“H”

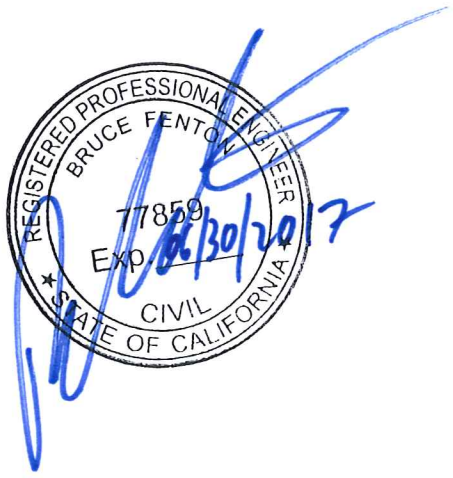
Wastewater Feasibility Study

Napa Vault P14-00296-MOD & P15-00298-TM
Planning Commission Hearing Date October 5, 2016

WASTEWATER FEASIBILITY REPORT

NAPA VAULT
SOSCOL FERRY ROAD
NAPA, CALIFORNIA

APN 057-170-018



PROPERTY OWNER:
Storage Tech, LLC
2783 Napa Valley Corporate Drive
Napa, CA 94558

Project# 4114028.0
September 9, 2015

1515 Fourth Street, Napa, CA 94559 www.rsacivil.com 707.252.3301.v 707.252.4966.f

WASTEWATER FEASIBILITY REPORT

NAPA VAULT

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INTRODUCTION

The Owner is proposing to construct a storage condominium facility on a 10.32 +/- acre parcel located at 1055 Soscol Ferry Road, Napa. The Assessor's Parcel Number is 057-170-018.

Most of the property is relatively level with a drainage channel located in the northwest corner of the parcel. A blue-line creek runs roughly east to west along the southern property line. Two wells exist on the site; one well is near the drainage channel in the northern part of the parcel. The other well is located in the northeast corner of the property near the existing driveway entrance. The northwest well will be deconstructed per Napa County Code. Appendix 1 contains a Site Location Map and a USGS Site Map showing the parcel topography, features and boundary. Appendix 2 contains a reduced version of the Use Permit plan set.

This report will evaluate the disposal of the facility's domestic wastewater.

EXISTING SEPTIC SYSTEM

Information from Napa County files for the parcel shows no existing septic system.

SITE EVALUATION

RSA+ conducted two site evaluations on the subject parcel on April 18, 2014 and May 23, 2014. Appendix 4 contains a map of test pit locations and test pit logs for the site evaluation.

The site evaluations were conducted by Brett Frasier of RSA+. The first site evaluation was observed by Maureen Shields Bown; the second site evaluation was observed by Veronica Bateson. Both inspectors were from Napa County Environmental Management.

A representative soil sample was collected during the site evaluation on May 23, 2014 and analyzed by RGH Consultants Inc. The soil samples underwent a soil texture analysis by Bouyoucos Hydrometer Method. The soil sample results are shown in Appendix 3. Site evaluation test pit logs are also shown in Appendix 3.

DOMESTIC WASTEWATER CHARACTERISTICS

The domestic wastewater system has been sized to accommodate the proposed flows shown below. Flows are based on annual water usage information for a similar facility provided by the client. The projected flow is based on an analysis of the supplied water usage per storage unit. The water usage incorporates the water used in the restrooms and clubhouse, and the water used to fill and dump RVs on site. The water used for landscaping around the facility has been neglected from our analysis. The following is a summary of the estimated flows for the proposed storage facility.

Sample Facility Wastewater Production: 18,000 gallons/year excluding landscaping

Facility Size Comparison: 71 units (sample facility)
131 units (proposed facility)

Sample Daily Wastewater Flow: Gallons per day = 18,000 gal/yr/ 365 days
= 49.3 gpd
Gallons per day per unit = 49.3 gpd /71 units
= 0.7 gpd/ unit

Proposed Wastewater Daily Flow: 0.7 gpd/unit x 2.0 (safety factor) = 1.4 gpd/unit
1.4 gpd/unit x 131 units = 183.4 gpd
= 200 gpd

DOMESTIC WASTEWATER - SUB SURFACE DRIP

For the domestic wastewater we propose installation of a new septic system and dispersal field for the proposed storage condominium project.

Domestic wastewater from the northern portion of the facility will gravity feed into a new HOOT H-600 tank. Domestic wastewater from the southern portion of the facility will flow into a separate 1200 gallon septic tank, and will be pumped to the HOOT H-600. After pretreatment in the HOOT H-600, wastewater will be pumped to the proposed distribution field.

The subsurface drip field is sized to meet Napa County Environmental Management guidelines. The distribution field will be placed in the area of the site evaluation where the most limiting usable soil type was clay. The allowable application rate for clay with moderate to strong structure is 0.3 gallons/square foot/day for pre-treated effluent. Peak daily domestic wastewater flow is 200 gallons/day.

$$Dispersal\ Field\ Area(primary) = \frac{200\,gpd}{0.3\,gpd/SF} = 667\,square\ feet$$

In addition to the primary dispersal area of 667 square feet, a 200% reserve area is required. The reserve area will be located adjacent to the primary field where the soil application rate is also 0.3 gallons/square foot/day.

$$Dispersal\ Field\ Area\ (reserve\ area) = \frac{200\ gpd}{0.3\ gpd / SF} = 667\ square\ feet$$

The total requirement for domestic wastewater reserve dispersal area is 1,334 square feet. Total area required for the primary and reserve is 2,001 square feet. The field will be placed in the area of test pits # 2 and 3 from Site Evaluation dated May 23, 2014 and test pit #1 from Site Evaluation dated April 18, 2014.

The system layout is shown on UP3 in Appendix 2.

STORMWATER DIVERSION

Operational areas including trash and recycling enclosures will be covered.

OPERATION AND MAINTENANCE

The domestic wastewater system will be fully automated and has been designed so minimal input from facility staff is required. Per Napa County guidelines, a Registered Civil Engineer, Registered Environmental Health Specialist, or Licensed Contractor will provide semi-annual monitoring and evaluation of the system. The contract with the responsible party will be provided prior to the final inspection for the system installed.

CONCLUSION

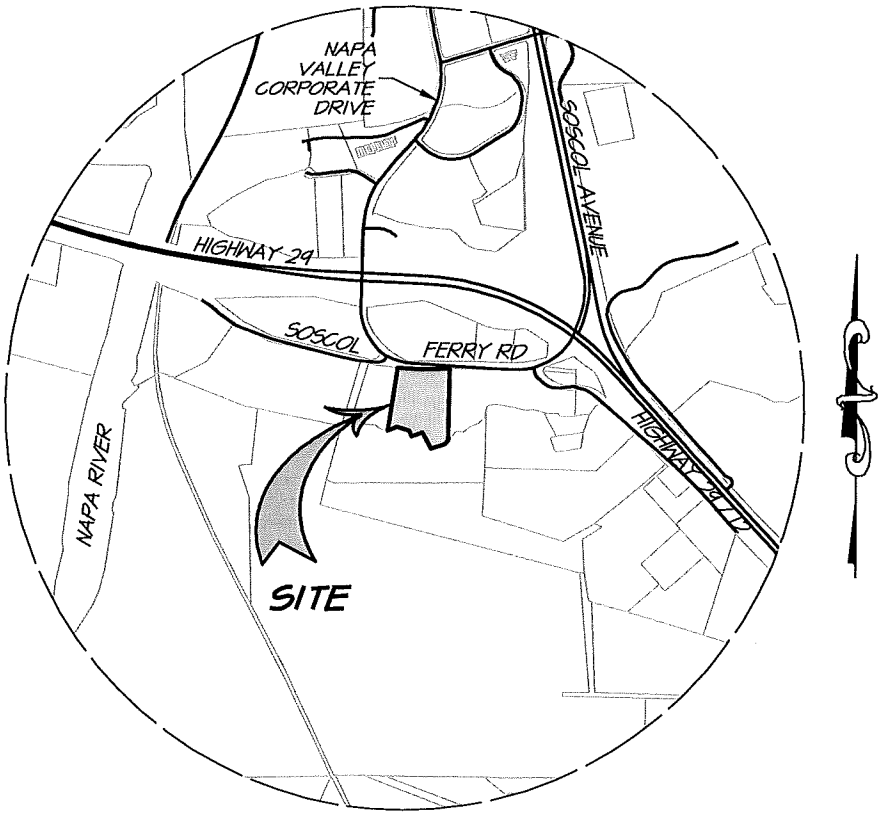
This report demonstrates that enough dispersion area is available making a sub-surface drip system a feasible option for treating the Acorn 6A storage facility's domestic wastewater.

The above methodology results in a design that meets the Napa County Environmental Management Design standards for the treatment of winery and domestic wastewater.

