



April 17, 2014

Mr. Bill Schulz
SCHULZ INVESTMENTS
1627 Rankin Drive
Carson City, Nevada 89701

RE: Archery Range Parcel – APN 7-051-72
Preliminary Geologic and Geotechnical Review Report
for Tentative Map Submittal

Dear Mr. Schulz:

At your request, Resource Concepts, Inc. (RCI) is pleased to provide you with our Geologic and Geotechnical Review Report in support of the proposed tentative map submittal for your property referred to as the "Archery Range" (APN 7-051-72). The property is suitable for the proposed use as residential development with attention to proper site planning and implementation of mitigations for potential geologic and geotechnical constraints as described herein.

INTRODUCTION

The following report presents the results of Resource Concept, Inc. (RCI) preliminary geologic and geotechnical review for the Archery Range property, located on the south side of US Highway 50 in the area of Carson City, Nevada. The area of Carson City in which the property is located is locally referred to as Clear Creek as shown on the Vicinity Map, Figure 1.

PROJECT DESCRIPTION

The Archery Range parcel is approximately 32.72 acres in size and currently is zoned single-family 5-acre minimum. It is our understanding that the intention is to divide the property into six five-acre parcels as shown on the Site Plan, Figure 2. Future plans will include construction of single family residences. Other planned improvements will include underground utility infrastructure, local streets, driveways, concrete sidewalk, curb, gutter and landscaping.

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The purpose of RCI's review was to generally characterize the soil and geologic conditions, provide preliminary conclusions regarding any geologic hazards or adverse soil conditions; demonstrate the feasibility of individual sanitary septic installation and to provide general guidelines for road and structure earthwork.

Conclusions presented herein are based on the following:

- Observations of site conditions during excavation of seven test pits and related percolation tests,
- Tentative map drawings by Manhard Consulting, LTD.,
- Published soils data, geologic maps, fault maps and flood plain maps.

This report is intended to serve only in support of the tentative map process and should be used only for general feasibility master planning, cost estimates, and preliminary site design. It is not intended for construction or to take the place of a thorough site specific geotechnical design level investigation for each proposed structure, utilities and roadways. No environmental investigations or liquefaction studies have been requested or performed for the project.

To aid in preparing this report, we discussed the project with our client and reviewed the following documents:

- *Tentative Map for Schulz Investments, Carson City, Nevada*, Manhard Engineering, Ltd., dated January 2011 Sheets 1-4.
- *Web Soil Survey* <http://websoilsurvey.nrcs.usda.gov/app/>, Natural Resources Conservation Service accessed April 16, 2014
- *Geologic Map of the Genoa Quadrangle Douglas County, Nevada*, Nevada Bureau of Mines and Geology, 1979
- *Genoa Quadrangle Earthquake Hazards Map*, Nevada Bureau of Mines and Geology, 1979
- *FEMA Flood Insurance Rate Map (FIRM), Map No. 3200010205E*: January 16, 2009
- Nevada Department of Water Resources well log data base
- *USGS Fault and Fold Database*:
<http://earthquake.usgs.gov/hazards/qafaults/google.php>, Accessed April 16, 2014

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Our professional services have been performed in accordance with engineering principles and practices generally accepted in the profession for Northern Nevada at the time of preparation of this report.

SITE CONDITIONS

The project site is located in a moderately forested area and with adjacent single family homes on the south and west sides of the project. The site is bounded to the north and northeast by US Highway 50. Intermittent drainages cross the site at several locations. Two drainages on the easterly side of the site which emanate from culverts that cross under US Highway 50 have been rip-rapped through the site. An additional drainage traverses the site from west to east through the southwest portion of the property. The drainages reach Clear Creek approximately 1,000 feet south of the project site.

No utilities are known to be present on the site. Sewer is located in Clear Creek Road (Nevada State Route 705, the "Lincoln Highway"). Residences surrounding the site are served by power but rely on on-site wells for water and individual septic systems for sewage disposal.

Topography of the site consists of moderate to gentle slopes that generally are down to the south. Slopes vary from this along the drainages. The easterly drainage channels are incised such that the slopes face east and west for the most part.

The site is located at elevations that range from approximately 5,550 feet to approximately 5,380 feet above mean sea level. Based on FEMA Flood Insurance Rate Maps for the site vicinity, the site is designated as Zone D. Zone D is defined as areas where flood depths have not been determined but flooding is possible (Figure 3). It is our interpretation that based on topography that flooding is possible along the intermittent channels and the lowermost portion of the site but the potential extent has not been determined by RCI.

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Site Geology and Faulting

The site is located in the foothill area of the Sierra Nevada Mountains Geomorphic Province. Eagle and Carson valleys to the west are part of the Great Basin Geomorphic Province which is characterized by large fault-bounded valleys that are separated by mountain ranges. The Carson Valley is a sedimentary basin bounded by the Sierra Nevada to the west and the Pine Nut Mountains to the east. Geologic mapping of the site is published on the Nevada Bureau of Mines and Geology Geologic Map of the Genoa Quadrangle, Douglas County, Nevada, 1979. Based on the map, the site is located on an area of outcropping to shallow Hornblende-biotite granodiorite. Quaternary alluvium deposits are present especially along the intermittent stream channels. Colluvial deposits of sands derived from weathering of the granodiorite are present at the base of steeper slopes.

The site is located near active faults which are considered capable of producing significant ground motions due to seismic events. Based on the Genoa Quadrangle Earthquake Hazards Map, Nevada Bureau of Mines and Geology, 1979; and the US Geological Survey Fault and Fold web site, Holocene-aged (less than 12,000 years, locally less than several hundred years) range-front faulting has been mapped approximately two (2) miles west of the site. According to the Genoa Earthquake Hazards Map, faulting may be less than 300 years old. Based on the results of our site investigation and review of geologic maps and reports, the site is not located on any known active or potentially active fault traces. The Quaternary Fault Map of the site is presented as Figure 4.

Ground shaking intensities for design considerations should be governed by seismic events occurring on the Genoa Fault which follows the base of the Carson Range west of the site. Faulting along the Carson Range has been evaluated by the Nevada Bureau of Mines and Geology to be capable of producing earthquake Richter Magnitudes on the order of 7.0 with peak ground accelerations as high as 1.5g. These values are equivalent to Modified Mercalli Intensities of X or greater.

The seismic risk at the site is not considered significantly greater than that of the surrounding developments and the Carson City area in general. We recommend that

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seismic design of the structures be performed in accordance with the latest version of the International Residential Code (IRC) or International Building Code (IBC) as appropriate.

Soils and Groundwater

According to the Soil Survey of Carson City Area, Nevada, (US Department of Agriculture, 1984), the site soil is characterized by a single soil unit Toiyabe- rock outcrop complex consisting of thin silty sand (SM) soil layers typically less than one foot thick over shallow bedrock.

