



**CEI Engineering Associates, Inc.**

ENGINEERS ■ SURVEYORS ■ LANDSCAPE ARCHITECTS ■ PLANNERS

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August 19, 2015

Benton County  
Planning Department  
905 NW 8<sup>th</sup> St  
Bentonville, AR 72712

**RE: Silica Valley RV/Boat Storage  
Silica Street (Ark. Hwy 12)  
Benton County, Arkansas  
CEI Project #29127.0**

Dear Planning Administrator,

I'm writing this letter to summarize the drainage improvements associated with the above-referenced project located along Silica Street east of the City of Rogers, AR. A Drainage Report was prepared by WR Consulting, Inc., dated October 25, 2006, that outlined the drainage improvements for this site. However, the proposed storage buildings and gravel area depicted on that plan were not constructed.

The current proposal is to construct these improvements in accordance with the October 2006 Report with smaller buildings and the same gravel area/limits. The current proposal will result in a reduction of 912 square feet (or 0.02 acres) of roof area as discussed in the October 2006 Report. Therefore, the runoff flows discussed in the October 2006 Report will be lowered having a reduced impact on the downstream properties and facilities.

Per the October 2006 Report, detention is not needed due to the proximity to the lake, meaning the peak runoff from this site reaches the lake prior the peak of the Beaver Lake watershed in its entirety. Also, this site is roughly 3% of the watershed area contributing to the existing channel along the east side of the property, meaning the minor increases in runoff are not significant as described in the October 2006 Report. We concur with this reasoning.

In conclusion, the proposed improvements at the storage facility on Highway 12 East meets the general provisions for Benton County, Arkansas with regard to the management of stormwater runoff. The proposed work will not change the overall drainage patterns that exist today, and will have no significant increase in the discharge of runoff expected from the site. Therefore, impact on the downstream properties is not significant.

*Providing Consolidated Land Development Services*

CALIFORNIA ■ TEXAS ■ ARKANSAS ■ LOUISIANA ■ MINNESOTA ■ GEORGIA ■ PENNSYLVANIA

This drainage report has been prepared in general accordance with the current requirements of the applicable storm water jurisdictions and approving agencies. In addition, storm events/frequencies, runoff calculations, discharge criteria, pipe hydraulics, evaluation methods (including computer software applications), etc., have been based on the guidelines/requirements of these permitting entities and also reflect the application of generally accepted standard of engineering practice. This design is based on, and limited by, the weather data, the analysis and their applicability as presented herein.

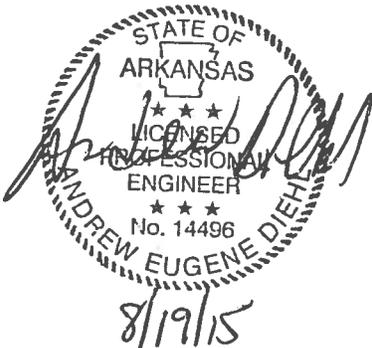
Respectfully Submitted,



Andrew Diehl, P.E., CPESC  
Project Engineer

Enclosure:

Copy of WR Consulting Drainage Report, dated October 2006



273-7989

OR

636-7989



**CONSULTING  
INC.**

**1900 S. WALTON BLVD.  
BENTONVILLE AR 72712**

**DRAINAGE REPORT**

October 25, 2006

JOB #06022

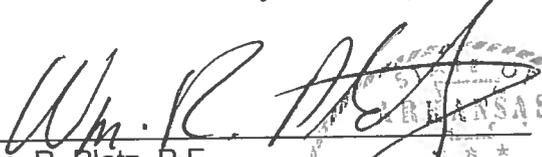
**SILICA VALLEY/RV BOAT STORAGE  
LARGE SCALE DEVELOPMENT  
BENTON COUNTY, ARKANSAS**

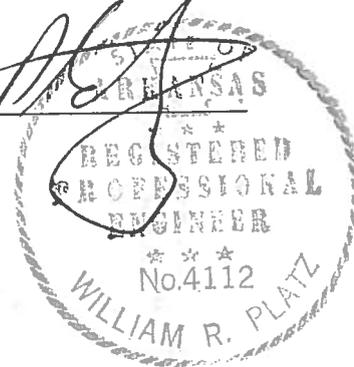
The location of the property for this study is on the Northeast corner of Arkansas State Highway 12 and Pollock Road behind Silica Valley RV Park at 5206 Silica Street.

