

19. STORMWATER MANAGEMENT

- A. Describe the existing drainage patterns on-site as shown on Map I, including any potential flooding and erosion problems.**

The site is relatively flat and as such there is no discernible existing drainage pattern. The rain that falls within the boundaries of the property will seep through the soil until it is saturated. After saturation is complete, the site will flood vertically in proportion to the surrounding areas. There is no information that would indicate that the site in its present condition would experience flooding to a degree different than the surrounding areas. There is currently no perimeter berm or other feature to maintain the stormwater runoff from leaving the site.

- B. Describe the drainage system shown on Map I, including any wetlands to be used as part of the system, and discuss the design criteria (including stage-storage/stage discharge assumption) to be used for the various elements. Provide typical cross-sections (showing dimensions, slopes and control elevations) for any proposed lakes or swales. Identify the control elevation for all drainage structures. Include information as to what design storm will be used for what portions of the system.**

There are no wetlands on the property. The proposed drainage system will consist of French Drains, swales, and grease baffles with outfalls to the proposed lakes. The elevation of the roadways will be constructed at or above the Miami-Dade County Flood Criteria Elevation of +8.75 N.G.V.D. The finished floor elevations will be based on whichever of the following criteria is the highest; FIRM Map, the 100 year-3 day storm event stage or 8-inches above crown of road for residential structures (4-inches for non-residential structures)(See attached flood routing calculations).

The FIRM map for this areas shows the Project contains two Base Flood elevation criteria; the majority of the site lies within zone AH-9 and a small portion adjacent to SW 162nd Avenue lies within zone "X". The drainage system for the local roads will be designed for a 5-year storm event and the drainage system for the arterial/collector roads will be designed for a 10-year storm event with a safety factor of 2 and 4 respectively. The Project will be divided into two major basins. One is located north of the railroad tracks and the second one is the area south of the tracks.

The control water elevation (October Water Level Elevation) for the Project is +5.75 N.G.V.D. based on Miami-Dade County Public Works Department Manual. Lake slopes will be built as per the Miami-Dade County Public Works Department and Zoning department standards.

- C. From Map I, indicate the total number of acres in each drainage area and specify the acreage of any portions of drainage areas outside the site boundaries. Complete the following table for on-site drainage areas.**

The following table summarizes the drainage areas:

Table 19-1 Stormwater Drainage Areas				
Land Use	Impervious Surfaces (AC)	Building (AC)	Open Space (AC)	Total (AC)
Basin 1				
Single Family	0	0	0	
Multi-Family	4.54	3.89	4.54	
Retail	3.52	3.08	2.20	
Office	6.0	6.0	3.0	
Industrial	12.63	12.63	6.31	
School	0	0	0	
Parks	0	0	3.39	
Roads	3.32	0	0.60	
Lakes	14.25	0	0	
Total				89.90
Basin 2				
Single Family	57.81	38.54	96.35	
Multi-Family	95.33	96.73	103.43	
Retail	8.18	7.15	5.11	
Office	0	0	0	
School	10.50	14.0	10.50	
Parks	0	0	58.71	
Roads	120.53	0	14.76	
Lakes	123.04	0	0	
Total				860.70

Source: Ford Engineers

Note: 15.65 acre railroad right-of-way is not included in these calculations.

- D. Specify and compare the volume and quality of run-off from the site in its existing condition to the anticipated run-off at the end of each phase of development. (The parameters to be used to define “quality” and methodology should be agreed to by the regional planning council and other reviewing agencies at the pre-application conference state). Identify any changes in timing or pattern of water flows between pre- and post-development conditions. Indicate major points of discharge and ultimate receiving water body(ies). Indicate what provisions will be incorporated in the design of the drainage system including a summary description of any Best Management Practices to be utilized, to minimize any increase in run-off from the site and to minimize any degradation of water quality in the ultimate receiving body over that occurring in its pre-development state.**

One of the elements of the proposed stormwater management system is a perimeter berm with a top of berm elevation at or above the 100 year – 3 day storm stage. This perimeter berm will contain the stormwater within the Project

site (“no offsite discharge”). This design is in excess of the standard requirement which is to contain the 25 year – 3 day storm event on site. Currently, the site has no means of keeping the stormwater runoff from leaving the site. The proposed French drain system will be designed so that at a minimum, the first inch of runoff is treated before overflows are allowed to the lakes (see attached water quality calculations). The stormwater runoff will be further treated by the use of grass swales in the residential streets and grease baffles in parking areas. Currently, the site provided no treatment of the stormwater runoff.

E. Who will operate and maintain the drainage system after completion of the development?

All Drainage systems within the Public right-of-ways will be owned and maintained by the Miami-Dade County Public Works Department. The Homeowners Association(s) (HOA) will own and maintain the drainage system located within private roads. The HOA will also own and maintain the lakes and outfall structures which are part of the overall stormwater management system.