APPENDIX C

The Simple Method of Determining Adequate Flow Area

This method is only to be used to determine adeqate flow area required for projects that add more than 15,000 square feet of impervious area (IA = Contributing Drainage Area). Beginning at the point of discharge from the site, the surface conveyance facility must have the capacity to convey flows from all contributing upstream drainage areas.

Step 1: Determine flow patterns on your project site, specifically where flow exits the project.

Step 2: Where flow exits the site, determine existing flow area of the exiting drainage channels on your site using the schematic and equation below in Figure 1. Mark on the plans where flow area was determined.

Step 3: Once flow area has been calculated, determine the impervious area (IA) of the project and the nearest lot area to determine the required flow area for your site.

Step 4: A) If the result of **Step 2** is *less* than **Step 3** adequate drainage is not present and the developer must follow current MSD guidelines. B) If the result of **Step 2** is *greater* than **Step 3** adequate drainage is present. If B, then the developer must submit engineering calculations and site plan to the Director of Public Services Director for verification.
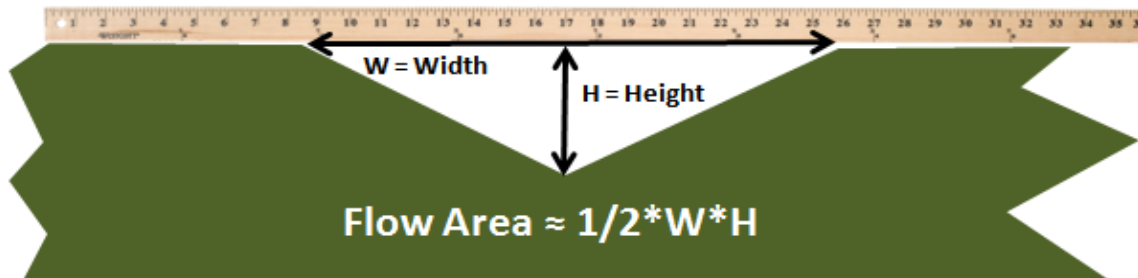
Figure 1 Simple Method - Flow Area Calculation

$$\text{Flow Area} \approx 1/2*W*H$$

Table 1 Simple Method - Flow Area Required

Flow Area in Square Feet

IA (sq ft).	Total lot area --> 1,000	5,000	1/4 Acre 10,890	15,000	1/2 Acre 21,780	30,000	1 Acre 40,000
1,200	0.12	0.19	0.29	0.36	0.48	0.62	0.80
2,500	0.23	0.30	0.40	0.47	0.59	0.73	0.91
3,000	0.27	0.34	0.44	0.51	0.63	0.78	0.95
4,000	0.35	0.42	0.53	0.60	0.72	0.86	1.03
5,000	0.44	0.51	0.61	0.68	0.80	0.94	1.12
7,500	0.65	0.72	0.82	0.89	1.01	1.15	1.33
10,000	0.86	0.93	1.03	1.10	1.22	1.36	1.54
30,000	2.53	2.60	2.71	2.78	2.90	3.04	3.21
40,000	3.37	3.44	3.54	3.62	3.74	3.88	4.05

Read impervious area on the left then read across to right the nearest TOTAL lot size

Concrete channel flow area is 2/3 of the vegetated channel

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