CITY OF ALBUQUERQUE

May 20, 2011

David Soule, P.E.
Rio Grande Engineering
P.O. Box 67305
Albuquerque, NM 87193

Re: A Class RV Storage
Grading and Drainage Plan
Engineer's Stamp date 5-6-11 (D-16/D002A3)

Dear Mr. Soule,

Based upon the information provided in your submittal received 5/6/11, the above referenced plan cannot be approve for Building Permit until the following comments are addressed:

- A basin map is needed.
- Existing Calculations are needed.
- Proposed and existing contours are needed.
- The sidewalk culvert is no longer acceptable unless other means can not be achieved. In this case I believe that tying into the back of the existing inlet would be better, or having the flows exit through the entry way.
- How are the flows being affected to the north and south of this site?

If you have any questions, you can contact me at 924-3421, or Rudy E. Rael at 924-3977.

Sincerely,

Paul Olson, P.E.,CFM
Senior Engineer, Planning Dept.
Development and Building Services

PLO/RER
C: file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

DRAINAGE REPORT

For

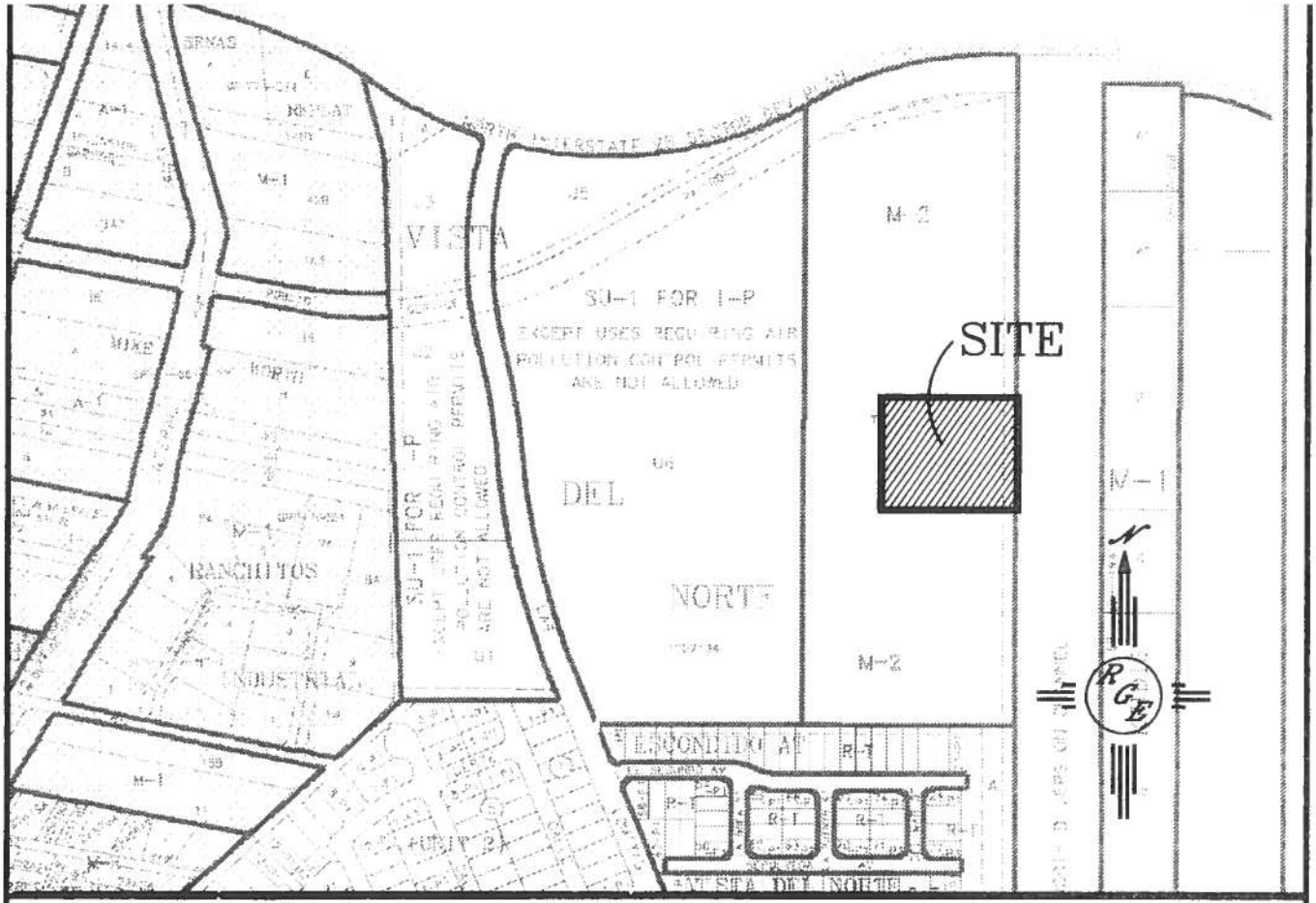
A Class RV Storage
@Journal Center
7950 Jacs Lane NE
Albuquerque, New Mexico

Prepared by

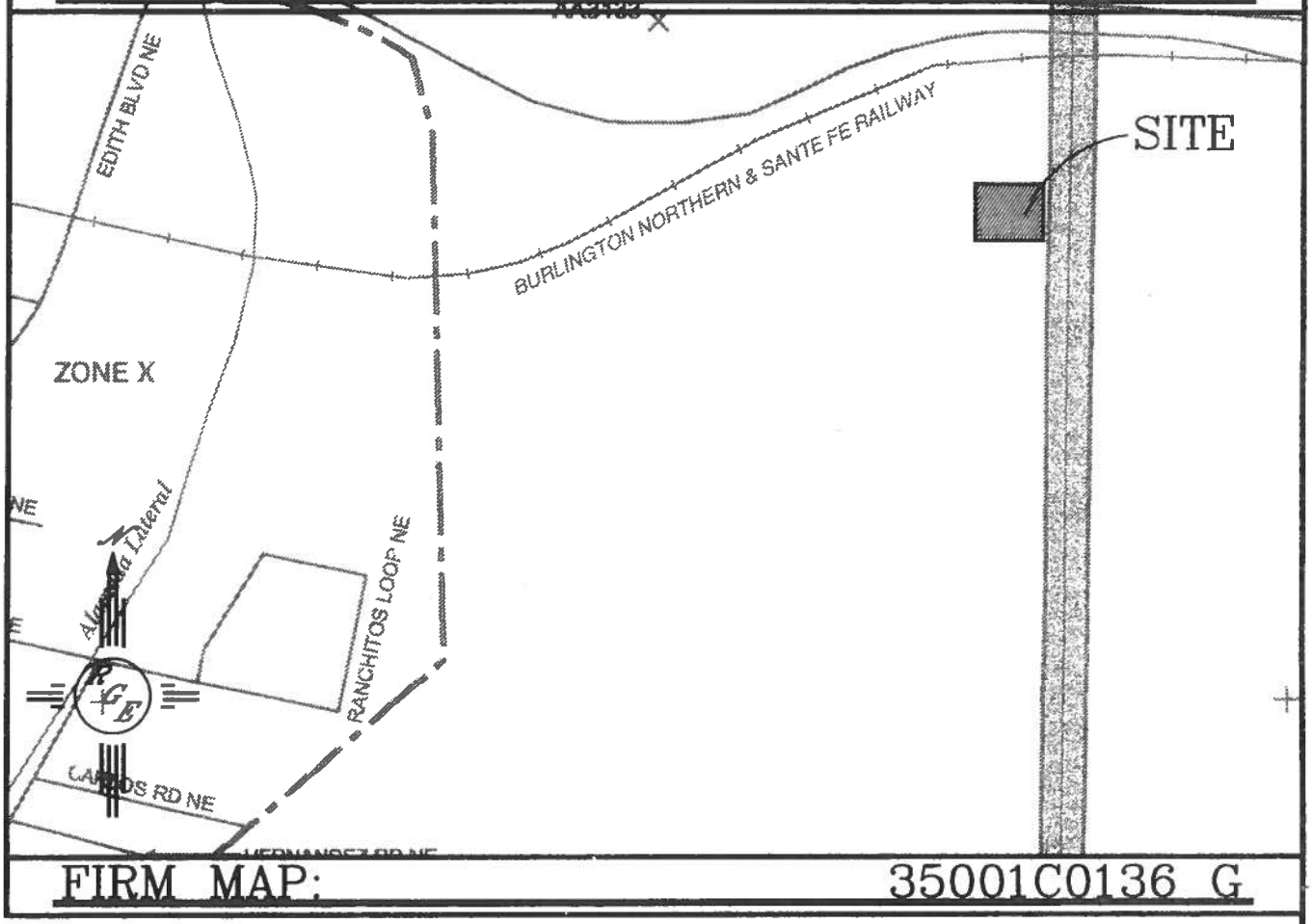
Rio Grande Engineering
PO Box 67305
Albuquerque, New Mexico 87193

April 2011

David Soule P.E. No. 14522



ZONE ATLAS: D-16-Z



FIRM MAP: 35001C0136 G

LEGAL DESCRIPTION:

LT 3 PLAT OF BLUE SKY BUSINESS PARK

PROPOSED CONDITIONS

The proposed improvements consist of approximately 40,000 square feet of phased covered storage for RV's. The floors and the drive isles will be gravel. The site will be graded such that there will be two basins, the southern basin will discharge 4.28 cfs out the existing driveway. The northern basin will discharge 2.47 cfs to a 2' rundown and sidewalk culver connected to Jacs Lane. As shown in appendix A, the culvert has capacity. A 6-8" tall header curb will run the length of the western property line to assure flow leaves the site via the rundown and driveway.

SUMMARY AND RECOMMENDATIONS

This project is a development of a graded pad site. The site is within the master drainage plan area of the Blue Sky development. This site is allowed to free discharge to Jacs and the storm drain within. Since the effected area site encompasses more than 1 acre, a NPDES permit should be required prior to any construction activity.

APPENDIX A

SITE HYDROLOGY

Weighted E Method

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 6-hr. Weighted E (ac-ft)	100-Year, 6-hr. Volume (ac-ft)	100-Year, 6-hr. Flow cfs	10-day Volume (ac-ft)
north basin	27442.80	0.630	0%	0	10%	0.063	34%	0.2142	56%	0.353	1.649	0.087	2.47	0.134
south basin	47480.40	1.090	0%	0	10%	0.109	34%	0.3706	56%	0.610	1.649	0.150	4.28	0.231
combined	74923.20	1.72		0.00		0.17		0.58		0.96		0.24	6.76	0.36

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm

Ea= 0.53 Qa= 1.56
Eb= 0.78 Qb= 2.28
Ec= 1.13 Qc= 3.14
Ed= 2.12 Qd= 4.7

Existing calcs

NORTHERN RUNDOWN

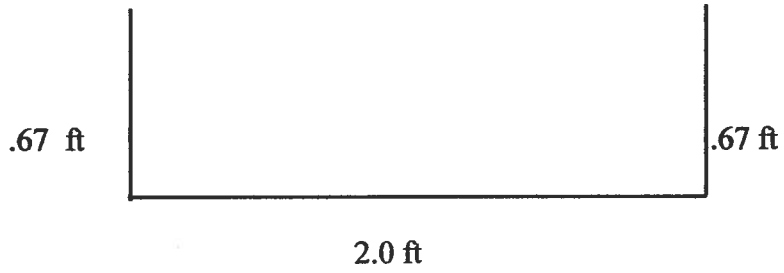
Weir Equation:

$$Q = CLH^{3/2}$$

Q= 2.47
C = 2.95
H = 0.67 ft
L = Length of weir

$$L = \frac{2.47}{2.95(.67)^{3/2}}$$

L = 1.4 ft
Use 2.0 feet for length of weir
Max Q=2.95(2)(1^3/2)=3.24 cfs



Channel Capacity

	Top Width	Bottom Width	Depth	Area	WP	R	Slope	Q Provided	Q Required	Velocity
	(ft)	(ft)	(ft)	(ft^2)	(ft)		(%)	(cfs)	(cfs)	(ft/s)
southeastwall	2	2	0.67	1.34	3.34	0.4011976	2	9.04	2.50	1.87

Manning's Equation:

Q = 1.49/n * A * R^(2/3) * S^(1/2)

A = Area

R = D/4

S = Slope

n = 0.017