



City of Bartow

Stormwater Design Standards

Part 10

PART 10: STORMWATER DESIGN STANDARDS

I. INTENT

The design of the stormwater management facilities shall comply with the rules of the Southwest Florida Water Management District (SWFWMD), Florida Department of Environmental Protection (FDEP), and any other statutory requirements that may affect the facility, in addition to the City of Bartow. Whenever a conflict occurs between requirements and different agencies, the more stringent criteria shall apply.

- A. Storm drainage facilities shall be installed by the developer which the consulting engineer certifies as adequate to handle a minimum rainfall of 7.5 inches per hour without damage to the facilities and shall be governed by the City drainage plan. When existing off-site drainage facilities would be adversely impacted by the proposed discharge, the developer shall install and pay for such additional improvements as may be required. Where additional capacity is required to handle the needs of the general storm drainage system of the City, costs of such extra capacity shall be prorated between the developer and other interests in a manner acceptable to the City.
- B. Stormwater facilities shall be designed so that the peak pre-development discharge rate at the point of stormwater discharge is not exceeded by the peak post-development rate during a 25 year - 24 hour storm event, having a total rainfall of 7.5 inches. This condition applies to all sites, even to those qualifying for a Standard General for Minor Activities Environmental Resource Permit from SWFWMD, which by itself might not require a "pre/post" rate match for small sites. Detention and/or retention with filtration of the first 1/2 inch of runoff or the runoff from the first inch of rainfall, shall be provided as required by SWFWMD and DEP.
- C. All installations shall be in conformance with all applicable SWFWMD and FDEP rules. The developer shall furnish the City with approved stormwater permits and/or exemptions prior to commencing any site work, except, that if the developer can produce written evidence to the City Staff demonstrating that an accepted application to either or both of these agencies has been in process for more than 120 days but with no permit issued, and in the opinion of the City Consulting Engineer all of the developers construction plans are in order and meet the requirements of this chapter, then the City Commission may waive this requirement, if in their opinion the public health, safety and welfare would not be impaired by such action.
- D. If on-site retention with no positive outfall is to be provided, stormwater facilities shall be designed to retain all runoff from a 100 year - 24 hour storm event without flooding of buildings. In addition, the plat shall indicate that no positive outfall is provided and that if applicable, some lots may flood during extreme storm events. In such "closed" basins, finish floor elevations shall be a minimum of 2.5 feet above the 100-year design high water level.
- E. Along with preliminary construction plans, a drainage map and a complete set of drainage calculations shall be provided to the consulting engineer. The drainage map shall include all areas that drain into, or through, the proposed subdivision and the subdivision outfall system. The diameter, types, sizes, and flow lines of all existing and proposed storm sewer and cross-drain pipes shall be shown, along with the inlets and manholes. The drainage areas that drain into each inlet shall be depicted, along with the drainage areas to the nearest 1/10 of an acre and the "C" factor used. In addition, the

drainage map shall indicate flood plain areas as indicated on the FEMA Maps, locations and boundaries of wetlands areas or waters of the state; locations and results of soils borings and percolation tests; and a SCS soil mapping, if available.

- F. All retention areas shall be designed based on a SCS Type II Florida modified storm distribution with antecedent moisture condition per SWFWMD regulations.
- G. Cross drains shall be designed for a 10 year storm for minor cross drains and collector road culverts and a 25 year storm for arterial road culverts. All culverts and cross drains shall be designed so that under full flow conditions, the hydraulic grade line is at least one foot below the gutter profile. When pipes are sized based on partial depth flows, the depth of flow shall be not more than 2/3 of the pipe diameter at velocities exceeding 15 feet per second. All pipes shall be designed for a minimum velocity of 2.5 feet per second.
- H. All construction shall be in accordance with City specifications and standard details and all structures shall be in accordance with DOT specifications. The storm sewer system may empty into an existing storm sewer system or any other outlet approved by the consulting engineer at a rate not to exceed the peak pre-development rate. Overland flow over roadways shall not be permitted.