On October 8th, 2016 a storm event occurred and led to severe flooding of both northern and southern parking lots of Sheps Center (located at 725 Martin Luther King Jr Boulevard, Chapel Hill, NC). The runoff overtopped the banks of the ditch and flowed into the parking lots, carrying substantial amount of debris, sediment and leaves, and severely affecting the normal function of the parking lots. The irregular open channel parallel to the Sheps building is determined to be the main cause of flooding by field observation. This report sought to identify the problem in detail and quantify the significance. Four workable technical options were presented and compared against five criteria. The recommended solution is a combination of all the four options, includes increasing the channel size, fixing the choke points, improving pipe inlet protection and replacing the culvert. An implementation plan was designed and the project costs were estimated.

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