

DRAINAGE REPORT

for

**Adobe Creek II
MINOR SUBDIVISION**

September 22, 1999

Prepared For:

Applied Earth Sciences
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RGCE Job No.

225005



I. LOCATION AND DESCRIPTION

This minor subdivision is a replat of Lot 1 of Adobe Creek Ranch into four Lots. The Lots are located within the NW ¼, Section 27, T1N, R2W, Ute Meridian, in the City of Fruita, Mesa County Colorado. The site is currently agricultural, with a gravel driveway access road which leads to an existing barn and mobile trailer home. The proposed subdivision will create two larger 35 acre lots (Lots 1 & 3) to the east, and two smaller lots (Lots 2 and 4) to the west, with a paved private common driveway. The lots are expected to contain single family residences, associated driveways, lawn areas, and landscaping. An existing barn and a mobile trailer home located on Lot 2 will be removed.

The site is bounded on the north by the I-70 frontage road, on the east by a small farm parcel, on the south by a Grand Junction Drainage District ditch, and on the west by other parcels in the Adobe Creek Ranch subdivision. A concrete irrigation ditch runs along the south side of the I-70 Frontage Road, flowing from east to west, terminating at Adobe Creek.

An existing drainage study prepared by Aspen Engineering for the Adobe Creek Estates (Ranch) covers this property, and addresses existing conditions.

II. DRAINAGE BASINS

This site has been divided into two drainage basins for analysis, with two associated design points, as shown on the accompanying drainage exhibit. Soils in the project area are Type B, as defined by the Soil Conservation Service. The first basin, approximately 2.7 acres in size, takes into account flows generated from improving an existing gravel road to a new paved common drive. Flows generated from the roadway will be collected in side ditches along the paved common drive, and discharge into an existing drainage ditch located along the south edge of Lots 2 and 4.

The second drainage basin is mainly the new Lot 4 of this subdivision. There is an existing 12" CMP at the low point of this lot that conveys runoff to a Grand Junction Drainage District Ditch.

III. DRAINAGE DESIGN CRITERIA

The methodology contained in the City of Grand Junction/Mesa County Storm Water Management Manual (SWMM) has been used in the preparation of this report. There are no known existing drainage studies that will affect the design or study of this site, except as noted in Section I above. The Rational Method has been used to determine the peak runoff rates for the site.

IV. DRAINAGE FACILITY DESIGN

The stormwater discharge from this site will largely follow existing patterns, which is to allow sheet flow toward the south and west. A small amount of flow will be concentrated in roadside ditches along the proposed common driveway, however, this concentration accounts for a very small portion of the overall site, and will mostly be storm water runoff from the driveway itself.

Flow from the existing lot 4 will be concentrated in a small shallow swale to the Grand Junction Drainage District ditch.

No detention facilities have been designed or are proposed for this subdivision. While the development will cause increases in stormwater discharges, the increases will be very minor, and the construction of detention facilities would be counterproductive. Proper pond maintenance and continuing proper functioning of such small facilities in a rural area is highly unlikely.

V. CONCLUSIONS

This report complies with the requirements of the SWMM.

The following table summarizes the hydrologic and hydraulic findings for the site:

Design Point	2 yr.	100 yr.
1 – Existing	1.1 cfs	5.1 cfs
1 – Proposed	1.8 cfs	7.6 cfs
2 – Existing	0.7 cfs	3.7 cfs
2 – Proposed	0.9 cfs	4.5 cfs

I hereby certify that this report for the Adobe Creek II Minor Subdivision was prepared by me.



Mark Austin, P.E.
Registered Professional Engineer
State of Colorado No. 29778

REFERENCES

1. Stormwater Management Manual, Public Works Department, City of Grand Junction, June 1994

APPENDIX

A MAJOR BASIN
 1 DESIGN POINT

----- MAJOR BASIN BOUNDARY

DESIGN FLOW CALCULATIONS

DESIGN POINT	2 yr.	100 yr.
1 - Existing	1.1 cfs	5.1 cfs
1 - Proposed	1.8 cfs	7.6 cfs
2 - Existing	0.7 cfs	3.7 cfs
2 - Proposed	0.9 cfs	4.5 cfs



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ADOBE CREEK RANCH II
DRAINAGE EXHIBIT
 PREPARED BY
APPLIED EARTH SCIENCES

DESIGNED BY	JOS
CHECKED BY	MRA/JOS
DATE	02/12/99
PROJECT NO.	225005
SCALE	1" = 100'
SHEET NO.	3