Based on our observations during test pit excavation activities at the site, although the site soils are described by NRCS as overlying shallow bedrock, our test pits identified weathered soil transitions (regolith) areas with deeper alluvial and colluvial soils on lower areas of the site. We specifically

Groundwater was encountered at depths between 2.7 and 7.0 feet below ground surface (bgs) in test pits excavated on March 13, 2007. Based on regional groundwater information and depth to water reported in wells within 1 mile of the site (Nevada Department of Water Resources), average depth to groundwater in the vicinity of the site is generally less than 15 feet bgs. Fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors.

PERCOLATION TESTING

Percolation testing was performed at seven (7) locations at the site on April 9-10, 2014. The tests were located to generally characterize the entire site and each of the proposed five-acre parcels (Figure 2). Test locations were determined both on the lot locations but also on the most logical flat lying topographic areas of the site. Percolation tests were conducted in substantial accordance with Nevada Administrative Code requirements (NAC 444.796.1 and 444.796.2 inclusive). The tests were performed from eighteen inches to 30 inches below the existing grade. Test pits were excavated by the use of a rubber-tire backhoe with a 18-inch wide bucket. The soil conditions encountered in test pits were visually examined, classified, and logged in general accordance with the Unified Soil

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Classification System. Shallow bedrock conditions at the site limited the depth of a few tests to within 18-inches of the ground surface.

Percolation rates reported for the site ranged from approximately 90 seconds per inch to 13.7 minutes per inch. Percolation test pit logs and associated percolation test results are presented in Appendix A. Photographs with co-ordinates of the test pit locations and data are presented in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS

The intention of the following recommendations is to provide general specifications for clearing, grubbing and mass grading of the site. It is not intended to be used in lieu of a site specific geotechnical report for specific structures. A final geotechnical report should be prepared for each proposed structure addressing allowable bearing capacity, estimated settlement under design loads, foundation grading criteria, slope design, erosion control criteria and other site specific or specialized geotechnical information as needed.

It is anticipated that the majority of grading activities will require only conventional equipment capable of operating on moderate slopes and excavation of loose to medium dense soils and in some cases dense granodiorite bedrock. The need for blasting for deeper slope excavations or structure foundations should be planned for.

Anticipated Construction Difficulties

Three geotechnical constraints have been identified on the site that may impact the construction process. The three constraints are shallow bedrock, highly permeable soils and moderate to steep slopes. However, these constraints should not prohibit or limit development on the site when properly mitigated and planned for. Specific mitigations and material handling recommendations should be provided in the design level geotechnical report.

Large rubber tire or tracked vehicles will be necessary during stripping and initial grading on steeper slopes or where cuts encounter bedrock. Utility installations will also require

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additional effort in areas of shallow bedrock. During wet seasons and especially during spring runoff periods, some portions of the site are likely to have near surface saturation or perched water over the bedrock. Pot holing of the site is recommended to determine if wet trench conditions are present and therefore mitigations are necessary.

Road section design will likely result in minimum pavement sections due to the typically strong soils associated with granitic near source derived material.

The use of septic systems is limited to flatter areas of the site. Based on percolation rates, engineered systems may be required on some areas of the site. It is extremely important that Septic areas are identified prior to any well drilling to ensure wells do not conflict with the most appropriate septic field locations. The locations of adjacent wells and septic systems should also be identified to enhance the planning of on-site facility locations.

General Grading

Vegetation, stockpiled soil, undocumented fills and all debris should be removed from construction areas prior to commencement of general site mass grading. The depth of clearing and grubbing is estimated to be three to six inches across the site. Where significant root structure is encountered especially around large pine trees, the depth should be extended as necessary. Removed vegetation should be disposed of offsite or mulched and utilized on-site in landscape areas only. It should be noted that in any areas of soil stockpiles, undocumented fill (if any) it is recommended that the grading be monitored by the engineer to ensure the complete removal of the offensive materials.

Trench support methods where soils are comprised of Silty Sand (SM), Poorly Graded Sand (SP) should be consistent with OSHA Type C soils. Where weathered bedrock is encountered as determined by a competent person in trench safety Type B soils may apply.

In areas of the site to receive fill or in areas that will proceed directly on native granular soils, the native soils should be scarified at least 8 inches, moisture conditioned to near optimum moisture and compacted to a minimum of 90% of maximum dry density (MDD) with all references to ASTM D1557.

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Structural fill is defined herein as all fill used beneath or within five feet of buildings or directly beneath roads. Where structure foundations are to rest on structural fills, the structural fill should extend a minimum of one footing width each side of the footing.

Pumping or yielding may occur during periods of high precipitation or if excessive runoff or where construction water is allowed to permeate the native soils. The offensive soils must be allowed to dry or be removed and replaced to a depth as determined in the design level geotechnical investigation.

All fill used on the project should be clean granular material, free of organic materials, trash or other objectionable material. It is anticipated that the vast majority of fill will need to be imported to the site. Areas to receive fill should be scarified at least eight inches and compacted as appropriate for the type of soil. Clayey soils (SC, CL, CH) should be compacted to 85% of MDD at within 2% optimum moisture. Granular soils (SM, SW, SP) should be compacted to 90% of MDD. Fill should be placed on compacted subgrade soils or on stabilized cobble rock fill (if necessary). All fill should be placed in lifts not exceeding 8-inches in loose thickness and be compacted to a minimum of 90% of MDD.

Structural fill should meet the following specifications:

STRUCTURAL FILL

Sieve Size	Percent Passing
4 inch	100
¾ inch	70-100
No. 40	15-70
No. 200	5-25

Structural fill should have a liquid limit of no more than 40 and a plasticity index of no more than 12 when tested by ASTM D 4318. Structural fill used beneath concrete slabs should be 100% passing the 1" Sieve.

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ADDITIONAL GEOTECHNICAL CONSIDERATIONS

A thorough geotechnical investigation will need to be conducted to support finish grading, final design of pavement sections and to provide building foundation parameters for each proposed parcel. The final report should specifically address:

1. Soil strength for pavement section design. Either R-value or California Bearing Ratio testing of each significant soil type.
2. Weak or saturated soil stabilization alternatives.
3. Erosion control and slope stability recommendations as appropriate.
4. Seismic design parameters for buildings and related structures.
5. Earth pressure for retaining structures (if any) and footing design.
6. Slab-on-grade recommendations.

LIMITATIONS

The information contained in this report is based on standards of investigation and design guidelines generally accepted in the Northern Nevada area at the time of this report, and on our understanding of the project scope as outlined herein.