APPENDIX 1

Vicinity Map & USGS Site Map

ACORN 6A STORAGE
VICINITY MAP
NAPA CALIFORNIA



VICINITY MAP

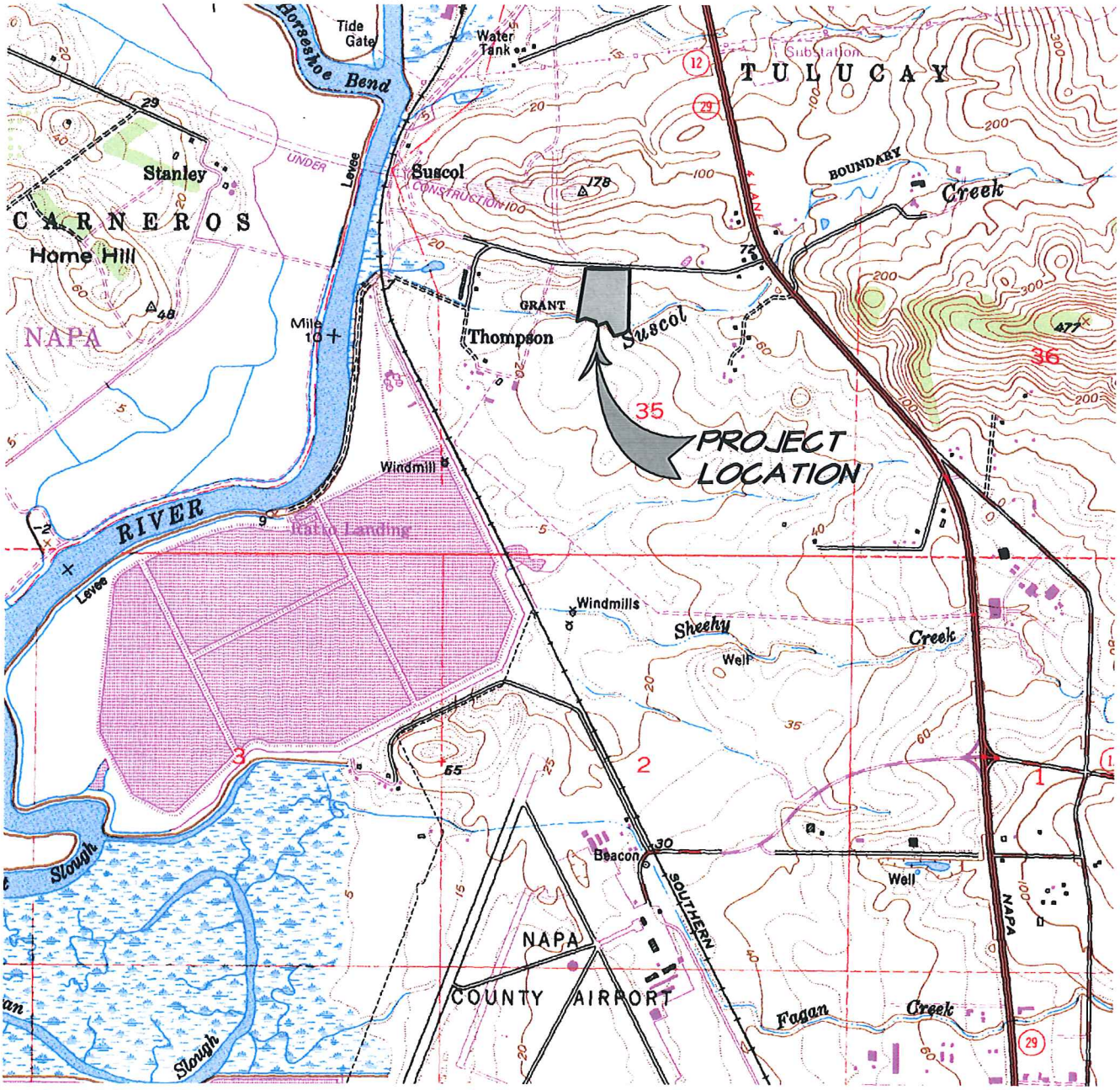
SCALE: 1" = 2000'

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

APRIL 22, 2014

4114425.0.07 Exh-Vic Map.dwg 1 OF 1

ACORN 6A STORAGE
USGS QUAD MAP
NAPA CALIFORNIA



SCALE: 1" = 2000'

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

APRIL 22, 2014

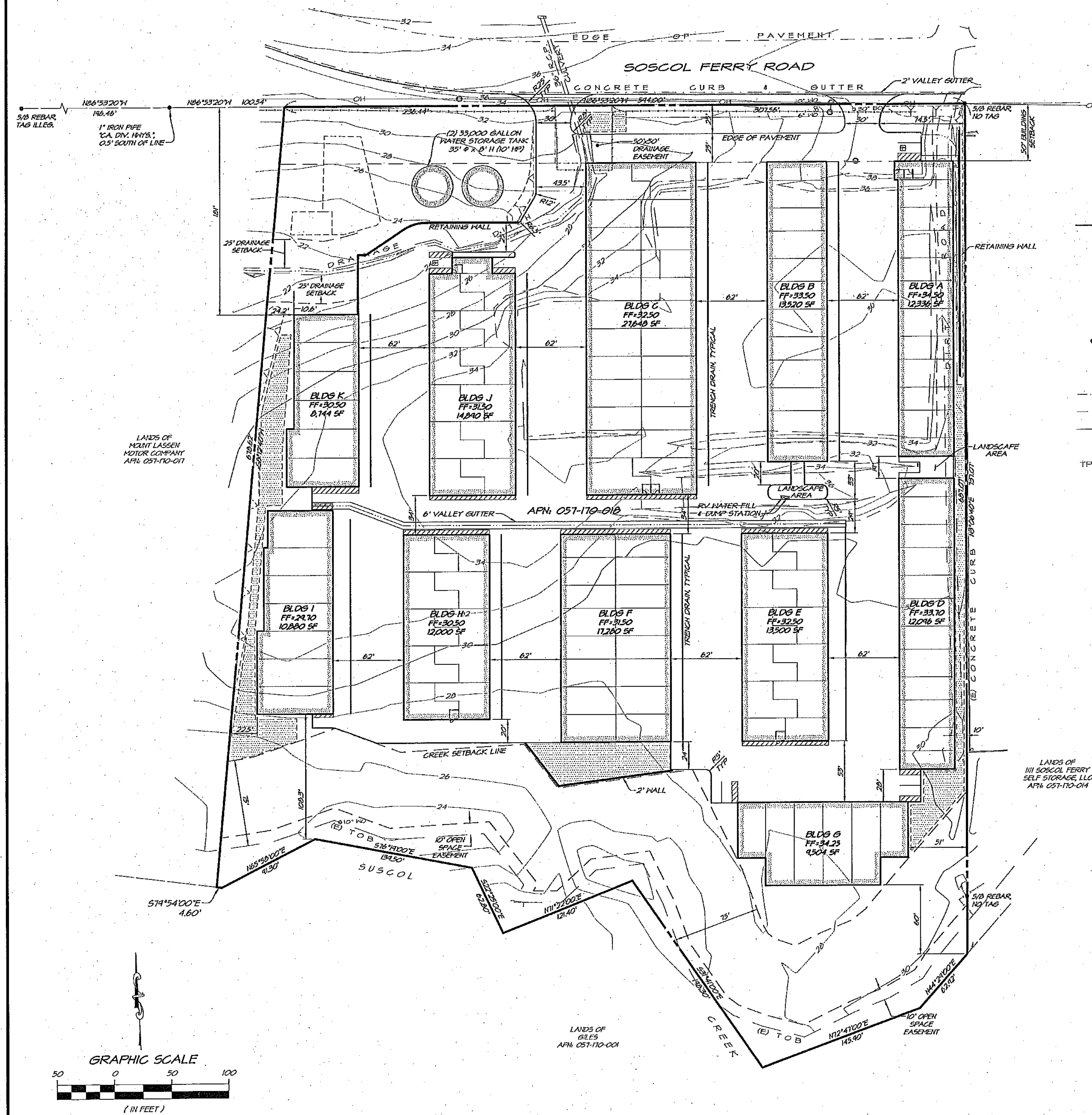
4114425.0.07 Exh-USGS.dwg 1 OF 1

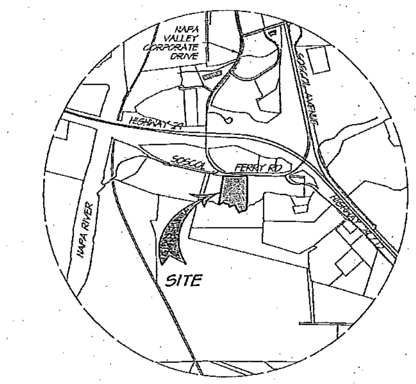
APPENDIX 2

Reduced Tentative Parcel Map Plan Set

NAPA VAULT

USE PERMIT MODIFICATION / TENTATIVE PARCEL MAP





VICINITY MAP
SCALE: 1" = 2000'

SYMBOL LEGEND

EXISTING

	LIGHT
	HOSE BIB
	GAS RISER
GV	GAS VALVE
TREE	TREE (AS NOTED)
SSCO	SEWER CLEANOUT
	SURVEY CONTROL STATION
ICV	IRRIGATION CONTROL VALVE
	FLOWLINE
	EDGE OF PAVEMENT
	FENCE
	WELL
TP#	TEST PIT LOCATION

PROPOSED

SD	STORM DRAIN
FSS	FORCED SANITARY SEWER
SS	GRAVITY SANITARY SEWER
2" DW	DOMESTIC WATER
8" FW	FIRE WATER
WELL	WELL WATER
SDMH	STORM DRAIN MANHOLE
	SLOPE AS SHOWN
FH	FIRE HYDRANT
GV	WATER GATE VALVE
CV	SS CHECK VALVE
DI	DRAIN INLET
SSCO	SANITARY SEWER CLEANOUT
TREE	EX TREE TO BE REMOVED
	SWALE FLOW LINE
	PROPERTY LINE
	BIORETENTION AREA
	VERTICAL CURB
	VALLEY GUTTER
	WALL, AS NOTED
	TRENCH DRAIN

