FINAL DRAINAGE REPORT
FOR
PART OF LOT 3, BRUSH MOBILE HOME P.U.D.

PREPARED FOR
ROCKY MOUNTAIN AUTOMOTIVE

MAY 3, 1995

STEWART & ASSOCIATES, INC.
103 SOUTH MELDRUM STREET
FORT COLLINS, COLORADO 80521
970/482-9331
May 3, 1995

Mr. Glen Schluter  
Stormwater Utility  
City of Fort Collins  
P.O. Box 580  
Fort Collins, CO 80522

Dear Mr. Schluter:

This is regarding the Rocky Mountain Automotive property at 108 East Vine Drive. The property is the South 121 feet of Lot 3 of the Brush Mobile Home P.U.D. The property is in the revised Poudre River floodway and has an existing automotive repair business on it. The owners would like to add onto the building, and since it is in the floodway, the additions are proposed for the East and West ends of the building in order not to reduce effective flow area of the floodway. The proposed additions are shown on the enclosed site and drainage plan, which depicts that cross-sectional (flow) area has not been reduced. The additions do not protrude North or South of the existing building.

Mr. Paul McWilliams, the contractor has furnished information that the cost of the proposed additions is not greater than 50% of the market value of the existing structure.

The lot contains 0.2222 acres of which 0.1998 acre is impervious. The proposed additions to the building contain 1090 square feet and will be built where there is existing asphalt. There will be no increase of impervious area in the proposed development. Therefore, there will be no increase in runoff rate from the property after the additions are completed. There will be no stormwater detention provided due to no increase in runoff, and because the site is in the floodway.

The site slopes from Northwest to Southeast across the lot at approximately 1.0%. The runoff flows Easterly along the North side of Vine Drive and then South to the Cache la Poudre River. The direction of flow in the floodway is also Easterly. The base flood elevation is 4965.3 and the existing floor elevation of the automotive repair shop is 4960.86.

The construction plan for the additions will be for the existing asphalt to be removed where the building will be built. The footings will then be dug and the foundation poured immediately thereafter. The slab will follow soon after. As soon as the foundation is poured, there will be very little bare ground left. There will not be any proposed erosion control for the West addition. There will be a silt fence placed along the East property line adjacent to the East addition. The material excavated during construction will be trucked away as it is removed. The existing asphalt parking lot will be cleaned so as to preclude mud being tracked onto Vine Drive.

James H. Stewart  
and Associates, Inc.  
103 S. Meldrum Street  
P.O. Box 429  
Ft. Collins, CO 80522
Part of Lot 3, Brush Mobile Home P.U.D.
Final Drainage Report
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In summary, the proposed additions are in the floodway but are oriented so as to not reduce the effective flow area. There is no additional stormwater runoff due to no additional imperviousness. The addition is not a substantial improvement. The runoff flow pattern is not being changed, and erosion from the site is being controlled by a silt fence. A flood plain use permit is being applied for. The proposal, therefore, does not adversely affect the safety and welfare of the neighborhood.

If you have any questions regarding this proposal, please call. The existing site and drainage plan and stormwater runoff calculations and erosion control calculations are included as a part of this report.

This drainage report and the request for approval of the flood plain use permit are in compliance with the City of Fort Collins Storm Drainage specifications and criteria.

Sincerely,

Richard A. Rutherford, P.E. & L.S.
President

rsc

enclosures
### Storm Water Runoff

**Area:** 0.2223 acres

- **Impervious Area:** 0.1926 acres (86.9%)
- **Pervious Area:** 0.0224 acres (10.1%)

**Dev. Hist. C = (0.899 x 0.95) + (0.101 x 0.25) = 0.88**

**Tc = \frac{1.67 (1.1 - 0.88) 125^{\frac{1}{2}}}{1^{\frac{1}{3}}} = 5\text{ min.}**

**Dev. Hist. Q_{3yr} = 0.88 x 3.25 x 0.22 = 0.63\text{ cfs.}**

**Q_{10yr} = 0.88 x 5.6 x 0.22 = 1.08\text{ cfs.}**

**Tc = 1\text{ min. Dev. Hist. Q}_{100yr} = 1.25 x 0.88 x 7.2 x 0.22 = 1.58\text{ cfs.}**
CONSTRUCTION SEQUENCE

PROJECT: **Rocky Mountain Automotive**

SEQUENCE FOR 1995 ONLY COMPLETED BY: **RAC** DATE: **May 2, 1995**

Indicate by use of a bar line or symbols when erosion control measures will be installed. Major modifications to an approved schedule may require submitting a new schedule for approval by the City Engineer.