This preliminary report is issued with the understanding that it is the responsibility of the owner, or a designated representative, to ensure that the information and recommendations contained herein are distributed to the design team. This report is intended to support project planning and cost estimating and not to take the place of thorough design level geotechnical investigation. No guarantee as to the continuity of soils or other geologic conditions across the site is implied or intended. No environmental work has been performed in the preparation of this report and is excluded from our scope of services.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated

Mr. Bill Schulz
SCHULZ INVESTMENTS
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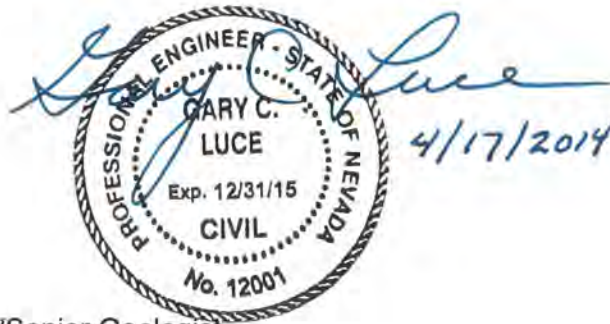
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wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of one year.

Please contact us should you have any questions regarding this report, or if we may be of further service.

Sincerely,

RESOURCE CONCEPTS, INC.

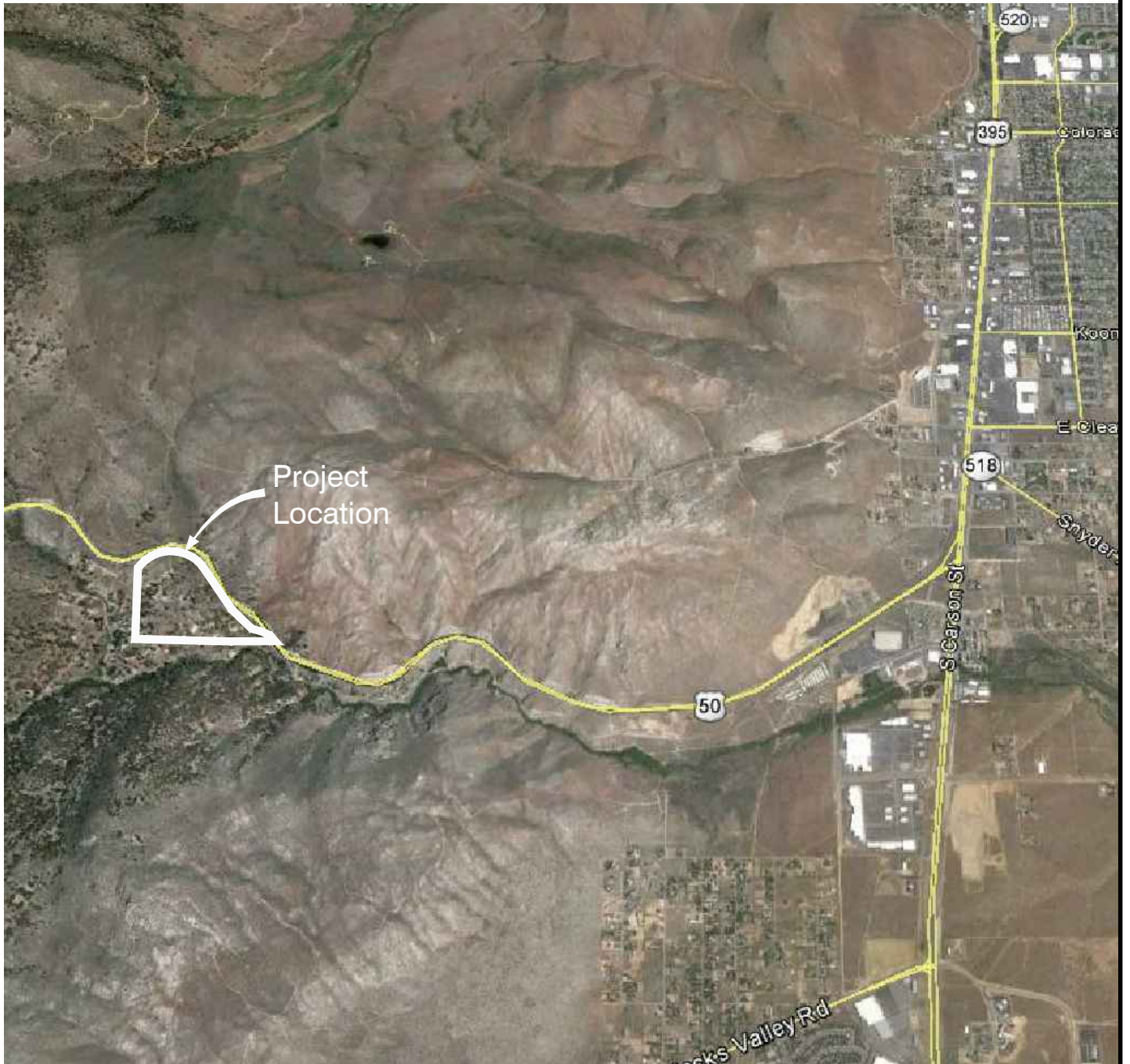


Gary Luce, PE
Senior Geotechnical Engineer/Senior Geologist

GL:jm
(3) Addressee

Attachments: Figures 1-5
Appendix A - Percolation Test Results and Logs.
Appendix B - Site Photos

Figures



0 1000 2000
SCALE: 1"=3000'