ABBREVIATIONS

AD	AREA DRAIN
BM	BENCHMARK
℄	CENTERLINE
CONF	CONFORM
DI	DRAIN INLET
DW	DOMESTIC WATER
EP	EDGE OF PAVEMENT
EX / (E)	EXISTING
FD	FOUND
FDC	FIRE DEPT. CONNECTION
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FS	FINISH SURFACE
FSS	FORCED SANITARY SEWER
FW	FIRE WATER LINE
GB	GRADE BREAK
H	HIGH
HP	HIGH POINT
ILLEG	ILLEGIBLE
INV	INVERT
IP	IRON PIPE
LF	LINEAL FEET/FOOT
LP	LOW POINT
MH	MANHOLE
OC	ON CENTER
OH	OVERHEAD
PG&E	PACIFIC GAS AND ELECTRIC
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
(P)	PROPOSED NEW WORK
R	RADIUS
R.C.	RELATIVE COMPACTION
ROW	RIGHT OF WAY
RWL	RAIN WATER LEADER
S	SLOPE (FEET/FOOT)
S.A.D.	SEE ARCHITECTS DRAWINGS
SD	STORM DRAIN
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
S.S.D.	SEE STRUCTURAL DRAWINGS
STA	STATION
TC	TOP OF CURB
TW	TOP OF WALL

PROJECT INFORMATION

OWNER:	STORAGE TECH LLC
OWNER ADDRESS:	2183 NAPA VALLEY CORPORATE DR NAPA, CA 94558
CONTACT:	ERIK BEDFORD TEL: 707-226-1458, EXT. 209
SITE ADDRESS:	1055 SOSCOL FERRY ROAD NAPA, CA 94558
CIVIL ENGINEER:	RSA+ 1515 FOURTH STREET NAPA, CA 94559
CONTACT:	CHRISTOPHER TIBBITS TEL: 707-252-3301
APN:	057-170-018
PARCEL AREA:	10.32± ACRES
EXISTING USE:	VACANT
PROPOSED USE:	STORAGE FACILITY
ZONING:	GI:AC

NOTES

1. A TOPOGRAPHIC FIELD SURVEY WAS PERFORMED BY MICHAEL W. BROOKS & ASSOCIATES IN APRIL 2006, WITH REVISIONS IN MAY 2006, AND AUGUST 2007.
2. AN ADDITIONAL FIELD SURVEY WAS PERFOMED BY RIECHERS SPENCE & ASSOCIATES IN DECEMBER 2013.
3. BOUNDARY INFORMATION SHOWN PER 19 RECORD MAPS AT PAGES 39-41.
4. SUBJECT PROPERTY LIES WITHIN ZONE 'X' (AREA OF MINIMAL FLOODING) PER FIRM MAP 06055C 0610E DATED SEPTEMBER 26, 2008.
5. ALL EXISTING EASEMENTS ARE SHOWN.
6. THERE ARE NO VISIBLE SEPTIC TANKS ON SUBJECT PROPERTY.
7. THERE ARE NO EXISTING STRUCTURES ON SUBJECT PARCEL.
8. THERE IS NO OBSERVED EVIDENCE OF THE SITE BEING USED AS A SOLID WASTE DUMP OR SANITARY LANDFILL.

SHEET INDEX

NUMBER OF STORAGE UNITS	
STORAGE UNITS	129
COMMON AREAS	1
TOTAL NUMBER OF UNITS	130

NO.	DATE	REVISIONS	BY	APPD

RSA+ | CONSULTING CIVIL ENGINEERS + SURVEYORS + est. 1980
1515 FOURTH STREET
NAPA, CALIF. 94559
OFFICE|707|252.3301
+ www.RSAcivil.com +

NAPA VAULT
SITE LAYOUT & DIMENSION PLAN
NAPA COUNTY CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER M. TIBBITS No. 59761 Exp. 9-30-15 CIVIL ENGINEER STATE OF CALIFORNIA

DATE	SEPTEMBER 9, 2015
DRAWN	JFW
DESIGNED	DJS
CHECKED	BWF
JOB NO.	4114028.0
SHEET NO.	TM1 1 OF 3 SHEETS

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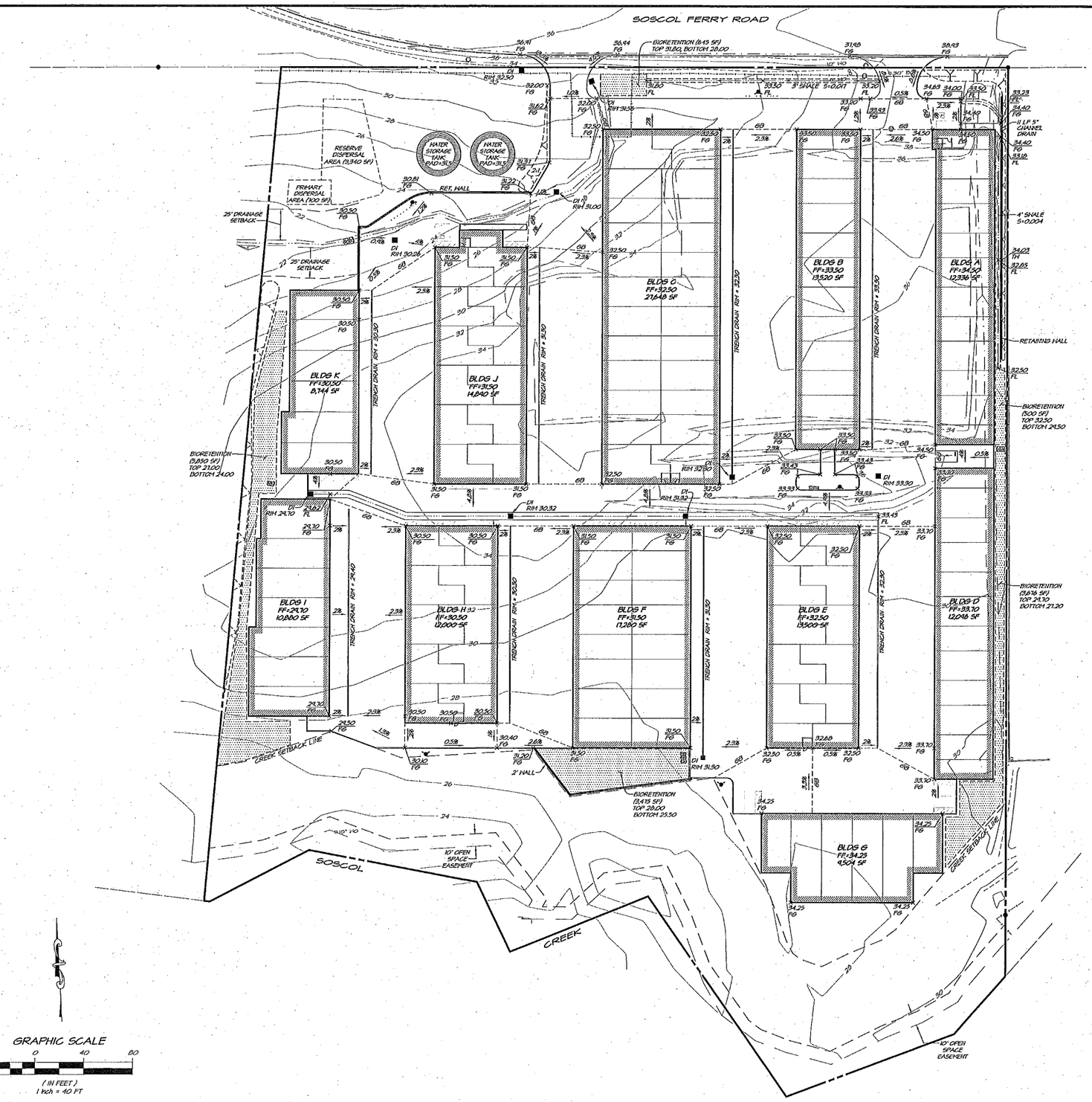
PRELIMINARY - NOT FOR CONSTRUCTION



GRAPHIC SCALE
10 0 40 80
(IN FEET)
1 inch = 40 FT

NO.	DATE	REVISIONS	BY	APPD

RSA+
1515 FOURTH STREET
NAPA, CALIF. 94559
OFFICE (707) 252-2301
+ WWW.RSACIVIL.COM +
RSA+ CONSULTING CIVIL ENGINEERS + SURVEYORS + 1980