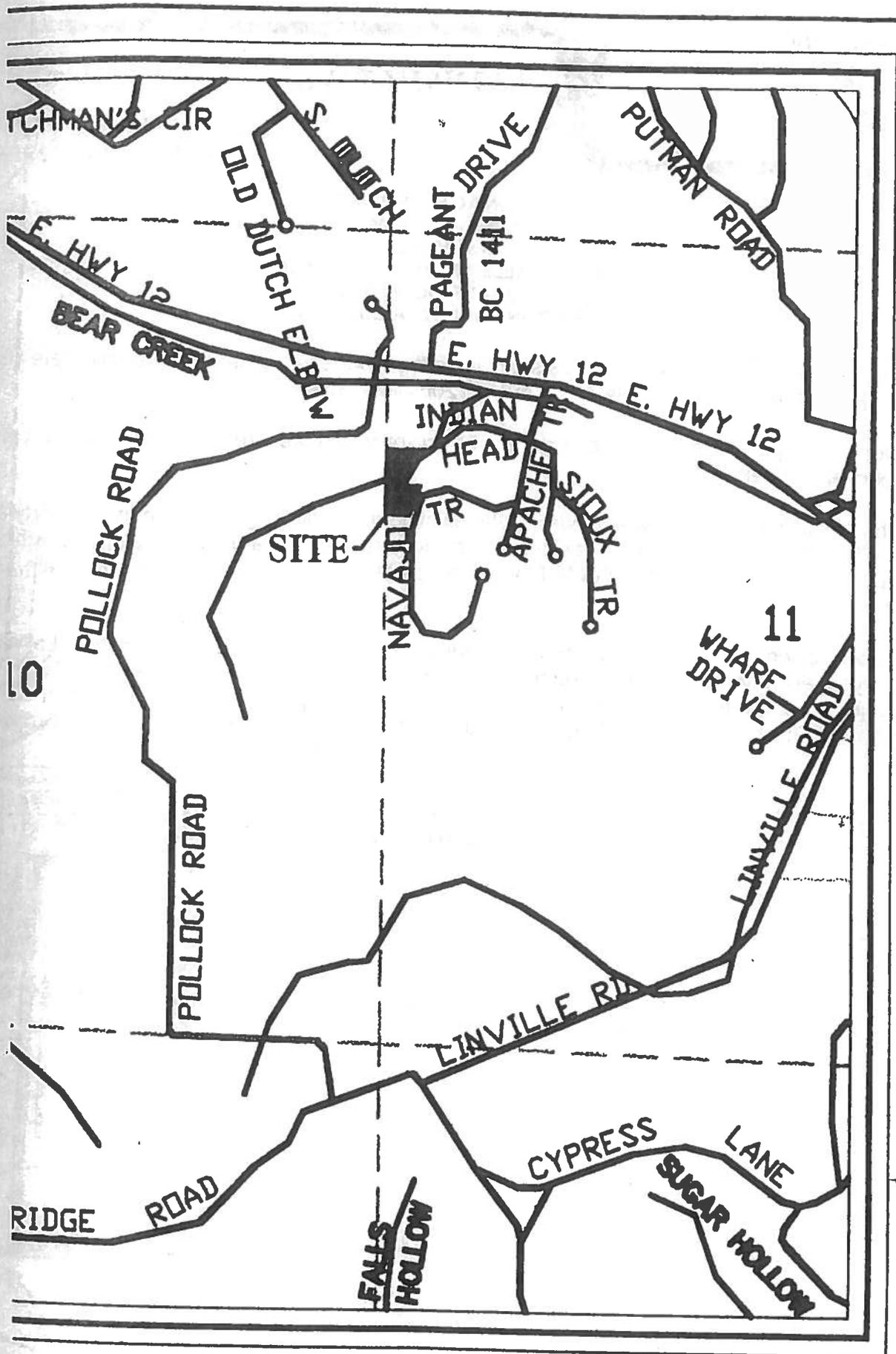
Our site is part of a 106 acre drainage basin, of which we are 3%. The site is located at the downstream end of said basin.

The runoff flows from the site by way of the existing major drainage ditch on the property at the rear of the site. The type of soil located at the site is Elshah. No portion of the area under study is within the Zone "A" or "AE" as shown on the FIRM/FEMA Flood map panel no. 05007C0160 E, effective date, September 18, 1991.

In conclusion, due to close proximity of the lake, the runoff from this site is in Beaver Lake before the major 100 year event from the region reaches the lake. It is our opinion, that no Detention Pond is needed for this project, and that there is no significant impact on the drainage conditions upstream or downstream. It is our opinion that no threat to life or limb will be caused by the completion of this project.

  
Wm. R. Platz, P.E.





Vicinity Map

LOT F GALL ADDITION  
SILICA VALLEY  
MOBILE HOME PARK  
OWNER: ELMER GALL

1 PRIVATE DRIVE  
EASEMENT / EGRESS  
EASEMENT

S 82°05'59" E  
390.10' EXISTING 10' UTILITY EASEMENT

EXISTING STORAGE BUILDING  
F.F.E. = 84.50'

EXISTING GRAVEL SURFACE

LOT G  
3.31 ACRES

PROPOSED STORAGE BUILDING  
F.F.E. = 96.33'

20' DRAINAGE EASEMENT  
EXISTING DRAINAGE SWALE

LOT F GALL ADDITION  
SILICA VALLEY  
MOBILE HOME PARK  
OWNER: ELMER GALL

PROPOSED GRAVEL SURFACE

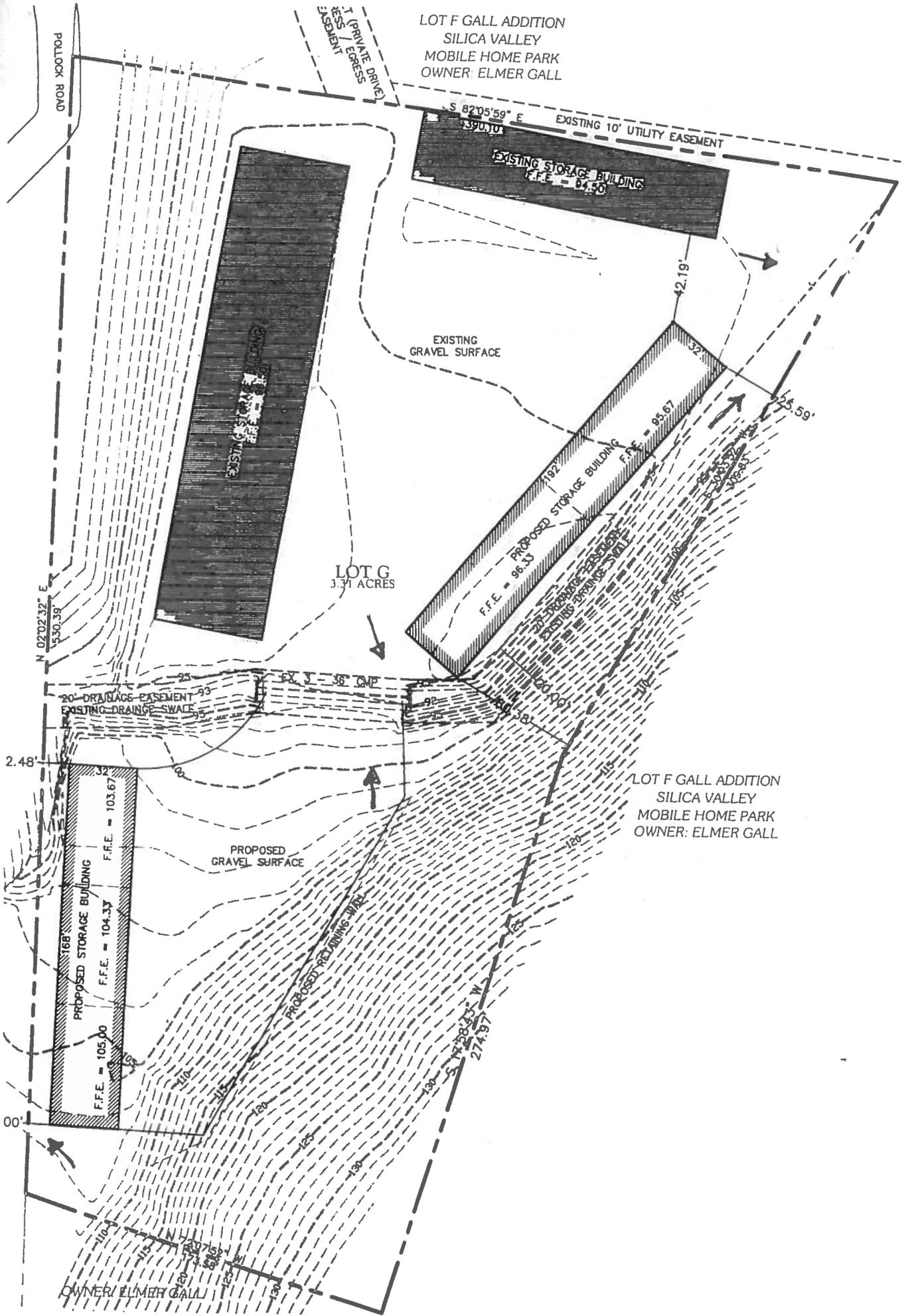
PROPOSED STORAGE BUILDING  
F.F.E. = 105.00'

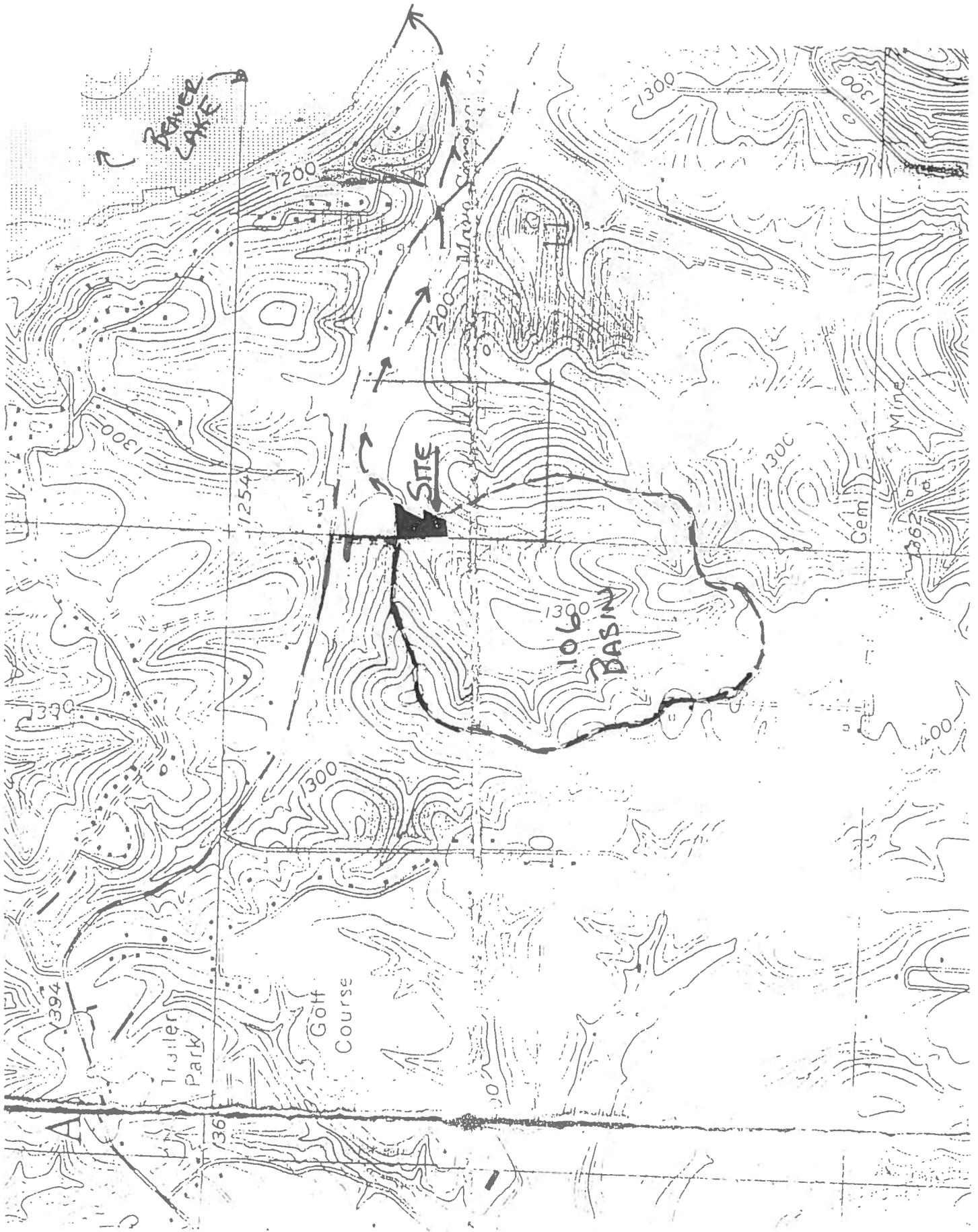
PROPOSED STORAGE BUILDING  
F.F.E. = 104.33'

PROPOSED STORAGE BUILDING  
F.F.E. = 103.67'

PROPOSED RETAINING WALL

OWNER: ELMER GALL





# Hydrograph Return Period Recap

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	Rational	-----	-----	5.49	-----	6.47	7.20	8.27	9.12	9.95	SILICA VALLEY RV/BOAT STORAG POST DEV. RUNOFF W/ 2 NEW BL
2	Rational	-----	-----	5.95	-----	7.01	7.80	8.96	9.88	10.78	

Proj. file: SILICA VALLEY STORAGE 06022.gpw Run date: 10-25-2006

# Hydrograph Plot

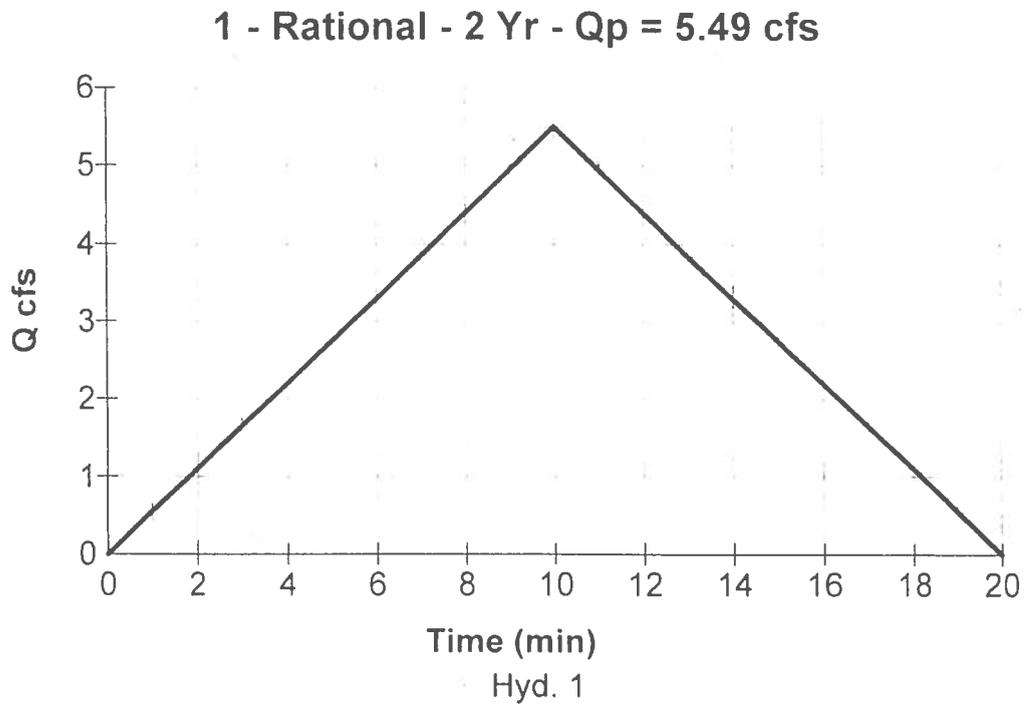
Hydraflow Hydrographs by Intellisolve

## Hyd. No. 1

SILICA VALLEY RV/BOAT STORAGE PRE DEV.

Hydrograph type	= Rational	Peak discharge	= 5.49 cfs
Storm frequency	= 2 yrs	Time interval	= 1 min
Drainage area	= 3.3 ac	Runoff coeff.	= 0.36
Intensity	= 4.607 in/hr	Time of conc. (Tc)	= 10 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 3,294 cuft



# Hydrograph Plot

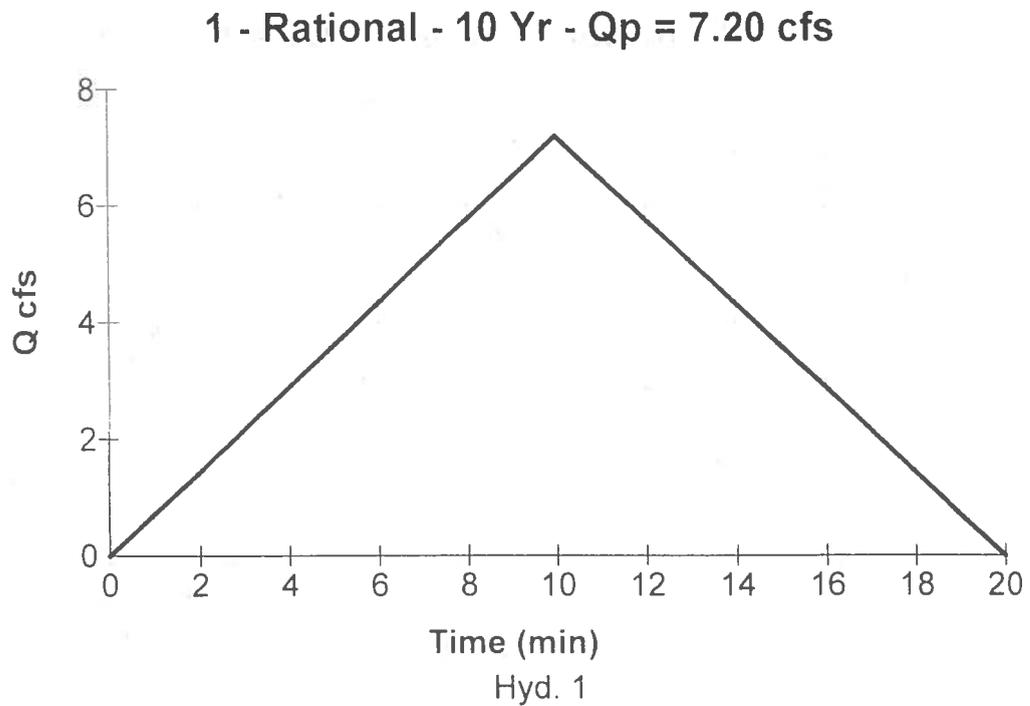
Hydraflow Hydrographs by Intelisolve

Hyd. No. 1

SILICA VALLEY RV/BOAT STORAGE PRE DEV.

Hydrograph type	= Rational	Peak discharge	= 7.20 cfs
Storm frequency	= 10 yrs	Time interval	= 1 min
Drainage area	= 3.3 ac	Runoff coeff.	= 0.36
Intensity	= 6.040 in/hr	Time of conc. (Tc)	= 10 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 4,318 cuft



# Hydrograph Plot

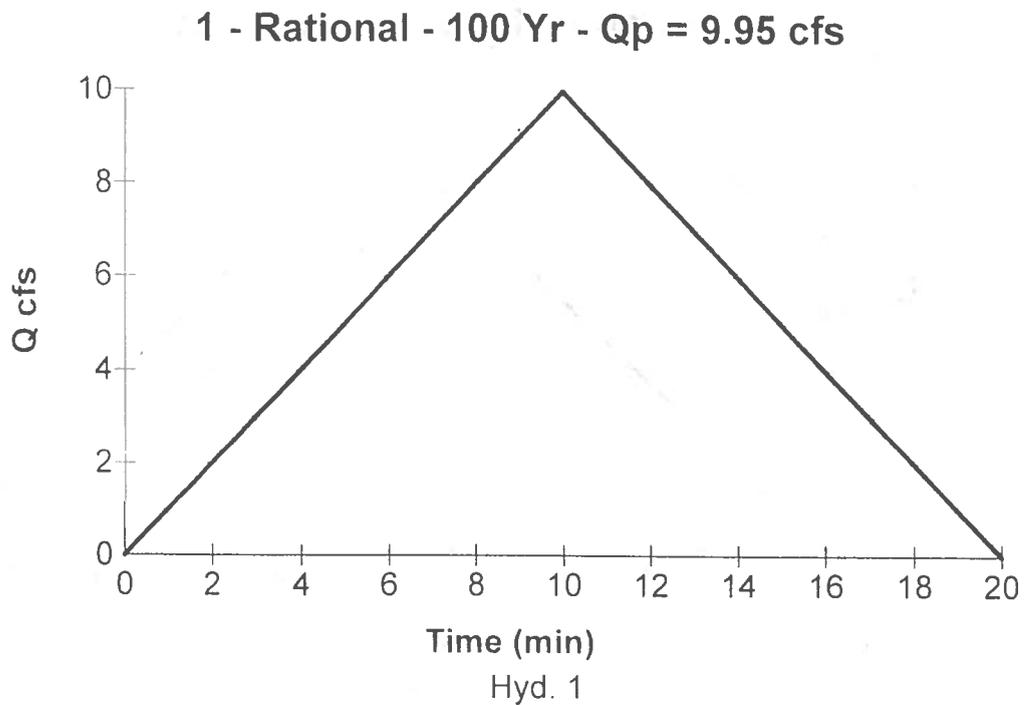
Hydraflow Hydrographs by Intelisolve

## Hyd. No. 1

SILICA VALLEY RV/BOAT STORAGE PRE DEV.

Hydrograph type	= Rational	Peak discharge	= 9.95 cfs
Storm frequency	= 100 yrs	Time interval	= 1 min
Drainage area	= 3.3 ac	Runoff coeff.	= 0.36
Intensity	= 8.350 in/hr	Time of conc. (Tc)	= 10 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

Hydrograph Volume = 5,970 cuft



# Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

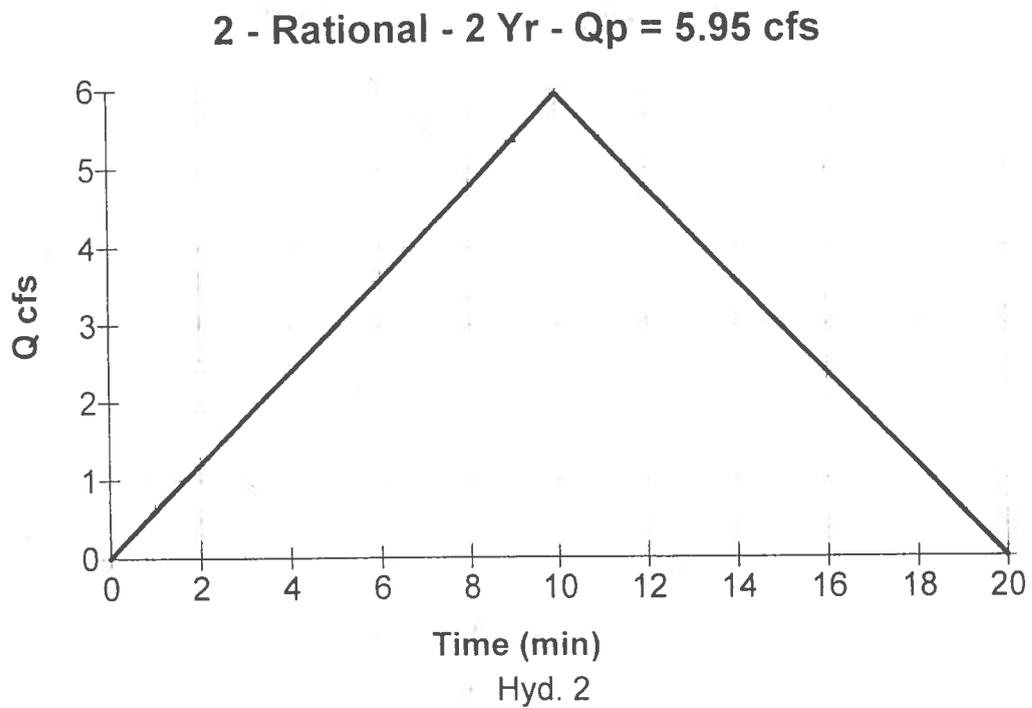
## Hyd. No. 2

POST DEV. RUNOFF W/ 2 NEW BLDGS.

Hydrograph type = Rational  
Storm frequency = 2 yrs  
Drainage area = 3.3 ac  
Intensity = 4.607 in/hr  
IDF Curve = SampleFHA.idf

Peak discharge = 5.95 cfs  
Time interval = 1 min  
Runoff coeff. = 0.39  
Time of conc. (Tc) = 10 min  
Asc/Rec limb fact = 1/1

Hydrograph Volume = 3.568 cuft



# Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

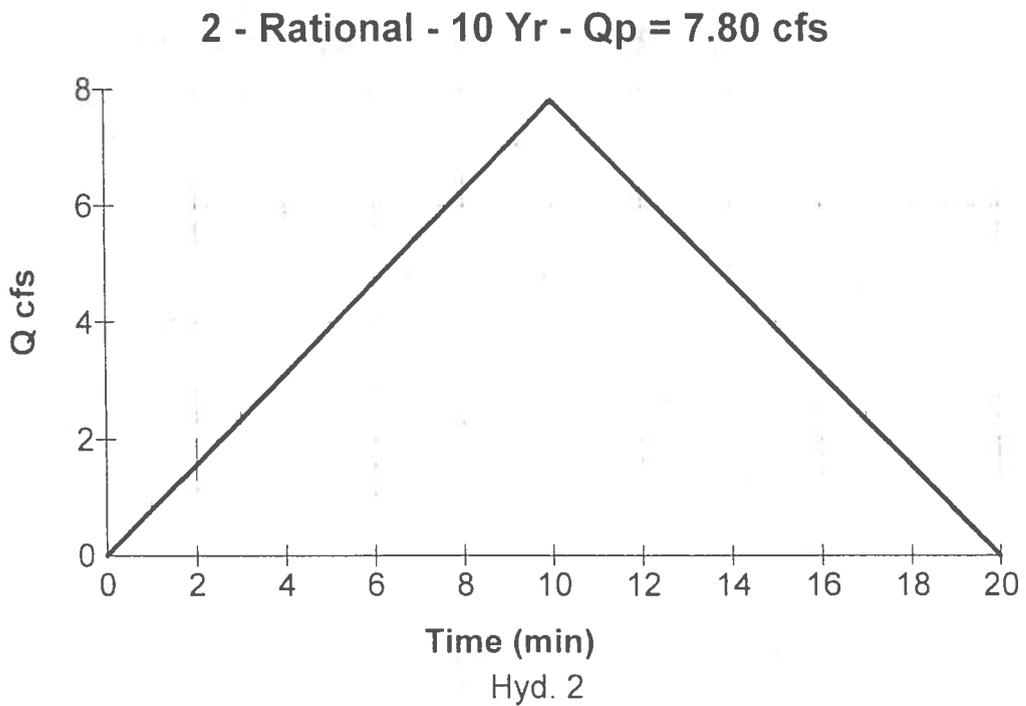
## Hyd. No. 2

POST DEV. RUNOFF W/ 2 NEW BLDGS.

Hydrograph type = Rational  
Storm frequency = 10 yrs  
Drainage area = 3.3 ac  
Intensity = 6.040 in/hr  
IDF Curve = SampleFHA.idf

Peak discharge = 7.80 cfs  
Time interval = 1 min  
Runoff coeff. = 0.39  
Time of conc. (Tc) = 10 min  
Asc/Rec limb fact = 1/1

Hydrograph Volume = 4,678 cuft



# Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

## Hyd. No. 2

POST DEV. RUNOFF W/ 2 NEW BLDGS.

Hydrograph type = Rational  
Storm frequency = 100 yrs  
Drainage area = 3.3 ac  
Intensity = 8.350 in/hr  
IDF Curve = SampleFHA.idf

Peak discharge = 10.78 cfs  
Time interval = 1 min  
Runoff coeff. = 0.39  
Time of conc. (Tc) = 10 min  
Asc/Rec limb fact = 1/1

Hydrograph Volume = 6,467 cuft