Figure 1
Vicinity Map

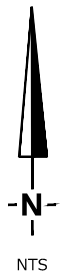
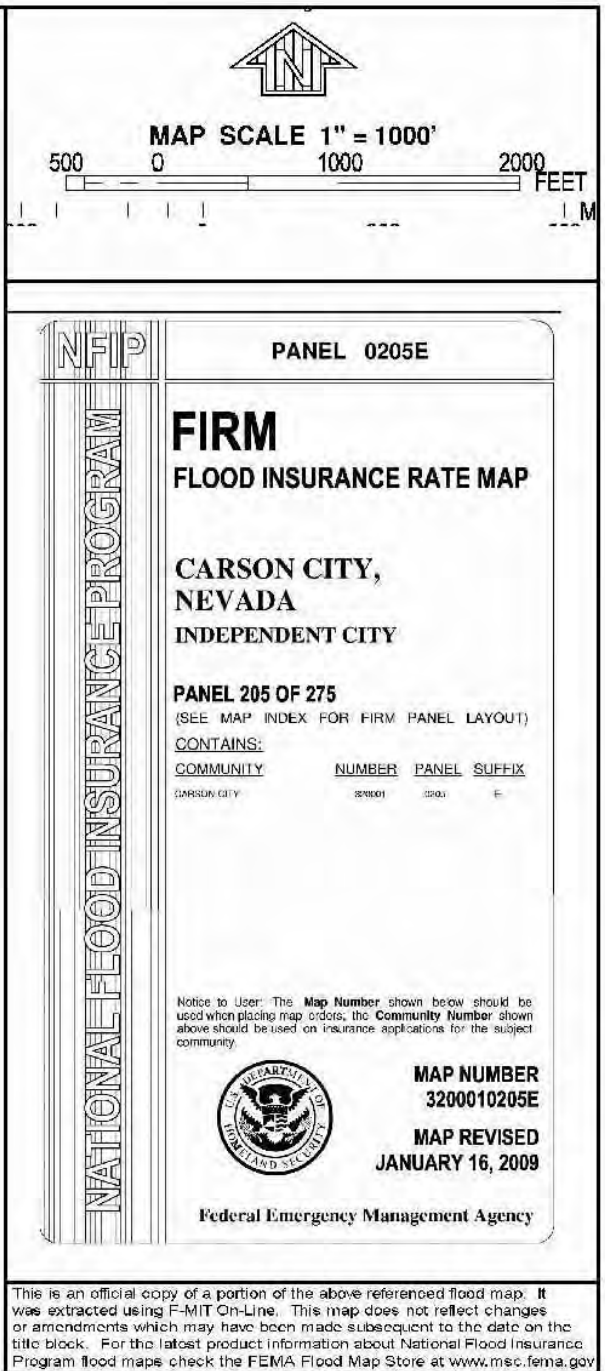
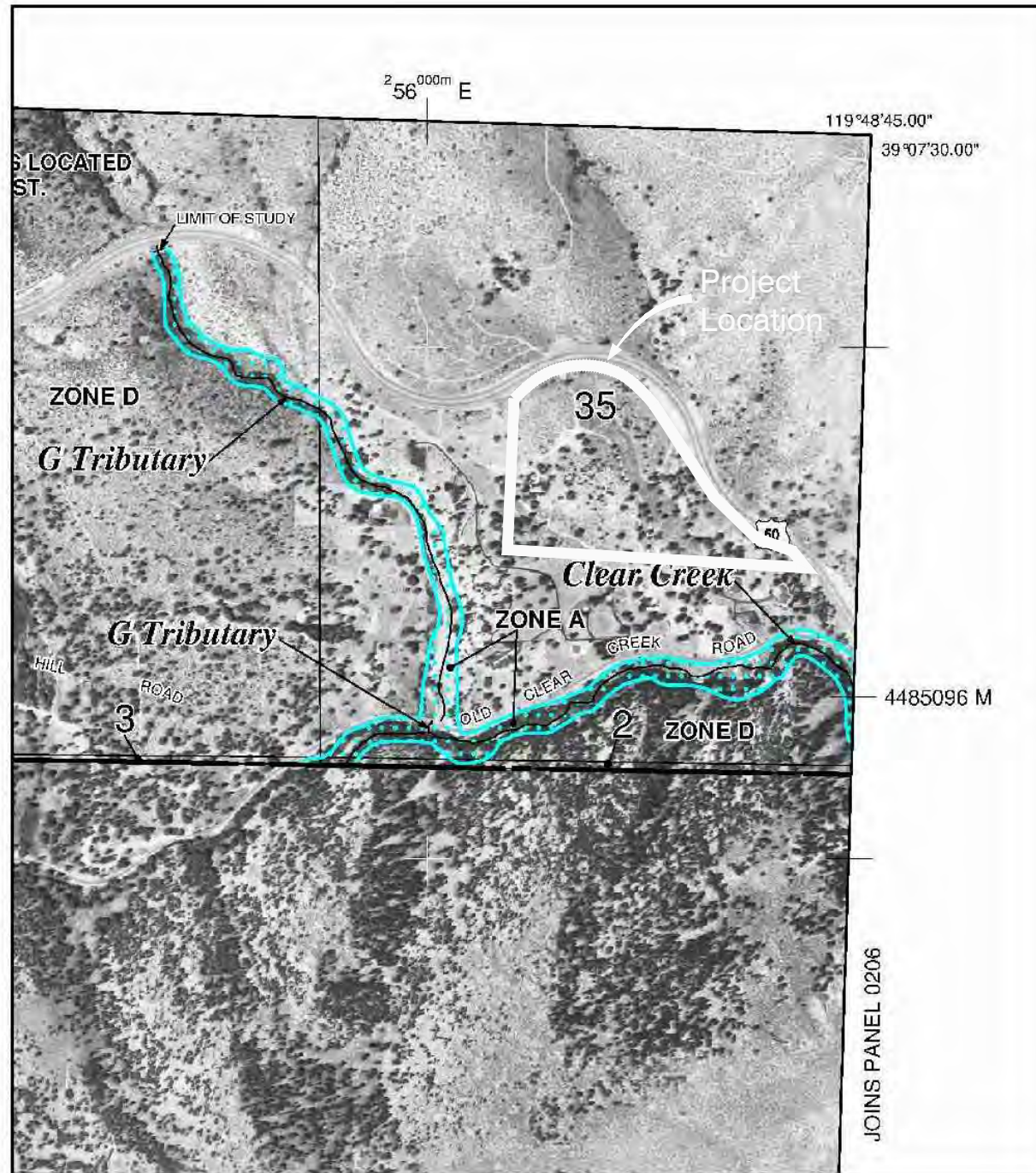


Figure 2
Site Plan



- ### LEGEND
- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
- The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
 - ZONE AE** Base Flood Elevations determined.
 - ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
 - ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
 - ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
 - ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
 - ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
 - ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS
 - ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
 - OTHER AREAS
 - ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
 - ZONE D** Areas in which flood hazards are undetermined, but possible.
 - COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