<table>
<thead>
<tr>
<th>1995 YEAR MONTH</th>
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| RAINFALL EROSION CONTROL |   |   |   |   |   |   |   |   |   |   |   |   |
| STRUCTURAL: |   |   |   |   |   |   |   |   |   |   |   |   |
| Sediment Trap/Basin |   |   |   |   |   |   |   |   |   |   |   |   |
| Inlet Filters |   |   |   |   |   |   |   |   |   |   |   |   |
| Straw Barriers |   |   |   |   |   |   |   |   |   |   |   |   |
| Silt Fence Barriers |   |   |   |   |   |   |   |   |   |   |   |   |
| Sand Bags |   |   |   |   |   |   |   |   |   |   |   |   |
| Bare Soil Preparation |   |   |   |   |   |   |   |   |   |   |   |   |
| Contour Furrows |   |   |   |   |   |   |   |   |   |   |   |   |
| Terracing |   |   |   |   |   |   |   |   |   |   |   |   |
| Asphalt/Concrete Paving |   |   |   |   |   |   |   |   |   |   |   |   |
| Other |   |   |   |   |   |   |   |   |   |   |   |   |
| F O U N D A T I O N |   |   |   |   |   |   |   |   |   |   |   |   |

| VEGETATIVE: |   |   |   |   |   |   |   |   |   |   |   |   |
| Permanent Seed Planting |   |   |   |   |   |   |   |   |   |   |   |   |
| Mulching/Sealant |   |   |   |   |   |   |   |   |   |   |   |   |
| Temporary Seed Planting |   |   |   |   |   |   |   |   |   |   |   |   |
| Sod Installation |   |   |   |   |   |   |   |   |   |   |   |   |
| Nettings/Mats/Blankets |   |   |   |   |   |   |   |   |   |   |   |   |
| Other |   |   |   |   |   |   |   |   |   |   |   |   |

| STRUCTURES: INSTALLED BY |   |   |   |   |   |   |   |   |   |   |   |   |
| MAINTAINED BY |   |   |   |   |   |   |   |   |   |   |   |   |
| VEGETATION/MULCHING CONTRACTOR |   |   |   |   |   |   |   |   |   |   |   |   |
| DATE SUBMITTED |   |   |   |   |   |   |   |   |   |   |   |   |
| APPROVED BY CITY OF FORT COLLINS ON |   |   |   |   |   |   |   |   |   |   |   |   |
| HDI/SF-C:1989 |   |   |   |   |   |   |   |   |   |   |   |   |
## Rainfall Performance Standard Evaluation

**Project:** Rocky Mountain Automotive  
**Completed By:** R.A.R  
**Date:** May 2, 1995

<table>
<thead>
<tr>
<th>Developed Subbasin</th>
<th>Erodibility Zone</th>
<th>Asb (ac)</th>
<th>Lsb (ft)</th>
<th>Ssb (%)</th>
<th>Lb (feet)</th>
<th>Sb (%)</th>
<th>PS (%)</th>
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<tbody>
<tr>
<td>Lot</td>
<td>High</td>
<td>0.22</td>
<td>120</td>
<td>1</td>
<td>120</td>
<td>1</td>
<td>74.9</td>
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</tbody>
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For additional information or an official copy, please contact City of Fort Collins Utilities 700 Wood Street Fort Collins, CO 80524 USA
EFFECTIVENESS CALCULATIONS

PROJECT: Rocky Mountain Automotive

Erosion Control Method | C-Factor Value | P-Factor Value | Comment
--- | --- | --- | ---
Bare Ground | 1.0 | 1.0 | 0.022Ac
Existing Bldg. | 0.01 | 1.0 | 0.034
Existing Asphalt | 0.01 | 1.0 | 0.209
Foundation | 0.01 | 1.0 | 0.025Ac
Silt Fence | 1.0 | 0.8 |

MAJOR BASIN | PS | SUB BASIN | AREA (Ac) | CALCULATIONS
--- | --- | --- | --- | ---
Lot | 74.9% | | 0.22Ac | \[
W_{TB} C = \left(1.0 \times 0.022\right) + \left(0.01 \times 0.034\right) + \left(0.01 \times 0.209\right) \times \left(0.01 \times 0.01\right)
\]

\[
W_{TB} C = 0.11
\]

\[
W_{TB} P = 0.8
\]

\[
E_{FF} = \left[1 - (0.11 \times 0.8)\right] \times 100 = 91.2\%
\]

OK
FLOODPLAIN USE PERMIT

PETITIONER NAME: Rocky Mountain Automotive

ADDRESS: 108 E. Vine Drive, Ft Collins, CO 80524 PHONE: 493-8059

OWNER NAME: 

ADDRESS: 

LEGAL DESCRIPTION AND/OR ADDRESS OF PROPERTY: Part Lot 3, Brown Mobile Home P.O.D. / 108 E. Vine Dr. Ft Collins, CO 80524

DESCRIPTION OF PROPOSED USE, TYPE OF CONSTRUCTION (ZONING). STRUCTURE ELEVATED OR FLOOD PROOFED? IF FLOOD-PROOFED WILL HUMAN INTERVENTION BE REQUIRED?

EXISTING GROUND ELEV: 4960.70 M.S.L.; FINISHED GROUND ELEV. 4960.70 M.S.L.

LOWEST FLOOR ELEVATION (INCLUDING BASEMENT): 4960.86 M.S.L.

IF FLOOD-PROOFED, TO WHAT ELEVATION: 

BASE FLOOD ELEVATION (BFE): 4965.3 M.S.L. (FIRM MAPS)

REGULATORY BASE FLOOD ELEVATION: 4966.8 M.S.L. (BFE + 1.5’)

VARIANCE FROM ORDINANCE: YES* NO

*IF YES, ATTACH "APPLICATION FOR VARIANCE OF CITY OF FORT COLLINS FLOODPLAIN REGULATIONS"

SIGNATURE OF PETITIONER 

DATE 

FLOODPLAIN USE PERMIT - APPROVED 

DENIED 

SIGNATURE OF CITY PERSONNEL 

DATE 

COMMENTS:

APPLICATION/PERMIT #: 

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