# MONROE COUNTY
# RESIDENTIAL STORMWATER RETENTION CALCULATION SHEET

## 1. Determine Total Impervious Coverage on site:
### a. Determine Impervious Coverage EXISTING prior to new improvement:

| | | | | | |
|---|---|---|---|---|---|
| Roof/slabs | **A** | ft$^2$ | Sidewalks | **D** | ft$^2$ |
| Decks / Patios | **B** | ft$^2$ | Pool/Deck | **E** | ft$^2$ |
| Driveways | **C** | ft$^2$ | Other | **F** | ft$^2$ |

| Impervious Coverage EXISTING prior to improvement (A + B + C + D + E + F) | | *1a* |
|---|---|---|

### b. Determine NEW Impervious Coverage PROPOSED with improvement:

| | | | | | |
|---|---|---|---|---|---|
| Roof/slabs | **A** | ft$^2$ | Sidewalks | **D** | ft$^2$ |
| Decks / Patios | **B** | ft$^2$ | Pool/Deck | **E** | ft$^2$ |
| Driveways | **C** | ft$^2$ | Other | **F** | ft$^2$ |

| Impervious Coverage PROPOSED with improvement (A + B + C + D + E + F) | | *1b* |
|---|---|---|

| Total Impervious Coverage:  EXISTING + PROPOSED (1a+1b) | | *1* |
|---|---|---|

## 2. Determine Percentage of Impervious Coverage on site:

| *1* ft$^2$ | / | ft$^2$ | = | *2* | % of Impervious Coverage |
|---|---|---|---|---|---|
| **Total Impervious Coverage** | | **Total Lot Area** | | | |

## 3. Determine "Disturbed Area" [114-3(*f*)(2) 4]

| ft$^2$ | - | ft$^2$ | = | *3* | Disturbed Area |
|---|---|---|---|---|---|
| **Total Lot Area** | | **Native Vegetation - If no BMP enter "0"** | | | |

For the purposes of this section, the term "disturbed area" includes the entire lot except that the areas covered by the following best management practices (BMP) shall be subtracted from the calculation of disturbed area: (i) Forested upland areas/vegetative buffer strips (both natural and manmade) which will be retained intact and over or through which vehicular access or travel is not possible and will not occur; and (ii) Open water surfaces and wetlands (salt marsh, buttonwood, mangroves, or freshwater marsh habitat types).  It will be the responsibility of the applicant to affirmatively demonstrate that the best management practices used for the project are designed, constructed, and maintained properly.

## 4. Determine Required Swale Volume – Complete a, b, or c:
### a. For a NEW home with **less than 40% Impervious Coverage,** use:

| *3* ft$^2$ | X | 0.083 | = | *4a* ft$^3$ | Swale Volume |
|---|---|---|---|---|---|
| **Disturbed Area** | | | | | |

### b. For a NEW home with **40% or greater Impervious Coverage,** use:

| *3* ft$^2$ | X 0.208 X | *2* % | = | *4b* ft$^3$ | Swale Volume |
|---|---|---|---|---|---|
| **Disturbed Area** | | **% of Impervious Coverage** | | | |

### c. When only **new impervious area** requires storm water retention (**Existing Single Family & Duplexes Only):**
1. When the total lot impervious coverage remains below 40% after the additional development:

| *1b* ft$^2$ | X 0.083 = | *4c1* ft$^3$ | Added Swale Volume |
|---|---|---|---|
| **Impervious Coverage PROPOSED** | | **Swale Volume** | |

2. When the new development increases the total lot impervious area to 40% or above:

| *1b* ft$^2$ | X 0.208 = | *4c2* ft$^3$ | Added Swale Volume |
|---|---|---|---|
| **Impervious Coverage PROPOSED** | | **Swale Volume** | |

## 5. Determine Swale Length (Swale side slopes must be no steepr than 4:1)

| ( | ft X | ft ) / 2 = | ft$^2$ | Cross Sectional Area** |
|---|---|---|---|---|
| | **Width** | **Depth** | | |

| ft$^3$ | / | ft$^2$ | = | ft | Swale Length |
|---|---|---|---|---|---|
| **Swale Volume** | | **Cross Sectional Area** | | | |
| **Either 4 - a, b, c1 or c2** | | **(**e.g. a V-shaped swale with 4:1 slopes, 8 feet wide and 1 foot deep has 4 SF of Cross Sectional Area.)** | | | |

Source:  These Formulas are derived from the criteria for Water Quality treatment in paragraphs (f)(2)b. & a. of Monroe County Code 114-3.
**Updated 9/5/2012**