##### MDC Scorecard for Infiltration Devices

| Blue = In current 15A NCAC 2H .1008 rule languageRed = TRW recommendationBlack = From BMP Manual | **Is this proposed MDC necessary for the Infiltration Device to:** |
| --- | --- |
| Function in perpetuity? | Protect WQ standards? | Remove TSS? | Optimize TN & TP removal? | Optimize bacteria removal? | Not necessary, just a good idea |
| 1. | SITING. Infiltration systems shall be a minimum of 30 feet from surface waters and 50 feet from Class SA waters. (d)(1) |  |  |  |  |  |  |
| 2. | SITING. Infiltration systems shall be a minimum distance of 100 feet from water supply wells. (d)(2) |  |  |  |  |  |  |
| 3. | SITING. The bottom of infiltration systems shall be a minimum of two feet above the seasonal high water table; (d)(3) However, per the TRW, the separation can be relaxed to one foot when the applicant can prove that the water table will subside to its pre-storm elevation in five days or less. (TRW Guidance on SHWT Separation from Infiltration Systems.) |  |  |  |  |  |  |
| 4. | SITING. Soils must have a minimum hydraulic conductivity of 0.52 inches per hour to be suitable for infiltration; (d)(6) |  |  |  |  |  |  |
| 5. | SITING. There must be a minimum of one foot of naturally occurring soil above the SHWT and another one foot of fill may be provided. SL2008-211 |  |  |  |  |  |  |
| 6. | SITING. The bottom shall be a minimum of 2 feet above any underlying impervious soil horizon or bedrock (BMP Manual MDE 17). |  |  |  |  |  |  |
| 7. | SITING. BMP shall be located a minimum of 15 feet down gradient of any structure. (BMP Manual MDE 15) |  |  |  |  |  |  |
| 8. | SITING. BMP shall not be located on industrial sites or designated contaminated land used or activities such as areas subject to frequent oil or other petroleum contamination (BMP Manual MDE 19) |  |  |  |  |  |  |
| 9. | HYDROGEOLOGIC INVESTIGATION. A site-specific hydrogeologic investigation should be performed to establish the suitability of the BMP. The minimum geotechnical testing is one test hole per 5,000 square feet of infiltrating area, with a minimum of two borings per facility. (BMP Manual text) |  |  |  |  |  |  |
| 10. | DRAINAGE CONFIGURATION. Infiltration systems must be designed such that runoff in excess of the design volume by‑passes the system and does not flush pollutants through the system; (d)(4) |  |  |  |  |  |  |
| 11. | PRETREATMENT. Pretreatment devices must be provided to prevent clogging. Pretreatment devices include filter strips, grassed swales and forebays. (BMP Manual MDE 20). |  |  |  |  |  |  |
| 12. | PRETREATMENT. Infiltration devices that are interconnected with roof downspouts or patio drains must include measures to stream out entrained leaves and other litter. (BMP Manual text) |  |  |  |  |  |  |
| 13. | FLOW SPREADING. There shall be a maximum of 2 ace-inches of runoff per inlet into the device. (BMP Manual MDE 16) |  |  |  |  |  |  |
| 14. | FLOW SPREADING. Inflow must be evenly spread out across the infiltration system. (BMP Manual text) |  |  |  |  |  |  |
| 15. | BOTTOM OF INFILTRATION BASINS. The bottom of infiltration basins must be lined with a layer of clean sand with a depth of 4 inches or greater, unless the native soil is equivalent (1-2% fines or less). (BMP Manual text) Question for the MDC Team: should vegetation be allowed at the bottom of an infiltration basin? |  |  |  |  |  |  |
| 16. | DRAINAGE MEDIUM FOR INFILTRATION TRENCHES. Uniform sand, gravel or crushed stone (i.e., uniformity coefficient of 2 or smaller) is preferable as a drainage medium. Drainage media should be enclosed on all sides by a geotextile filter. The top surface of the geotextile filter should be 6-12 inches below the upper surface of the drainage media. The other surfaces of the geotextile should be 6-12 inches below the upper surface of the drainage media. The fabric, together with the overlying material, can be removed and disposed of when excessive sediments accumulate on the filter and begin to retard flow into the device. (BMP Manual text) |  |  |  |  |  |  |
| 17. | GEOMETRY. The bottom shall be installed at a 0-0.05% grade (level). (BMP Manual MDE 14) |  |  |  |  |  |  |
| 18. | TRENCH GEOMETRY. Trenches must be shallower than their largest surface dimension to prevent categorization as an “injection well.” (BMP Manual MDE 13) |  |  |  |  |  |  |
| 19. | TRENCH GEOMETRY. Trench depth shall be no more than 8 feet (BMP Manual MDE 21; but later the chapter says: “Infiltration trench depths must be between 3 and 8 feet. It is recommended that the width of a trench (perpendicular to influent flow direction) be less than 25 feet. Broad, shallow trenches reduce the risk of clogging by spreading the flow over a larger area for infiltration.” |  |  |  |  |  |  |
| 20. | DRAW DOWN. Infiltration systems must be designed to completely draw down the design storage volume to the seasonal high water table under seasonal high water conditions within five days and a hydrogeologic evaluation may be required to determine whether the system can draw down in five days; (d)(5) |  |  |  |  |  |  |
| 21. | OBSERVATION WELL. Infiltration systems may be required on a case‑by‑case basis to have an observation well to provide ready inspection of the system; (d)(8) |  |  |  |  |  |  |
| 22. | OBSERVATION WELL. A minimum of 1 observation well shall be provided (BMP Manual MDE 22). The monitoring well shall consist of a 4- to 6-inch diameter PVC pipe with a locking cap. (BMP Manual text) |  |  |  |  |  |  |
| 23. | VEGETATIVE FILTERS. Vegetative filters designed in accordance with Paragraph (f) of this Rule are required from the overflow of all infiltration systems and discharge of all stormwater wet detention ponds. These filters shall be at least 30 feet in length, except where a minimum length of 50 feet is required in accordance with Rule .1005(2)(b)(iii) of this Section; (c)(4) Note the BMP Manual section 16.3.9 contains options for increasing the size of the infiltration device and  |  |  |  |  |  |  |
| 24. | PUMPED INFILTRATION SYSTEMS. Pumped infiltration systems will be considered on a case-by-case basis, and will take into consideration the basin location, soils, water table and other site-specific factors per BMP Manual section 16.3.10. |  |  |  |  |  |  |
| 25. | DEWATERING PROVISION. There should be a dewatering provision in the event of failure. This can be done with underdrain pipe systems. (BMP Manual text) |  |  |  |  |  |  |
| 26. | CONSTRUCTION. BMP shall be used only after entire upstream area has been stabilized. (BMP Manual MDE 18)  |  |  |  |  |  |  |
| 27. | CONSTRUCTION. Temporary drainage or erosion control measures should be used to reduce the potential for damage to the infiltration device before the site is stabilized. The control measures may include stabilizing the surface with erosion mats, sediment traps, and diversions. Vegetative cover and the emergency spillway also should be completed as quickly as possible during construction. (BMP manual text) |  |  |  |  |  |  |
| 28. | MAINTENANCE. Maintenance shall be per Table 16-1 of the BMP Manual. (BMP Manual text) |  |  |  |  |  |  |
| REC | SITING. Infiltration basins should not be located on slopes exceeding 15 percent (BMP Manual) |  |  |  |  |  |  |