Figure 3
Flood Insurance
Rate Map

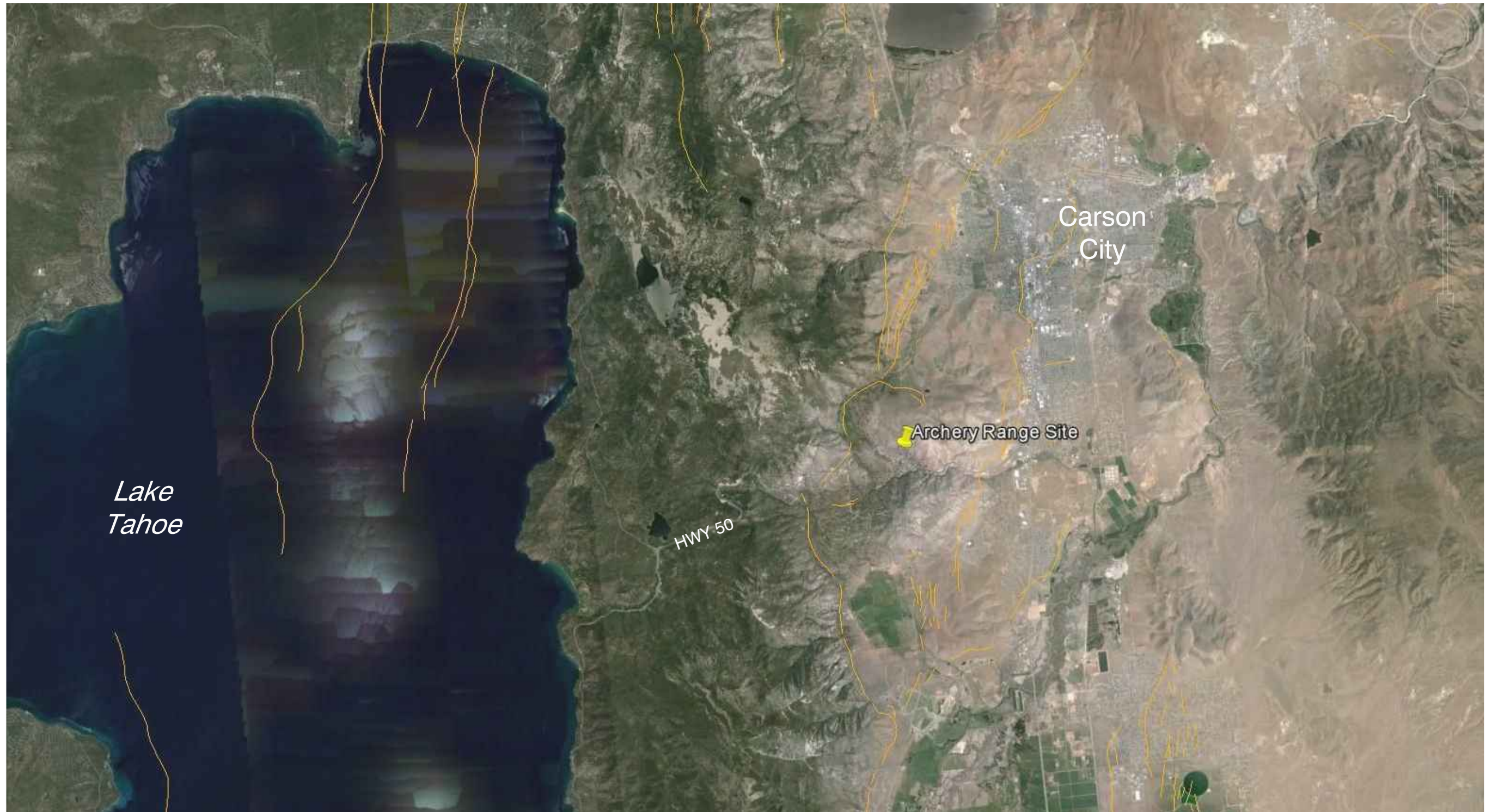


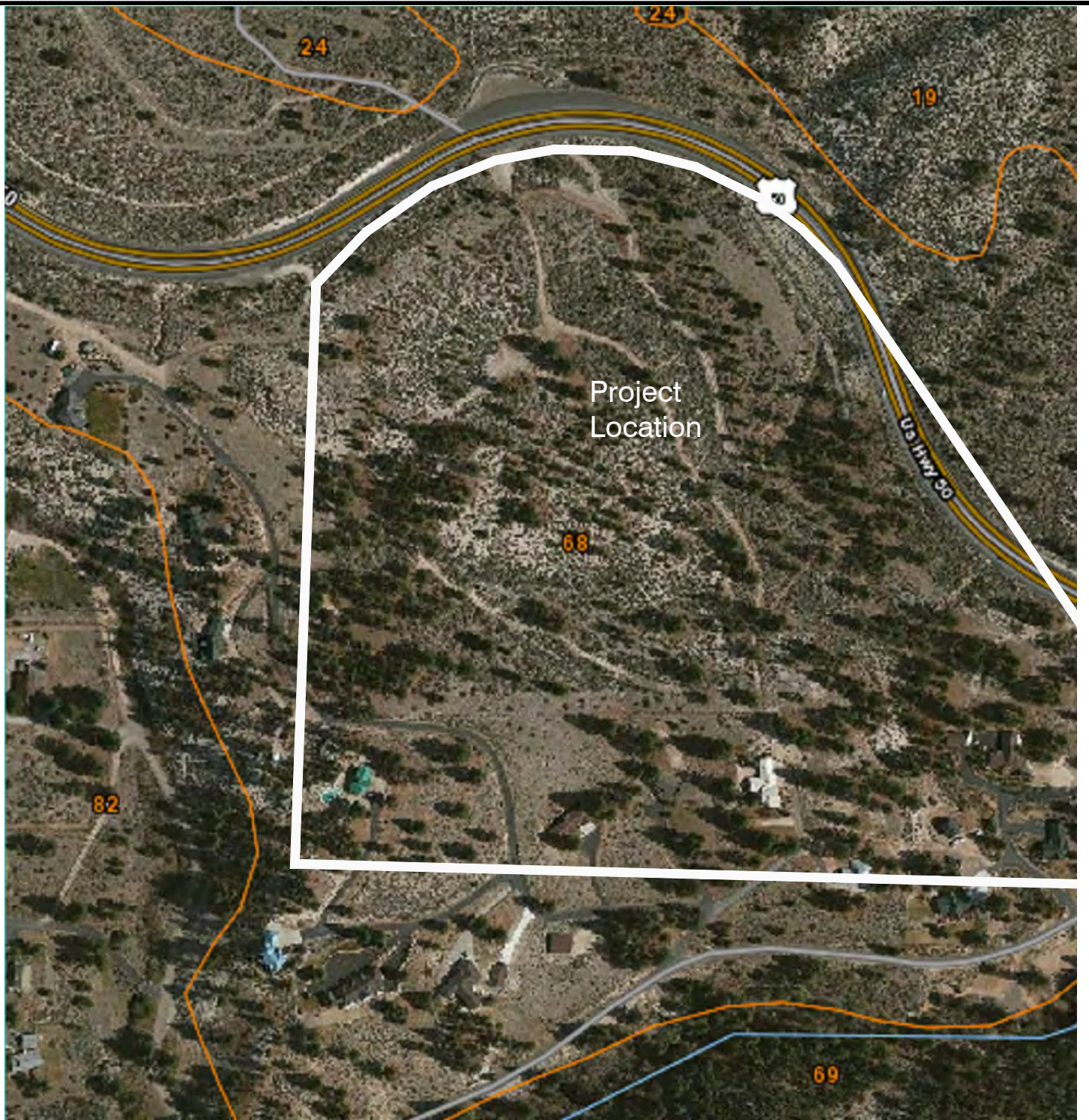
Figure 4
Fault Map



Scale: 1"=10,000'

