

STEWART & ASSOCIATES

Consulting Engineers and Surveyors

June 29, 2001

Mr. Basil Hamdan
Fort Collins Utilities
P.O. Box 480
Fort Collins, CO 80522

Final Approved Report
B. Hamdan Date 7/3/01

Dear Basil,

This is regarding the Mawson Lumber and Hardware site at 115 East Lincoln Avenue, Fort Collins, Colorado. The site is a part of Blocks 8 and 9, City of Fort Collins. The site is a part of the Old Town Master Drainage Basin. There is a 24" X 30" concrete storm drain that runs through the property to the Cache la Poudre River. There are three existing storm water area inlets along the Southeasterly side of the Mawson property that discharge into the 24" X 30" storm drain.

Mr. Tom Moore, the owner of Mawson Lumber and Hardware is proposing to concrete a 10 foot wide strip along their Southeasterly property line and another loading area that is also adjacent to their property line that is approximately 40 feet wide. The total area of the proposed impervious surfacing is 6,124 square feet. They will construct two open metal sheds on part of the proposed concrete to store lumber.

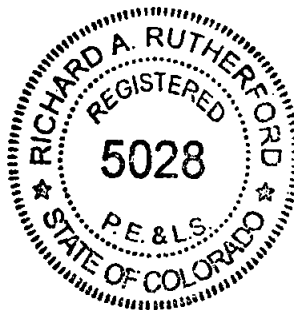
The Southeasterly property line is approximately 400 feet from the Westerly bank of the Cache la Poudre River. The existing stormwater inlets are therefore, at the downstream end of the drainage system. The runoff from this site will discharge into the storm drain before the upstream runoff fills the storm drain. The length of the drainage basin is approximately 3,500 feet. The time of concentration is approximately 40 minutes.

We feel that the increase in runoff from this site does not warrant on site storm water detention.

The site plan for the new lumber storage and the runoff calculations are enclosed. If you have any questions regarding this matter, please call.

Sincerely,

Richard A. Rutherford
Richard A. Rutherford, P.E. & L.S.
RAR/meh



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By: RAR Date: 6/20/01 Client: TOM MOORE Sheet No. of

Project: MAWSON LUMBER & HARDWARE LTD. - 115 E. LINCOLN AVE

Subject: STORMWATER RUNOFF CALCULATIONS

$$\text{AREA} = 6,124 \text{ S.F.} = 0.14 \text{ AC.}$$

$$\text{HISTORIC } C = 0.20$$

$$T_c = \frac{1.87(1.1 - 0.20) 40^{1/2}}{2.25^{1/3}} = 8 \text{ MIN.}$$

$$\text{HIST. } Q_{2\text{yr}} = 0.20 \times 2.40 \times 0.14 = 0.07 \text{ C.F.S.}$$

$$\text{HIST. } Q_{10\text{yr}} = 0.20 \times 4.10 \times 0.14 = 0.11 \text{ C.F.S.}$$

$$\text{HIST. } Q_{100\text{yr}} = 1.25 \times 0.20 \times 8.38 \times 0.14 = 0.29 \text{ C.F.S.}$$

$$\text{AREA} = 0.14 \text{ AC.}$$

$$\text{DEVELOPED } C = 0.95$$

$$T_c = \frac{1.87(1.1 - 0.95) 40^{1/2}}{2.25^{1/3}} = 1.4 \text{ MIN.}$$

USE 5 MIN.

$$\text{DEV. } Q_{2\text{yr}} = 0.95 \times 2.85 \times 0.14 = 0.38 \text{ C.F.S.}$$

$$\text{DEV. } Q_{10\text{yr}} = 0.95 \times 4.87 \times 0.14 = 0.65 \text{ C.F.S.}$$

$$T_c = \text{USE 5 MIN. DEV. } Q_{100\text{yr}} = 1.25 \times 0.95 \times 9.95 \times 0.14 = 1.39 \text{ C.F.S.}$$