Hills of Cedar Creek 2022

Preliminary Drainage Report

The proposed subdivision is located in FEMA Flood Zone “X”. The 18.0 acre site is located west of Eastern Hills Drive, between the portion of Ballard Circle constructed as part of a previous phase and Ardmore Drive, which is currently under construction. The natural topography of the site slopes substantially (10% on average) from the northeast in a southwesterly direction with the drainage entering an existing drainage channel along the west east side of the site.

Proposed pipes and inlet structures will be designed to convey runoff underground within the subdivision. Any runoff not captured by inlets will utilize overland flow directed towards two detention areas on adjacent sites that were sized to accommodate the proposed developed area. The site will utilize two dry-detention basins to store the 100-year storm event and treat the runoff to meet water quality requirements determined by the Iowa Department of Natural Resources. The pond just south of the site has a detention volume of approximately 19,800 cubic feet. The pond just north of the site has a detention volume of approximately 322,550 cubic feet. The captured runoff will be discharged to an existing drainage channel adjacent to the site following the detention and water quality processes.

Table 1. Discharge Rate Summary

Design Storm (year)	Existing Q, cfs	Proposed Q, cfs (without detention)
2	**24.77**	83.08
10	**39.54**	111.00
100	**111.49**	170.30

The roadway profiles will be designed to balance the earthwork haul-off/import due to the steep topography of the site. Profile grades will be designed with a minimum of 0.5% slope and inlets will be located so gutter spread does not exceed SUDAS Design Standards.

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