NAPA VAULT
GRADING PLAN
NAPA COUNTY CALIFORNIA

DATE	SEPTEMBER 9, 2015	
DRAWN	JFH	
DESIGNED	DJS	
CHECKED	ERF	
JOB NO.	4114028.0	

SHEET NO.
TM2
2 OF 3 SHEETS

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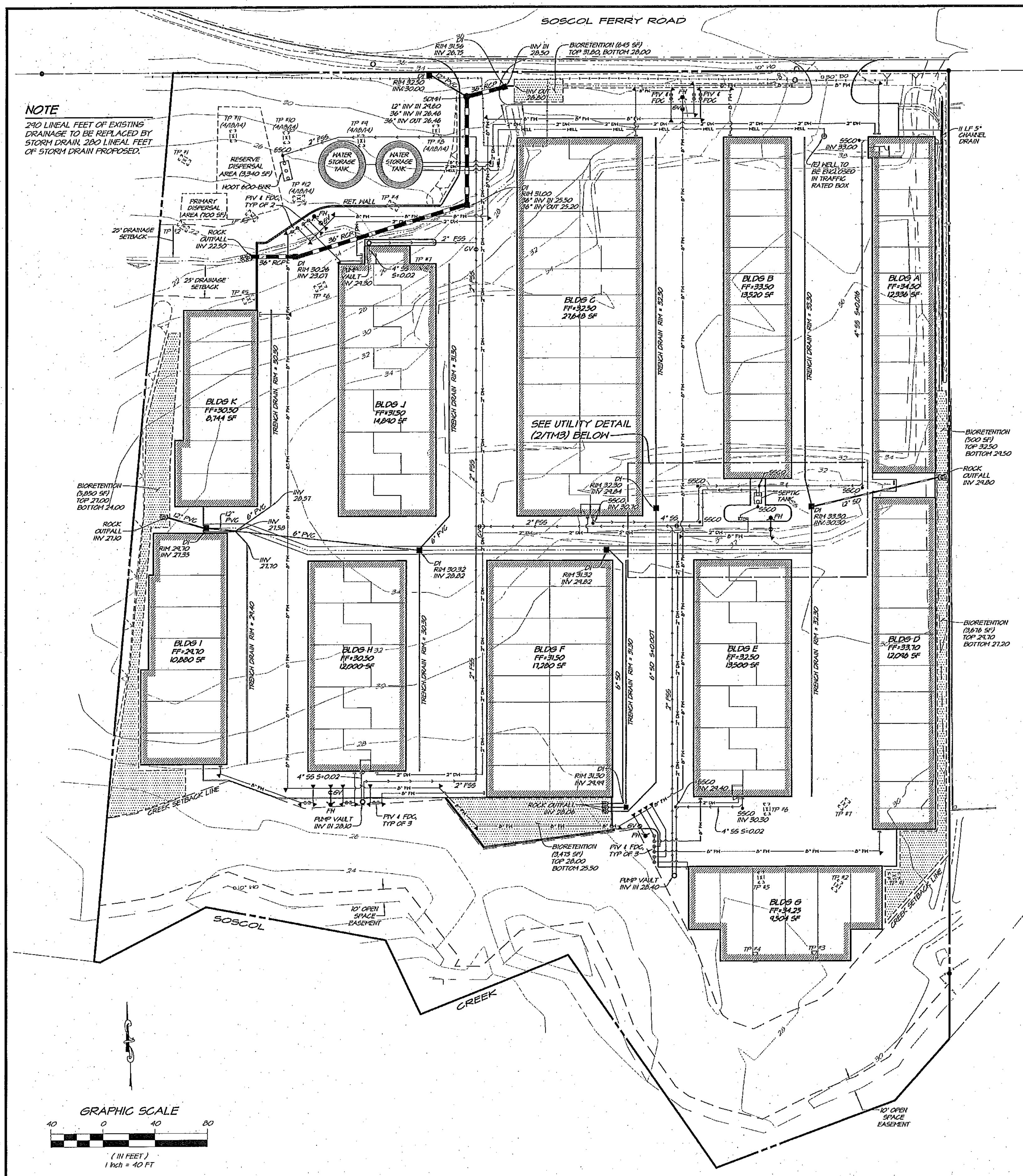
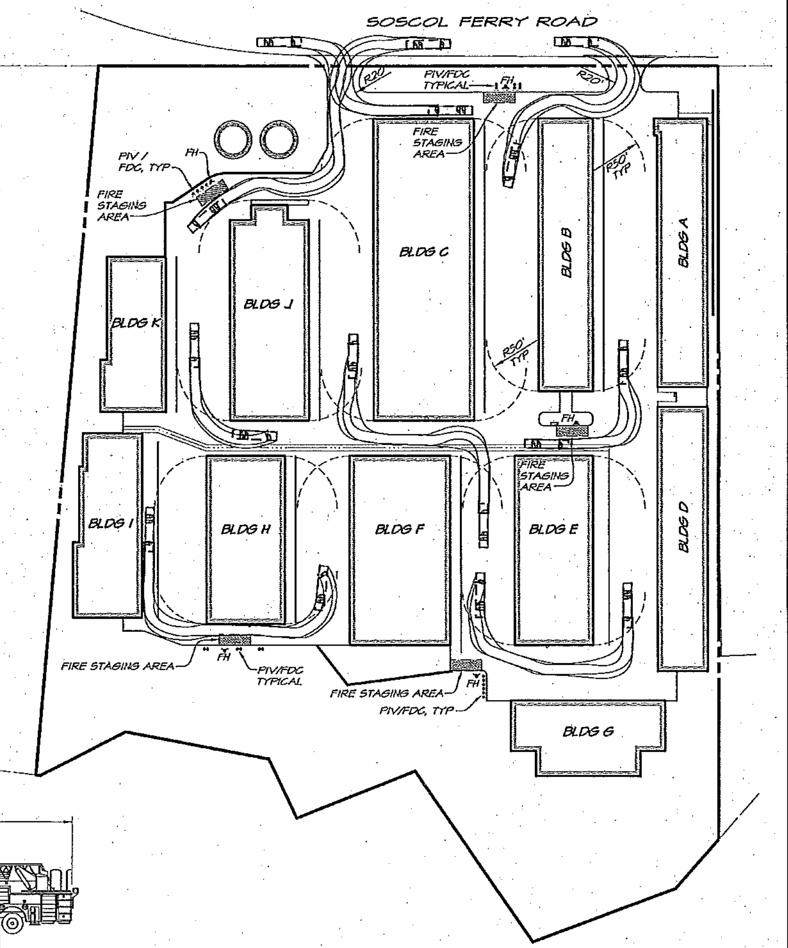
PRELIMINARY - NOT FOR CONSTRUCTION

NOTE

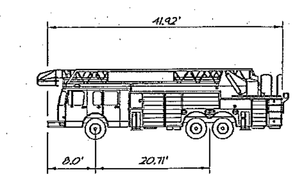
290 LINEAL FEET OF EXISTING DRAINAGE TO BE REPLACED BY STORM DRAIN, 280 LINEAL FEET OF STORM DRAIN PROPOSED.





① FIRETRUCK TURNING TEMPLATE

SCALE: 1" = 80'

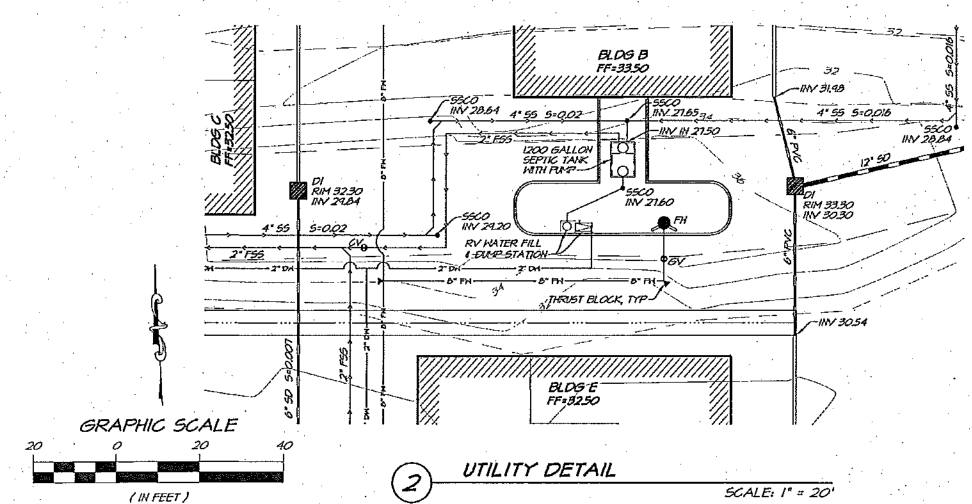


PIERCE 105' HEAVY DUTY FIRE TRUCK

DIMENSIONS	FEET
WIDTH	: 8.00
TRACK	: 8.00
LOCK TO LOCK TIME	: 6.00
STEERING ANGLE	: 45.00

NAPA COUNTY FIRE TRUCK DETAIL

NOT TO SCALE



② UTILITY DETAIL

SCALE: 1" = 20'

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PRELIMINARY - NOT FOR CONSTRUCTION

NO.	DATE	REVISIONS	BY	APP.

RSA+ 1515 FOURTH STREET NAPA, CALIF. 94559 OFFICE:(707)252-3301 www.RSAcivil.com

RSA+ CONSULTING CIVIL ENGINEERS + SURVEYORS + 1980

NAPA VAULT
UTILITY PLAN

NAPA COUNTY CALIFORNIA

DATE	SEPTEMBER 9, 2015
DRAWN	JFH
DESIGNED	DJS
CHECKED	BNF
JOB NO.	4114028.0

SHEET NO.

TM3

3 OF 3 SHEETS

APPENDIX 3

Site Evaluation

Permit Number: E14-00296

Date: April 18, 2014

APN 057-170-018
RSA Project Number: 4114028.0

Napa County Department of Environmental Management

SITE EVALUATION REPORT

Please attach an 8.5" x 11" plot map showing the locations of all test pits triangulated from permanent landmarks or known property corners. The map must be drawn to scale and include a North arrow, surrounding geographic and topographic features, direction and % slope, distance to drainages, water bodies, potential areas for flooding, unstable landforms, existing or proposed roads, structures, utilities, domestic water supplies, wells, ponds, existing wastewater treatment systems and facilities.