Proj. No.: 14-142.1
Prepared: 4/16/14





SOIL MAP UNIT 68 TOIYABE BEDROCK COMPLEX - SOIL DEPTH <2'
USCS SM SILTY SAND



Figure 5
Soils Map

Appendix A

Percolation Test Results and Logs



Resource Concepts, Inc
 340 N. Minnesota Street
 Carson City NV 89703
 775-883-1600

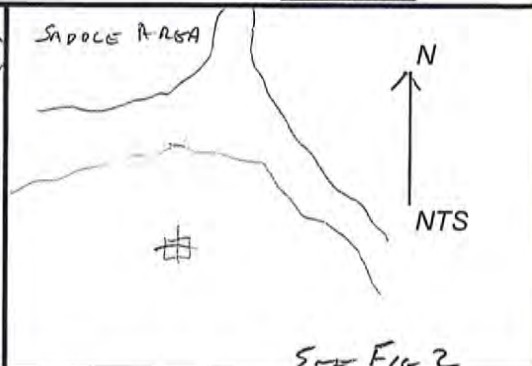
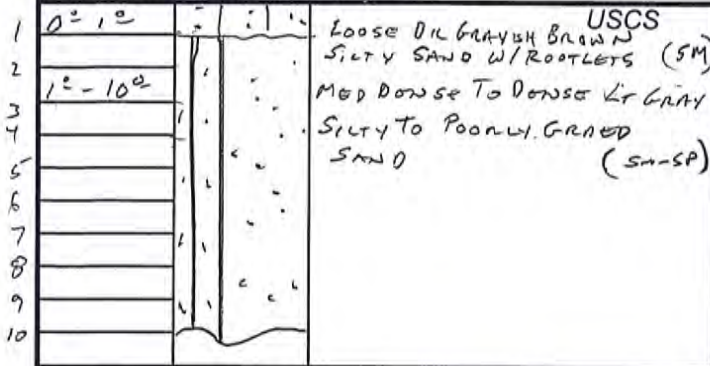
Project: SUNCOZ CC
 Project Number: 14-142.1
 Date: 4-9-2014

Soil Percolation Tests

Percolation Tests

Log of Test Pit # T.P.#1

Site Sketch



Soil Percolation Recorded Measurements

1. Depth to test : 1.5
2. Time of 1st saturation to 12" 9:53 Date: 4-9-14 @ 10:03 7"
 If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation :
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak. start pre-soak at 10:03
End pre-soak at 2:03
 Return between 16 - 24 hrs to start test.

Date of percolation test : 4/10/14

Hole #: 1 Diameter: 8" Depth: 12" Soil Type: SM

Reading	Time		Water Level		Elapsed Time min	Water Fall (in)
	Start	Finish	Start	Finish		
1	9:19	9:49	6"	8 3/16"	30	2 3/16"
2	9:49	10:19	6"	7 7/16"	30	1 7/16"
3	10:19	10:49	6"	7 3/4"	30	1 3/4"
4	10:49	11:19	5 3/4"	7 7/16"	30	1 1/16"
5	11:19	11:49	4 5/8"	6 5/8"	30	2"
6	11:49	12:19	4 1/4"	6 3/16"	30	1 15/16"
7	12:19	12:49	4"	6 1/16"	30	2 1/16"
	12:49	1:19	3 7/16"	5 3/4"	30	2 3/16"

> Δ = 3/4"
 > Δ = 5/16"
 > Δ = 1/16"
 > Δ = 5/16"
 > Δ = 1/16"
 > Δ = 2/16"
 > Δ = 2/16"

Stabilized Rate : 13.71 inches/min

Tested by: TEO
 Checked by: GL



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 340 N. Minnesota Street
 Carson City NV 89703
 775-883-1600

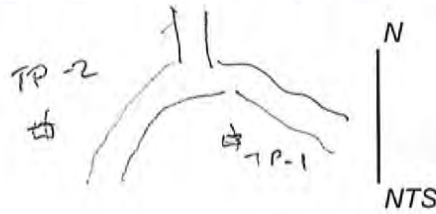
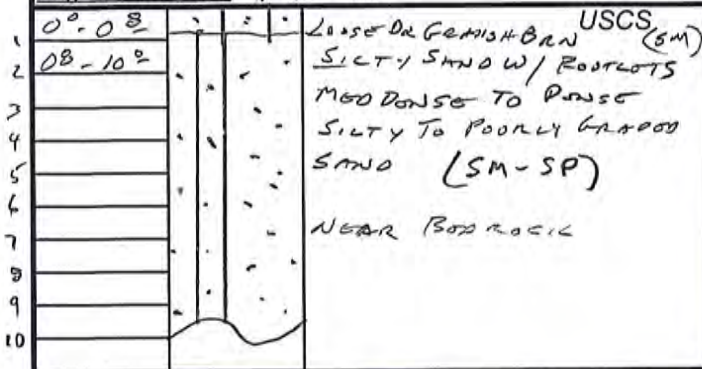
Project: SCHULTZ CC
 Project Number: 14-142-1
 Date: 4-9-2014

Soil Percolation Tests

Percolation Tests

Log of Test Pit # TP-2

Site Sketch



SEE FIG 2

Soil Percolation Recorded Measurements

1. Depth to test : 1.5'
2. Time of 1st saturation to 12" 10:30 Date : 4/9/14 @ 10:40 6 3/4"
 If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation :
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak. Start pre-soak at 10:40
 End pre-soak at 2:40

Date of percolation test : 4/10/14

Hole # : 1 Diameter : 10" Depth : 12" Soil Type : SM

Reading	Time		Water Level		Elapsed Time min	Water Fall (in)
	Start	Finish	Start	Finish		
1	9:25	9:55	6"	9 5/8"	30	3 5/8"
2	9:55	10:25	6"	8 7/16"	30	2 7/16"
3	10:25	10:55	6 1/16"	8 9/16"	30	2 5/8"
4	10:55	11:25	6 1/8"	8 3/4"	30	2 7/8"
5	11:25	11:55	5 3/4"	8 9/16"	30	2 13/16"
6	11:55	12:25	5 1/4"	8 1/8"	30	2 7/8"
7						

$\Delta = 1 3/16"$
 $\Delta = 3/16"$
 $\Delta = 2/16"$
 $\Delta = 1/16"$
 $\Delta = 1/16"$

Stabilized Rate : 10.43 inches/min

Tested by: TEO
 Checked by: CL



Resource Concepts, Inc
 340 N. Minnesota Street
 Carson City NV 89703
 775-883-1600

Project: SULLY CC
 Project Number: 14-142.1
 Date: 4/9/2014

Soil Percolation Tests

Percolation Tests

Log of Test Pit # TP-3

Site Sketch

1	1 ² -1 ⁶		Loose Moist DR GRAY USCS BRN SILTY SAND w/ROOTS (SM)
2	1 ⁶ -5 ²		1 ⁶ -5 ² Loose To Mod Dense pk YELLOWISH BRN SILTY SAND (SM)
3			
4			
5			
6			
7			
8			
9			
10			

N
|
NTS

SEE FIG 2

Soil Percolation Recorded Measurements

1. Depth to test : 2.5'
2. Time of 1st saturation to 12" 10:57 Date: 4/9/14 @ 11:07 10"
If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation :
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak. Start pre-soak at 11:07

Date of percolation test : 4/10 End pre-soak at 3:07
 Hole #: 1 Diameter: 8" Depth: 12" Soil Type: SM

Reading	Time		Water Level		Elapsed Time min	Water Fall (in)
	Start	Finish	Start	Finish		
1	10:58	10:58	2 ⁹ / ₁₆	8 ¹⁴ / ₁₆	20	2 ⁵ / ₁₆
2	10:42	11:02	5 ¹ / ₁₆	7 ⁴ / ₁₆	20	2 ³ / ₁₆
3	11:02	11:22	7 ⁴ / ₁₆	9 ¹² / ₁₆	20	2 ⁸ / ₁₆
4	11:23	11:43	5 ¹⁰ / ₁₆	8 ² / ₁₆	20	2 ⁸ / ₁₆
5	11:44	12:04	6 ¹⁰ / ₁₆	9 ¹ / ₁₆	20	2 ⁷ / ₁₆
6	12:05	12:25	6 ² / ₁₆	8 ¹⁰ / ₁₆	20	2 ⁸ / ₁₆
7						

1 1/16
7 1/16

Stabilized Rate : 8.0 inches/min

Tested by: JK
 Checked by: GL



Resource Concepts, Inc
 340 N. Minnesota Street
 Carson City NV 89703
 775-883-1600

Project: SCHULTZ CREEK
 Project Number: 14-142.1
 Date: 4/9/2014

Soil Percolation Tests

Percolation Tests

Log of Test Pit # TP-4

Site Sketch

0" - 3"		LOOSE MOIST BR GRAYISH BKN SILTY SAND (SM)	USCS
3" - 10"		W/ROOTS LOOSE TO M. DENSE DKYELLOW BKN, SILTY SAND (SM)	



Soil Percolation Recorded Measurements

1. Depth to test : 2.5'
 2. Time of 1st saturation to 12" 11:24 Date: 4/9/14 @ 11:30 EMPTY
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 11:30 @ 11:37 EMPTY
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : _____

Hole # : 1 Diameter : 8" Depth : 12" Soil Type : SM

Reading	Time		Water Level		Elapsed Time min	Water Fall (in)
	Start	Finish	Start	Finish		
1	10:30	10:32	6 ⁵ / ₁₆	8 ⁷ / ₁₆	2	1 ⁵ / ₁₆
2	10:32	10:34	8 ⁷ / ₁₆	9 ¹⁵ / ₁₆	2	1 ⁸ / ₁₆
3	10:45	10:47	5 ¹² / ₁₆	7 ⁷ / ₁₆	2	1 ¹¹ / ₁₆
4	10:48	10:50	6 ¹ / ₁₆	7 ³ / ₁₆	2	1 ⁸ / ₁₆
5	10:50	10:52	7 ⁹ / ₁₆	8 ¹² / ₁₆	2	1 ² / ₁₆
6	10:52	10:54	5 ¹⁰ / ₁₆	6 ¹⁵ / ₁₆	2	1 ⁵ / ₁₆
7	10:54	10:56	6 ¹⁵ / ₁₆	8 ⁴ / ₁₆	2	1 ⁵ / ₁₆

Stabilized Rate : 1.52 inches/min

Tested by: JK
 Checked by: GL



Resource Concepts, Inc
 340 N. Minnesota Street
 Carson City NV 89703
 775-883-1600

Project: SETHUZZ CCRIC
 Project Number: 14-142.1
 Date: 4/9/2014

Soil Percolation Tests

Percolation Tests

Log of Test Pit # TP-5

Site Sketch

1	0" - 08"		USCS LOOSE MOIST GRAY SAND (SM) SILTY SAND W/ROOTS LOOSE DISPERSED SILTY SAND W/ROOTS (SM) 7" - 8" MIXED ROCK WITH HARD TO MUD DENSE WEATHERED BEDROCK (SP)
2	08" - 72"		
3			
4			
5			
6			
7	72" - 85"		
8			
9			
10			



SEE FIG 2

Soil Percolation Recorded Measurements

1. Depth to test : 3.0'
2. Time of 1st saturation to 12" 11:58 Date: 4/9/14 @ 12:08 1/2"
 If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation : 12:07
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak. Start pre-soak at 12:08
 End pre-soak at 4:08
 Return between 16 - 24 hrs to start test.

Date of percolation test : 4/10/2014

Hole # : 1 Diameter : 8" Depth : 12" Soil Type : SM

Reading	Time		Water Level		Elapsed Time min	Water Fall (in)
	Start	Finish	Start	Finish		
1	1213	1215	5 ⁸ / ₁₆	6 ¹⁴ / ₁₆	2	1 ⁶ / ₁₆
2	1215	1217	5 ¹⁰ / ₁₆	6 ¹⁴ / ₁₆	2	1 ⁴ / ₁₆
3	1217	1219	6 ¹⁴ / ₁₆	7 ¹⁴ / ₁₆	2	1 -
4	1230	1232	5 ⁸ / ₁₆	6 ¹⁰ / ₁₆	2	1 ² / ₁₆
5	1232	1234	6 ¹⁰ / ₁₆	7 ⁶ / ₁₆	2	1 ⁶ / ₁₆
6	1234	1236	7 ⁶ / ₁₆	8 ⁸ / ₁₆	2	1 ² / ₁₆
7	1237	1239	5 ¹¹ / ₁₆	6 ¹⁰ / ₁₆	2	1 ⁵ / ₁₆

Stabilized Rate : 2.46 inches/min

Tested by: JK
 Checked by: GL



Resource Concepts, Inc
 340 N. Minnesota Street
 Carson City NV 89703
 775-883-1600

Project: SCHULZ
 Project Number: 14-142.1
 Date: 4/9/2014

Soil Percolation Tests

Percolation Tests

Log of Test Pit # FP-6

Site Sketch

1	0' - 1'	Loose Moist Pk Gray Bren. Silty Sand	USCS (SM)
2	1' - 4'	Loose Moist Pk Gray Silty Sand	(SM)
3			
4			
5	4' - 10'	Loose T. Moist Dense Moist of Silty Sand	(SM)
10			



