Attachment C

Hillside Estates Subdivision

Preliminary Drainage Report

The proposed subdivision is located in FEMA Flood Zone "X". The 6.36 acre site is located at the northwest corner of the intersection of Franklin Avenue and Bennett Avenue. The natural topography of the site slopes substantially (12% on average) from the northwest in a southeasterly direction with the drainage entering curb inlets along both Franklin Avenue and Bennett Avenue along the south and 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-site. Additional runoff not routed to the detention areas will surface flow offsite to existing curb inlets along Franklin Avenue and Bennett Avenue. The site will utilize two dry detention basins to store the 100-year storm event. The pond on the south side of the site has a detention volume of approximately 12,900 cubic feet. The pond in the northeast corner of the site has a detention volume of approximately 13,300 cubic feet. Runoff from the site will be treated with two hydrodynamic separator manholes, located at the outlets of the two dry detention basins, to meet water quality requirements determined by the Iowa Department of Natural Resources. The captured runoff will be discharged to the public storm sewer infrastructure adjacent to the site following the detention and water quality processes. See Table 1 below for existing and proposed runoff rates for the site.

Table 1. Discharge Rate Summary

Design Storm (year)	Existing Q, cfs	Proposed Q, cfs (without detention)	Proposed Q, cfs (with detention)	Peak Flow Reduction (cfs)*
2	**15.01**	22.28	**7.33**	7.68
10	**22.38**	33.23	**10.71**	11.67
100	**39.45**	58.56	**31.36**	8.08

*This represents a reduction from the existing condition to the final proposed condition

The roadway profiles will be designed to follow existing grades and minimize 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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