Permit #: E14-00296
APN: 057-170-018
(County Use Only) Reviewed by: Date:

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner Acorn 6A Soscol Ferry Road Real Estate, LLC	☒ New Construction ☐ Addition ☐ Remodel ☐ Relocation ☐ Other:
Property Owner Mailing Address 2783 Napa Valley Corporate Drive	☐ Residential - # of Bedrooms: Design Flow : gpd
City State Zip Napa CA 94558	☒ Commercial – Type: Sanitary Waste: 200 gpd Process Waste: gpd
Site Address/Location 1055 Soscol Ferry Road, Napa, CA 94558	☐ Other: Sanitary Waste: gpd Process Waste: gpd

Evaluation Conducted By:

Company Name Riechers Spence & Associates	Evaluator's Name Brett Frasier	Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist)
Mailing Address: 1515 4th Street		Telephone Number 707-252-3301
City State Zip Napa CA 94559		Date Evaluation Conducted April 18, 2014

Primary Area	**Expansion Area**
Acceptable Soil Depth: 24 In. Test pit #'s: 1-7, 11	Acceptable Soil Depth: 24 In. Test pit #'s: 1-7, 11
Soil Application Rate (gal. /sq. ft. /day): 0.3	Soil Application Rate (gal. /sq. ft. /day): 0.3
System Type(s) Recommended: Geo-flow sub-surface drip	System Type(s) Recommended: Geo-flow sub-surface drip
Slope: 1.8%. Distance to nearest water source: 109 ft.	Slope: 1.8%. Distance to nearest water source: 109 ft.
Hydrometer test performed? No ☒ Yes ☐ (attach results)	Hydrometer test performed? No ☒ Yes ☐ (attach results)
Bulk Density test performed? No ☒ Yes ☐ (attach results)	Bulk Density test performed? No ☒ Yes ☐ (attach results)
Percolation test performed? No ☒ Yes ☐ (attach results)	Percolation test performed? No ☒ Yes ☐ (attach results)
Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)	Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)

Site constraints/Recommendations:
Lower soil profiles had wet soil at varying depths.

Test Pit # 1

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-9"	C	<10%	SCL	M/SB	S	VFRB	S	M/F-M	M/F-M	N/A
	9"-36"	C	<10%	SCL	M/SB	SH	VFRB	S	C-M/M	F/F	N/A
	36"-38"	Bottom		SCL							

Notes:

Test Pit # 2

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-38"	C	<20%	SCL	M/SB	SH	VFRB	VS	M/F-M	C/F-M	N/A
	38-41"	Bottom	30%-45%	SL	W/G	S	L	SS	F/F	F/F	N/A

Notes:

Test Pit # 3

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-50"	Bottom	<10%	SCL	M/SB	S	VFRB	VS	C/F-M	F/F	N/A

Notes:

Test Pit # 4

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-38"	C	<10%	SCL	M/SB	SH	VFRB	S	M/F-M	F/F	N/A
	38"-52"	Bottom	<20%	SCL	M/G	SH	VFRB	S	M/F-M	F/F	N/A

Notes: Pockets of sand and gravel

Test Pit # 5

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-28"	G	<10%	SCL	M/SB	S	VFRB	S	C/F-M	F/F	N/A
	28"-37"	C	<40%	SCL	M/G	S	L	SS	C/F-M	F/F	N/A
	37"-51"	Bottom	<10%	SCL	M/SB						

Notes:

Test Pit # 6

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-50"	Bottom	<10%	SCL	M/SB	SH	VRB	SS	C/F-M	F/F	N/A

Notes:

Test Pit # 7

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-48"	Bottom	<10%	SCL	M/SB	S	VFRB	S	C/F-M	F/F	N/A

Notes:

Test Pit # 8

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-14"	C	30%-45%	SCL	M/SB	SH	VFRB	S	F/F-M	F/F	N/A
	14"-26"	Hardpan									

Notes:

Test Pit # 9

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-12"	C	<30%	SCL	M/SB	SH	FRB	S	C/F-M	M/F	N/A
	12"-22"	Hardpan									

Notes:

Test Pit # 10

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-16"	C	30%-45%	SCL	S/SB	SH	FRB	S	C/F	C/F	N/A
	16"-40"	Hardpan									

Notes:

Test Pit # 11

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-24"	C	<20%	SCL	M/SB	SH	FRB	S	M/F-M	C/F-M	N/A
	24"-25"	Bottom		C							

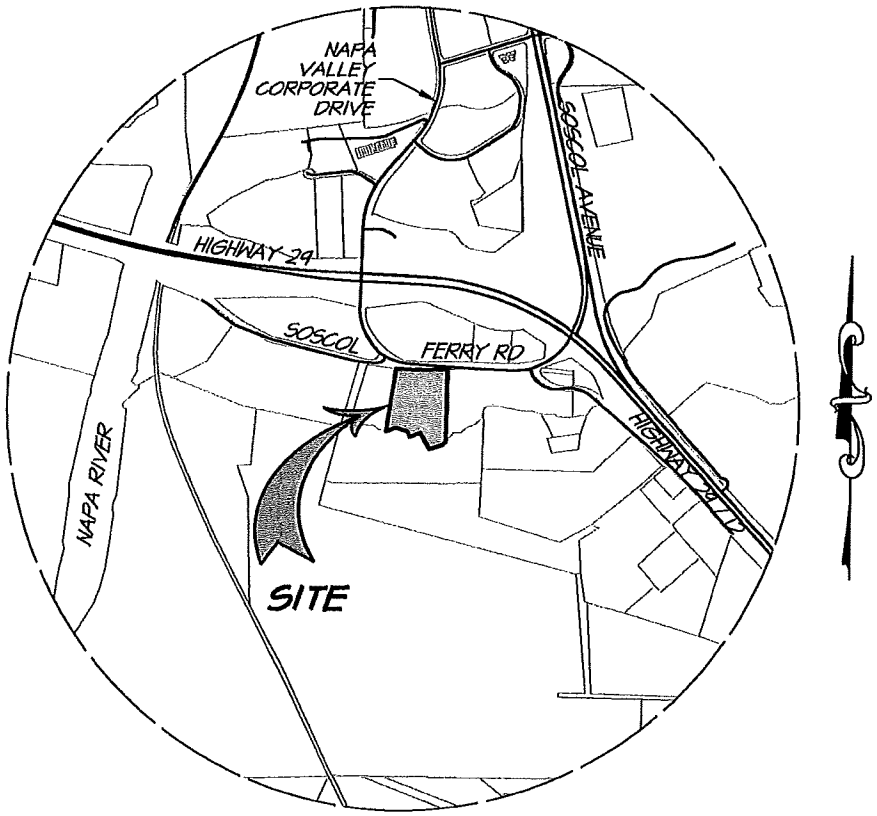
Notes: Pockets of rock

Test Pit # 12

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-20"	C	<10%	SCL	M/SB	SH	FRB	S	M/F-M	F/F	N/A
	20"-36"	Bottom	<10%	C	Massive						

Notes: Northern side of test pit had acceptable soil to 24"

ACORN 6A STORAGE
VICINITY MAP
NAPA CALIFORNIA



VICINITY MAP

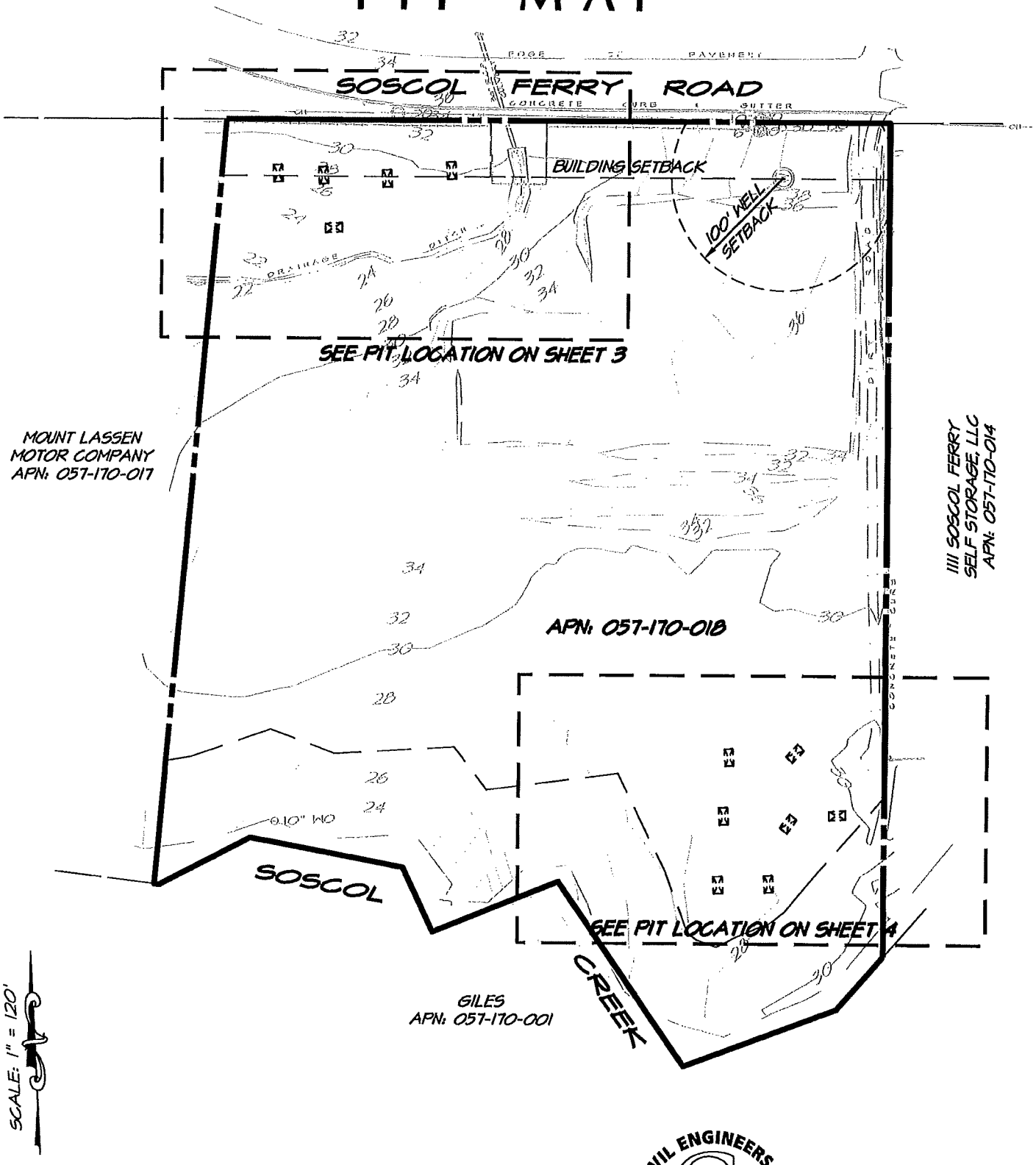
SCALE: 1" = 2000'

