.60	0.63	0.65
65 (Condominiums)	0.61	0.64	0.66	0.68
70	0.65	0.67	0.70	0.71
75 (Mobilehomes)	0.69	0.71	0.73	0.74
80 (Apartments)	0.73	0.75	0.77	0.78
85	0.77	0.79	0.80	0.81
90 (Commercial)	0.82	0.82	0.83	0.84
95	0.86	0.86	0.87	0.87
100	0.90	0.90	0.90	0.90

*Complete District's standards can be found in the Riverside County Flood Control Hydrology Manual

Worksheet 2

Design Procedure Form for Design Flow

Uniform Intensity Design Flow

Designer:	**Benjie Cho**
Company:	**Riverside County Flood Control and Water Conservation District**
Date:	**5/24/04**
Project:	**BMP Example**
Location:	

1. Determine Impervious Percentage				
a. Determine total tributary area	A_{total} =	**1.27**	acres	***(1)***
b. Determine Impervious %	i =	**90**	%	***(2)***
2. Determine Runoff Coefficient Values Use **Table 2** and impervious % found in step 1				
a. A Soil Runoff Coefficient	C_a =	**.82**		***(3)***
b. B Soil Runoff Coefficient	C_b =	**.82**		***(4)***
c. C Soil Runoff Coefficient	C_c =			***(5)***
d. D Soil Runoff Coefficient	C_d =			***(6)***
3. Determine the Area decimal fraction of each soil type in tributary area				
a. Area of A Soil / ***(1)*** =	A_a =	**0.5**		***(7)***
b. Area of B Soil / ***(1)*** =	A_b =	**0.5**		***(8)***
c. Area of C Soil / ***(1)*** =	A_c =			***(9)***
d. Area of D Soil / ***(1)*** =	A_d =			***(10)***
4. Determine Runoff Coefficient				
a. C = ***(3)***x***(7)*** + ***(4)***x***(8)*** + ***(5)***x***(9)*** + ***(6)***x***(10)*** =	C =	**.82**		***(11)***
5. Determine BMP Design flow				
a. Q_{BMP} = C x I x A = ***(11)*** x 0.2 x ***(1)***	Q_{BMP} =	**0.21**	$\frac{ft^3}{s}$	***(12)***

Datasheet

Site Conditions:

A_{total} = 1.27 acres (from worksheet 2)
Q_{BMP} = 0.21 cfs (from worksheet 2)

Design Assumptions:

1. **Design Flow**
   Q_{BMP} = 0.211 cfs

2. **Minimum Width**
   Calculate minimum width of the grass strip filter (W_m) normal to flow direction:
   $W_m = (Q_{BMP})/0.005$ cfs/ft (minimum) = 42.2 ft

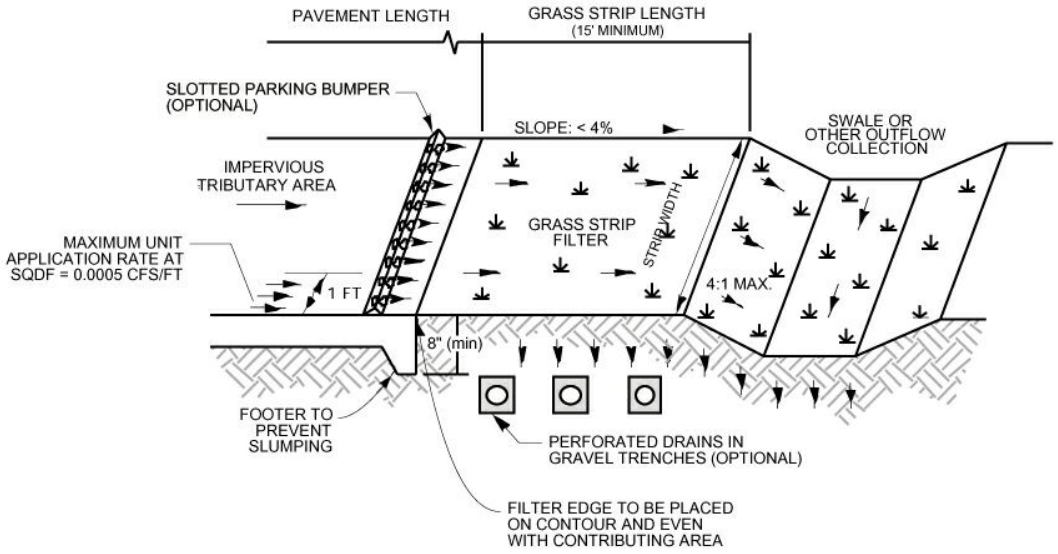
3. **Minimum Length**
   Length of the grass strip filter (Lm) in the direction of flow shall not be less than 15 feet.
   L_m = 15 feet (minimum)

4. **Slope Requirement**
   Slope = 4%

5. **Flow Distribution**
   Level spreader of similar concept.

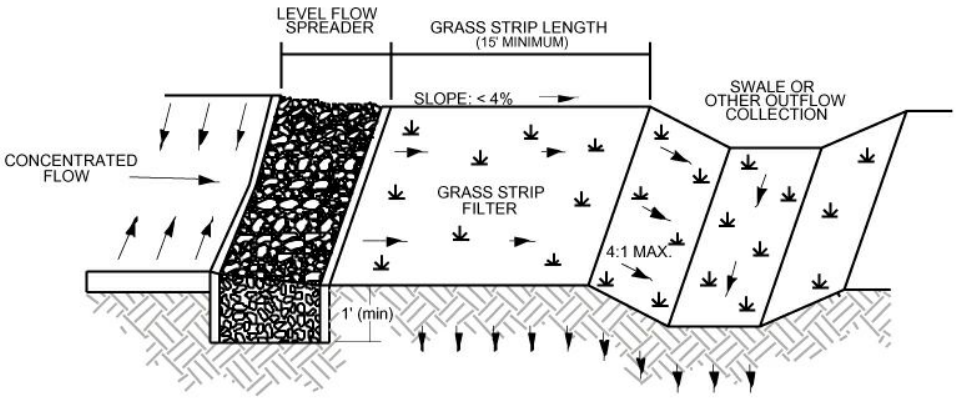
6. **Vegetation**
   3” Grass

7. **Outflow Collection**
   Street gutter



SHEET FLOW CONTROL

NOT TO SCALE



CONCENTRATED FLOW CONTROL

NOT TO SCALE

Figure 12: Grass Filter Strip

Source: Ventura County Guidance Manual

Worksheet 10

Design Procedure Form for Filter Strip

Designer: Benjie Cho
Company: Riverside County Flood Control
Date: 5/20/04
Project: BMP Example
Location: Township 6 South & Range 4 West Section 22

1. Determine Design Flow (Use Worksheet 2)	Q_{BMP} = **.21** cfs
2. Design Width $W_m = (Q_{BMP})/0.005$ cfs/ft	W_m = **42** ft
3. Design Length (15 ft minimum)	L_m = 15 ft
4. Design Slope (4 % maximum)	S_D = 4 %
5. Flow Distribution (check type used or describe "other")	___ slotted curbing ___ Modular Block Porous Pavement _X_ Level Spreader ___other_____
6. Vegetation (describe)	3" grass
5. Outflow Collection (check type used or describe "other")	___ Grass Swale _X_ Street Gutter ___ Storm Drain ___ Underdrain ___ Other_____

Notes: