

January 15, 2021

Douglas County Community Development Department
Planning Services Division
100 Third St., Castle Rock, CO 80104

**Subject: Dutch Heritage Gardens Drainage Letter for USR Amendment 4
(Review Findings - PS2020-025)**

To whom it may concern,

This letter is prepared in accordance with the provisions of the Douglas County Drainage Design and Technical Criteria for the owner thereof. The purpose of this drainage letter is to evaluate compliance with the *“Final Amended Phase III Drainage Report for Dutch Heritage Gardens (Master Drainage Report),”* by HCL (November 11, 2019).

Site location

Dutch Heritage Gardens (DHG) is located in a parcel of land located in the Southeast Quarter of Section 28 and the Northeast Quarter of Section 33, Township 10 South, Range 65 West of the Sixth Principal Meridian, County of Douglas, State of Colorado.

Proposed Development

Dutch Heritage Gardens Operates a greenhouse complex that currently exists of a 10-acre (435,000 sq. ft.) on approx. 120 acres of land, all zoned AG (A-1). DHG proposes to construct an additional approximately 285,000 sq. ft. of additional greenhouse growing space, as well as an additional storage warehouse of approx. 9,500 sq. ft. Flows within the area of disturbance will flow via storm sewer facilities and proposed swales to an existing drainage swale and outfalling into the extended detention basin noted in the Master Drainage Report recently completed and by the County.

There are no known flooding problems on the site and no known wetlands located on or adjacent to the site.

Drainage Plan

General Concept

Proposed flows for the developed conditions generally flow from northwest to southeast within basis B, C, and D noted in the Master Drainage Study. The predominant flow pattern will be overland sheet flow and concentrated flow within swales. Roof drainage from the building will discharge via downspouts and drain to swales and perimeter drains surrounding the building ultimately out falling into Swale 1.0 sized and constructed with the improvements noted in the Master Drainage Report.

Basin Characteristics

This property has been analyzed based on the Master Drainage Report, which anticipated a basin area with 90% imperviousness for the aforementioned greenhouse expansion. The proposed development is consistent with the Master Drainage Report as the impervious area maintains the intended flow patterns to the existing extended detention basin.

Sediment/Erosion Control

Based on the existing approved GESC there are erosion control measures currently implemented and noted in the area of the proposed expansion. These BMPs will be inspected daily and maintained after a storm event. Additional BMPs may be added as needed during construction in the form of rock socks in the swales surrounding the proposed greenhouse expansion.

Conclusion

The proposed development will generate flows that are accommodated for in the Master Drainage design for the existing detention facility. Therefore, no additional volume or pond modifications are required and no additional analysis or infrastructure design will be needed to convey flows from the building site to the existing pond.

Sincerely,



Noah Nemmers, PE
Baseline Engineering Corporation

Certification

"I hereby certify that this drainage letter was prepared by me (or under my direct supervision) in accordance with the provisions of the Douglas County Drainage Design and Technical Criteria for the owner thereof."



Registered Professional Engineer
State of Colorado No. 39820

References

1. *Douglas County Drainage Design and Technical Criteria*, amended July 8, 2008.
2. *Urban Drainage Criteria Manual, Volumes 1-3*; Mile High Flood Control District, Denver, CO. January 2016 (Revised October 2019).
3. *Final Amended Phase III Drainage Report for Dutch Heritage Gardens (Master Drainage Report)*, by HCL (November 11, 2019)