Fort Collins Water Utilities Review
3-13-2020
Matt Simpson

FINAL DRAINAGE REPORT

PARKING AT 112 WEST MAGNOLIA STREET

LOTS 1-2, BLOCK 113, FTC
112 WEST MAGNOLIA STREET
FORT COLLINS, CO 80524

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After treatment within the permeable pavers, stormwater will infiltrate through the bottom of the paver sections and dry well. If the paver system overflows due to clogging, catch basins at the low point of the pavers will direct runoff into the underdrain system.

When improvements are being added to an existing developed site, onsite detention is only required if there is an increase in impervious area greater than 5,000 square feet in the Old Town Basin. The effective impervious area for the existing site is 7,602 square feet and the effective impervious area for the proposed site is 12,205 square feet, a difference of 4,603 square feet. Since the effective impervious area added to the site is under 5,000 square feet, detention is not required.

Table added.

Sub-basin P1 produces a 100-year flow of 3.48 cfs. The ~~Modified FAA~~ spreadsheet was created to incorporate rainfall data from the Fort Collins Stormwater Criteria Manual, Table 3.4-1. This spreadsheet was used to calculate the inflows and outflows from the site. With permeable pavers, the City of Fort Collins does not require a volume treatment based on WQCV. The treatment method is filtration and infiltration. The pavers criteria is a maximum run-on:pavers ratio of 3:1.

The sub-base under the pavers is designed per Fort Collins Detail D-54, Interlocking Pavers Cross Section. The water quality volume is held in the 10" #2 rock layer.

V. CONCLUSIONS

A. Compliance with Standards

The drainage design for the Parking at 112 West Magnolia Street follows the requirements of the Fort Collins *Stormwater Criteria Manual* as well as the City's floodplain regulations. The criteria and recommendations of the *Urban Storm Drainage Criteria Manual* are also reflected in the design of the drainage systems.

B. Drainage Concept

The drainage design for the Parking at 112 West Magnolia Street will safely convey onsite flows from the parking lot into the existing storm inlet, via the permeable paver detention system. Permeable pavers and the preservation of an existing large tree help to minimize the impact of the development to the surrounding properties. Water quality and LID treatment will be achieved by the permeable paver system.