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

JUNE 18, 2014

41144028.0 Exh-Pltmap.dwg 1 OF 3

ACORN 6A STORAGE
PIT MAP

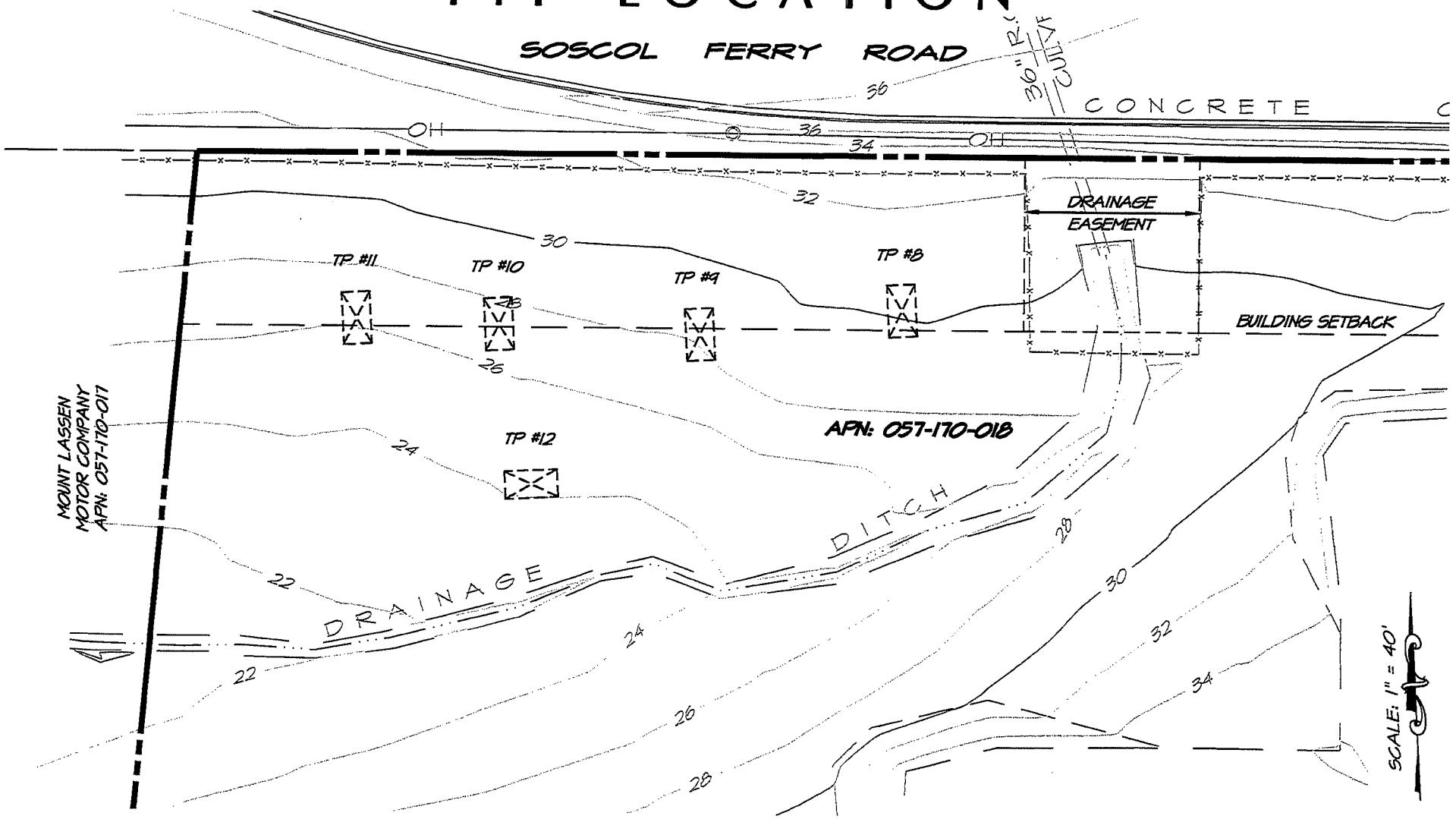


SITE EVALUATION DATE:	APRIL 18, 2014
APN:	057-170-018
ADDRESS:	1055 SOSCOL FERRY ROAD NAPA, CA 94558
ENV. HEALTH INSPECTOR:	MAUREEN SHIELDS BOWN

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

JUNE 18, 2014

ACORN 6A STORAGE
PIT LOCATION



SITE EVALUATION DATE:	APRIL 18, 2014
APN:	057-170-018
ADDRESS:	1055 SOSCOL FERRY ROAD NAPA, CA 94558
ENV. HEALTH INSPECTOR:	MAUREEN SHIELDS BOWN

LEGEND

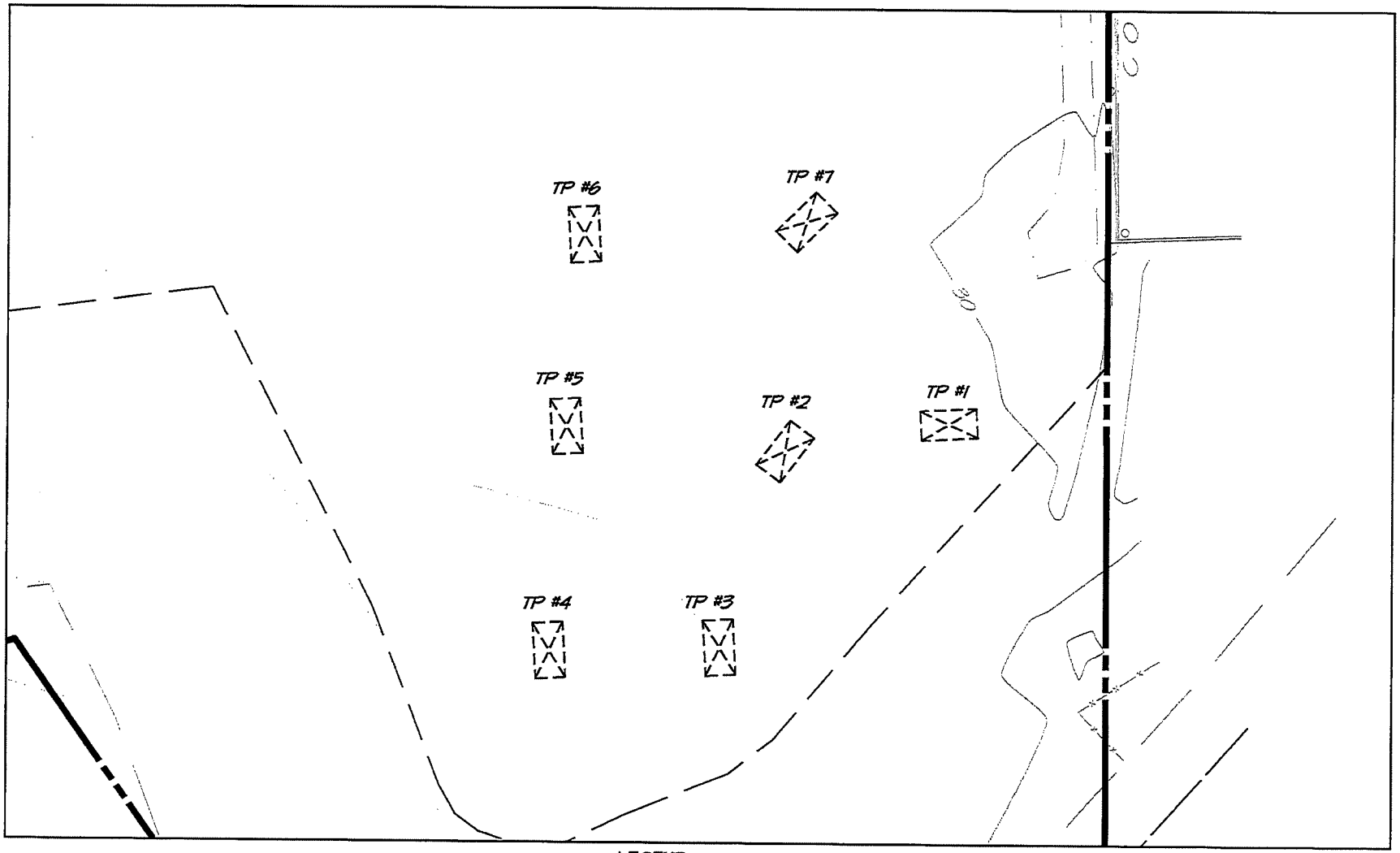
TP#1 — TEST PIT FROM 4/18/14

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

JUNE 18, 2014

4114028.0 Exh-Pitmap.dwg 3 OF 3

ACORN 6A STORAGE
PIT LOCATION 2
NAPA CALIFORNIA



SCALE: 1" = 40'

SITE EVALUATION DATE: APRIL 18, 2014
APN: 057-170-018
ADDRESS: 1055 SOSCOL FERRY ROAD
NAPA, CA 94558
ENV. HEALTH INSPECTOR: MAUREEN SHIELDS BOWN

LEGEND

⊠ TESTPIT FROM 4/18/14

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
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Permit Number: E14-00410
APN 057-170-018
RSA Project Number: 4114028.0

Napa County Department of Environmental Management

SITE EVALUATION REPORT

Please attach an 8.5" x 11" plot map showing the locations of all test pits triangulated from permanent landmarks or known property corners. The map must be drawn to scale and include a North arrow, surrounding geographic and topographic features, direction and % slope, distance to drainages, water bodies, potential areas for flooding, unstable landforms, existing or proposed roads, structures, utilities, domestic water supplies, wells, ponds, existing wastewater treatment systems and facilities.

Permit #: E14-00410
APN: 057-170-018
(County Use Only) Reviewed by: Date:

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner Acorn 6A Soscol Ferry Road Real Estate, LLC	☒ New Construction ☐ Addition ☐ Remodel ☐ Relocation ☐ Other:
Property Owner Mailing Address 2783 Napa Valley Corporate Drive	☐ Residential - # of Bedrooms: Design Flow : gpd
City State Zip Napa CA 94558	☒ Commercial – Type: Sanitary Waste: 200 gpd Process Waste: gpd
Site Address/Location 1055 Soscol Ferry Road, Napa, CA 94558	☐ Other: Sanitary Waste: gpd Process Waste: gpd

Evaluation Conducted By:

Company Name Riechers Spence & Associates	Evaluator's Name Brett Frasier	Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist)
Mailing Address: 1515 Fourth Street		Telephone Number 707-252-3301
City State Zip Napa CA 94559		Date Evaluation Conducted May 23, 2014

Primary Area	Expansion Area
Acceptable Soil Depth: 24 in. Test pit #'s: 2-7	Acceptable Soil Depth: 24 in. Test pit #'s: 2-7
Soil Application Rate (gal. /sq. ft. /day): 0.3	Soil Application Rate (gal. /sq. ft. /day): 0.3
System Type(s) Recommended: Sub-surface drip	System Type(s) Recommended: Sub-surface drip
Slope: 11% Distance to nearest water source: 350 ft.	Slope: 11% Distance to nearest water source: 350 ft.
Hydrometer test performed? No ☐ Yes ☒ (attach results)	Hydrometer test performed? No ☐ Yes ☒ (attach results)
Bulk Density test performed? No ☒ Yes ☐ (attach results)	Bulk Density test performed? No ☒ Yes ☐ (attach results)
Percolation test performed? No ☒ Yes ☐ (attach results)	Percolation test performed? No ☒ Yes ☐ (attach results)
Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)	Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)

Site constraints/Recommendations:

Test Pit # 1

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-6"	C	<20%	CL	M/G	L	FRB	S	C/F-M	M/F-M	N/A
	6"-18"	C	<10%	C	M-S/C	H	F	SS	C/F	F/F	N/A
X	18"-35"	Bottom		Rock							Yes

Notes:

Test Pit # 2

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-8"	C	<20%	CL	M/SB	S	FRB	S	M/F-M	F/F	N/A
	8-28"	A	<10%	C	M/SB	H	F	S	C/F-M	F/F	N/A
	28"-33"	Bottom		Rock							

Notes:

Test Pit # 3

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-21"	C	<30%	CL	M/SB	SH	FRB	S	M/F-M	F/F	N/A
	21"-36"	A	<15%	C	M/SB	H	VFR B	S	M/F-M	F/F	N/A
	36"-40"	Bottom	Rock								

Notes:

Test Pit # 4

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-22"	C	<25%	CL	M/SB	SH	FRB	SS	C/F-M	C/F	N/A
	22"-30"	C	<20%	C	M/PR	H	F	S	C/F-M	F/F	N/A
X	30"-48"	Bottom	Rock								

Notes:

Test Pit # 5

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-34"	C	<25%	CL	M/SB	S	FRB	S	M/F-M	F/F	N/A
X	34"-54"	C	<10%		W/P	SH	FRB	S	M/F	F/F	Yes
	54"-56"	Bottom	Rock								

Notes:

Test Pit # 6

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-36"	C	<10%	CL	M/SB	SH	FRB	S	M/F-M	F/F	N/A
X	36"-50"	Bottom									Yes

Notes:

Test Pit # 7

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-30"	C	<10%	CL	M/SB	SH	FRB	S	M/F-C	F/F	N/A
X	30"-41"	C									Yes
	41"-60"	Bottom	Rock								

Notes:

Test Pit #

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			

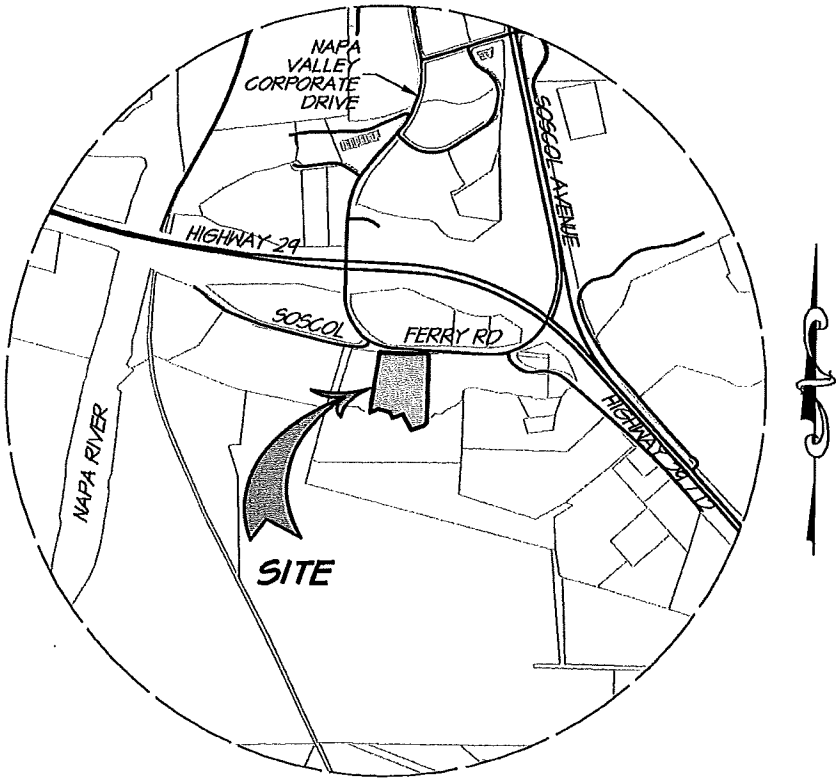
Notes:

Test Pit #

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			

Notes:

ACORN 6A STORAGE
VICINITY MAP
NAPA CALIFORNIA



VICINITY MAP

SCALE: 1" = 2000'

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
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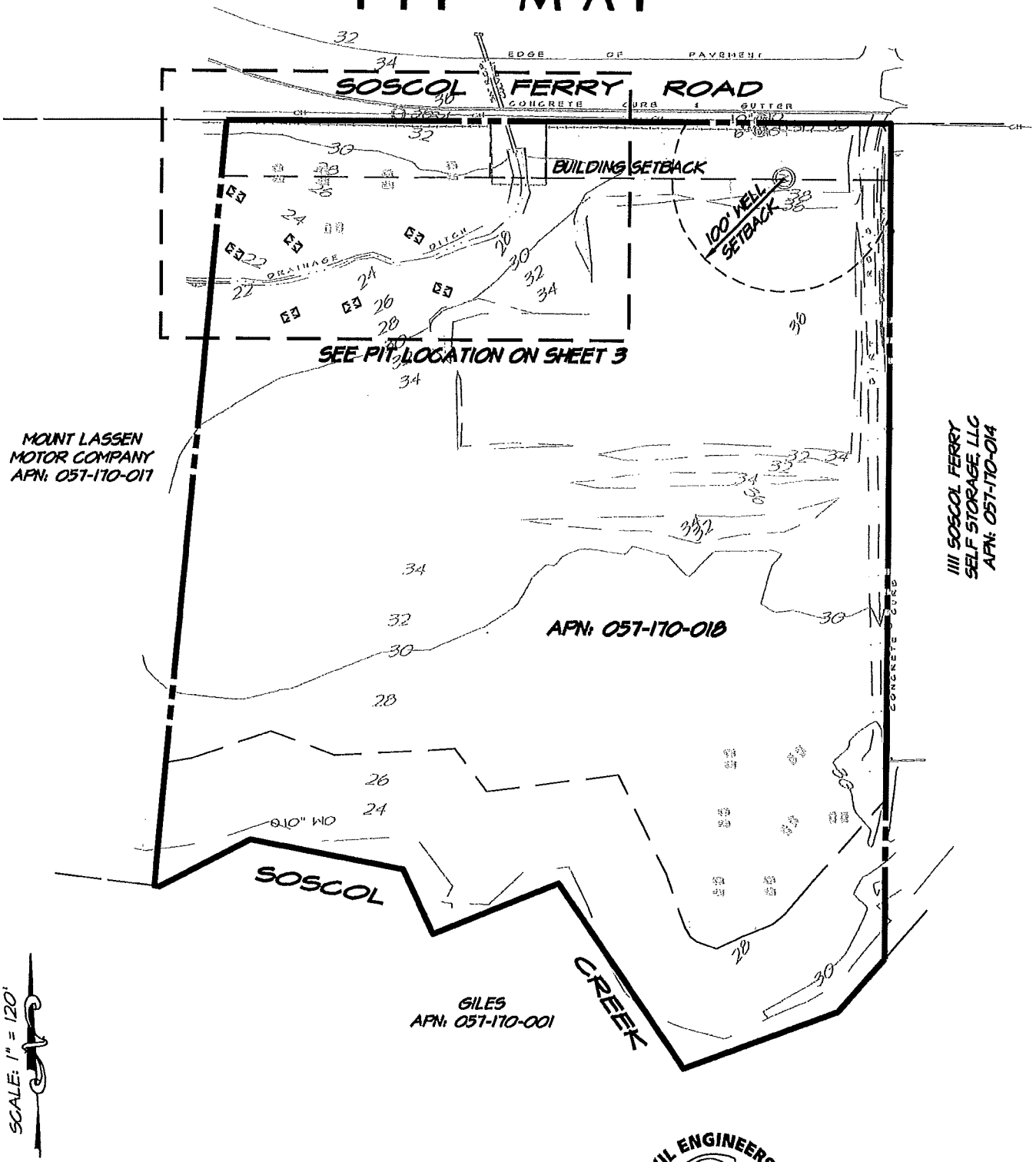
f 707.252.4966

JUNE 18, 2014

41144028.0 Exh-Pltmap.dwg 1 OF 3

ACORN 6A STORAGE
PIT MAP



SITE EVALUATION DATE:	MAY 23, 2014
APN:	057-170-018
ADDRESS:	1055 SOSCOL FERRY ROAD NAPA, CA 94558
ENV. HEALTH INSPECTOR:	VERONICA BATESON

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE ASSOCIATES
1515 Fourth Street
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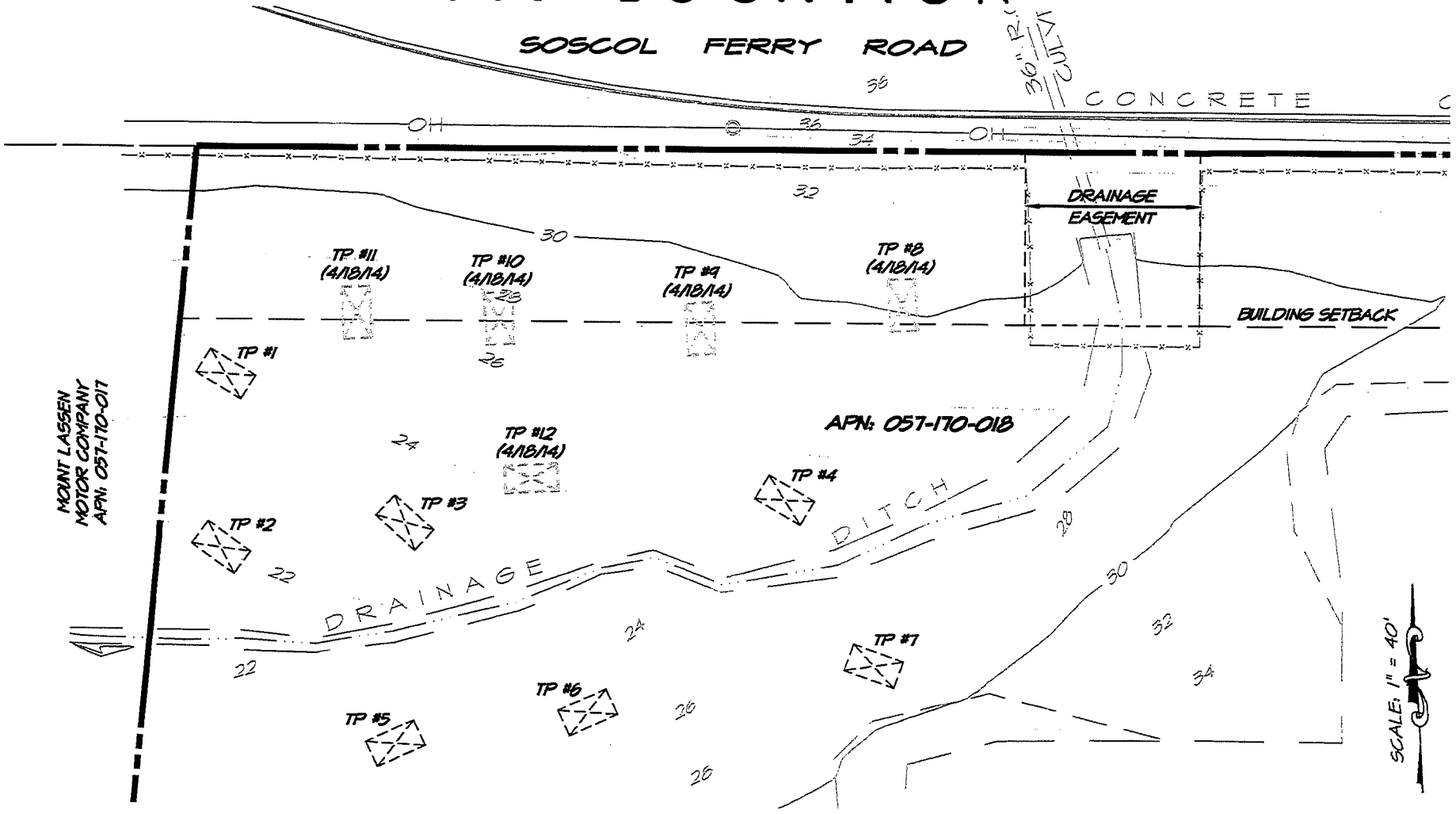
JUNE 18, 2014

4114028.0 Exh-Pitmap.dwg 2 OF 3

ACORN 6A STORAGE
PIT LOCATION



SITE EVALUATION DATE:	MAY 23, 2014
APN:	057-170-018
ADDRESS:	1055 SOSCOL FERRY ROAD NAPA, CA 94558
ENV. HEALTH INSPECTOR:	VERONICA BATESON

LEGEND

- TP#1 — TEST PIT FROM 5/23/14
- TP#1 (4/18/14) — TEST PIT FROM 4/18/14

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
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JUNE 18, 2014

4114028.0 Exh-Pitmap.dwg 3 OF 3

RGH CONSULTANTS

Experience is the difference

May 30, 2014
File: 9187.37

Riechers Spence Associates
1541 Third Street
Napa, CA 94559

Subject: **Laboratory Test Results**
Soil Texture Analysis by
Bouyocous Hydrometry Method
1055 Soscol Ferry Rd.
Project # 4114028.0

Dear Mr. Frasier:

This letter transmits the results of our laboratory testing performed for the subject project. We performed a Soil Texture Analysis by the Bouyocous Hydrometery Method with the following results:

Size/Density	TP-2 Sample 1 Upper Horizon
+ #10 Sieve	8.1 %
Sand	31.6 %
Clay	28.0 %
Silt	40.4 %
Db g/cc	--

We trust this provides the information required at this time. Should you have further questions, please call.

Yours very truly,

RGH GEOTECHNICAL

George Fotou
Laboratory Manager

RGH CONSULTANTS

Experience is the difference

May 30, 2014
File: 9187.37

Riechers Spence Associates
1541 Third Street
Napa, CA 94559

Subject: **Laboratory Test Results**
Soil Texture Analysis by
Bouyocous Hydrometry Method
1055 Soscol Ferry Rd.
Project # 4114028.0

Dear Mr. Frasier:

This letter transmits the results of our laboratory testing performed for the subject project. We performed a Soil Texture Analysis by the Bouyocous Hydrometery Method with the following results:

Size/Density	TP-2 Sample 2 Lower Horizon
+ #10 Sieve	1.0 %
Sand	19.6 %
Clay	55.2 %
Silt	25.2 %
Db g/cc	--

We trust this provides the information required at this time. Should you have further questions, please call.

Yours very truly,

RGH GEOTECHNICAL

George Fotou
Laboratory Manager