Soil Percolation Recorded Measurements

1. Depth to test : 2.0'
2. Time of 1st saturation to 12" 12:40 Date: 4/9/14 @ 12:50 2'
 If 12" of water drains from hole in 10 mins or less, refill to 12".
3. Time of 2nd saturation :
4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak. Start pre-soak at 12:50
End pre-soak at 4:50

Date of percolation test : 4/10/14

Hole # : 1 Diameter : 8" Depth : 12" Soil Type : SM

Reading	Time		Water Level		Elapsed Time min	Water Fall (in)
	Start	Finish	Start	Finish		
1	10:35	11:05	6"	9 9/16"	30	3 9/16"
2	11:05	11:35	5 3/4"	9 5/16"	30	3 1/16"
3	11:35	12:05	5 1/2"	8 7/16"	30	2 15/16"
4	12:05	12:35	5 5/16"	9"	30	2 1/16"
5	12:35	1:05	4 7/16"	7 1/16"	30	3 4/16"
6	1:05	1:20	4 1/8"	6"	15	1 7/8"
7	1:20	1:35	3 7/8"	5 1/8"	15	1 1/4"

> $\Delta = 2/16$
 > $\Delta = 3/4$
 > $\Delta = 4/16$
 > $\Delta = 9/16$
 > $\Delta = 5/8$
 > $\Delta = 3/8$

Stabilized Rate : 13.40 inches/min
150 2:05 40 5 7/16 15 1 9/16
 Tested by: TEO
 Checked by: RL



Resource Concepts, Inc
 340 N. Minnesota Street
 Carson City NV 89703
 775-883-1600

Project: SCHULTZ CLARK
 Project Number: 14-142.1
 Date: 4/9/2014

Soil Percolation Tests

Percolation Tests

Site Sketch

Log of Test Pit # TP-7

1	6" - 12"	Loose Moist dk GRAY BRN SILTY SAND (SM)
2		
3	12" - 65"	Med Dense Moist dk yellowish TO reddish BRN SILTY SAND w/ COBBLES + GRV (SM)
4		
5	65" - 10'	Med Dense Moist reddish BRN SILTY SAND w/ COBBLES 6"-8" (SM)
6		
7		
8		
9		
10		



SEE FIGURE 2

Soil Percolation Recorded Measurements

1. Depth to test : 2'
 2. Time of 1st saturation to 12" 1:40 Date: 4/9/14 @ 1:40 EMPTY
 If 12" of water drains from hole in 10 mins or less, refill to 12".
 3. Time of 2nd saturation : 1:46 @ 1:55 EMPTY
 4. If 2nd filling drains in less than 10 mins, begin 1 hour test with 10 mins or less reading intervals.
 5. If either filling exceeds 10 mins to drain from hole, begin a 4-hr pre-soak.
- Return between 16 - 24 hrs to start test.

Date of percolation test : 4/10/14

Hole # : 1 Diameter : 8" Depth : 12" Soil Type : SM

Reading	Time		Water Level		Elapsed Time min	Water Fall (in)
	Start	Finish	Start	Finish		
1	11:45	11:51	6"	0	6 min	6"
2	11:52	12:02	6"	1/4"	10 min	5 3/4"
3	12:03	12:13	6"	1/4"	10 min	5 3/4"
4	12:13	12:23	6"	1/2"	10 min	5"
5	12:23	12:32	6"	1 7/8"	9 min	3 5/8"
6	12:33	12:39	6"	3 1/2"	6 min	2 1/2"
7	12:39	12:45	6"	3 1/2"	6 min	2 1/2"

Stabilized Rate : 2.40 inches/min

Tested by: GL
 Checked by: JK

Appendix B

Site Photos

SCHULZ ARCHERY RANGE PERCOLATION TEST PHOTOGRAPHS



PHOTO 1 – Percolation Test Pit TP – 1.



PHOTO 2 – Percolation Test Pit TP-2.

SCHULZ ARCHERY RANGE PERCOLATION TEST PHOTOGRAPHS



PHOTO 3 – Percolation Test Pit TP – 3.



PHOTO 4 – Percolation Test Pit TP - 4

SCHULZ ARCHERY RANGE PERCOLATION TEST PHOTOGRAPHS

No Picture

Lat. 39.117549

Long. -119.817968

PHOTO 5 – Percolation Test Pit TP – 5.



PHOTO 6 – Percolation Test Pit TP - 6

SCHULZ ARCHERY RANGE PERCOLATION TEST PHOTOGRAPHS

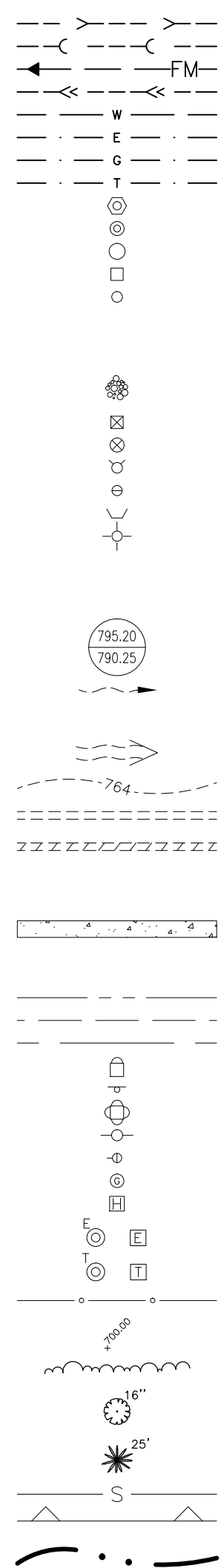


PHOTO 7 – Percolation Test Pit TP – 7.

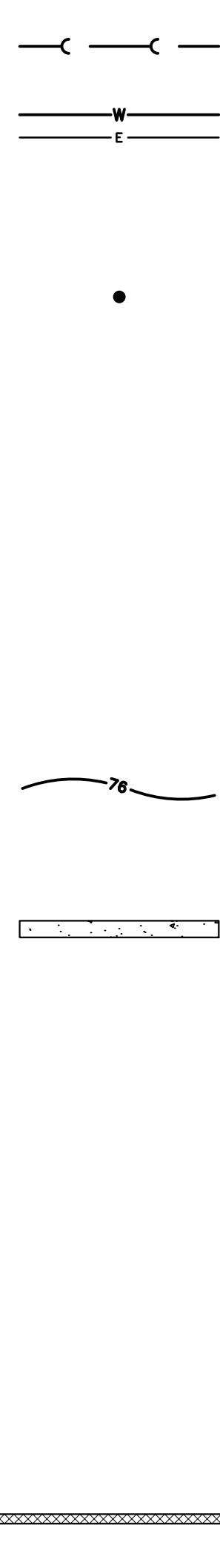
Tentative Map for SCHULZ INVESTMENTS APN: 007-051-72 CARSON CITY, NEVADA

STANDARD SYMBOLS

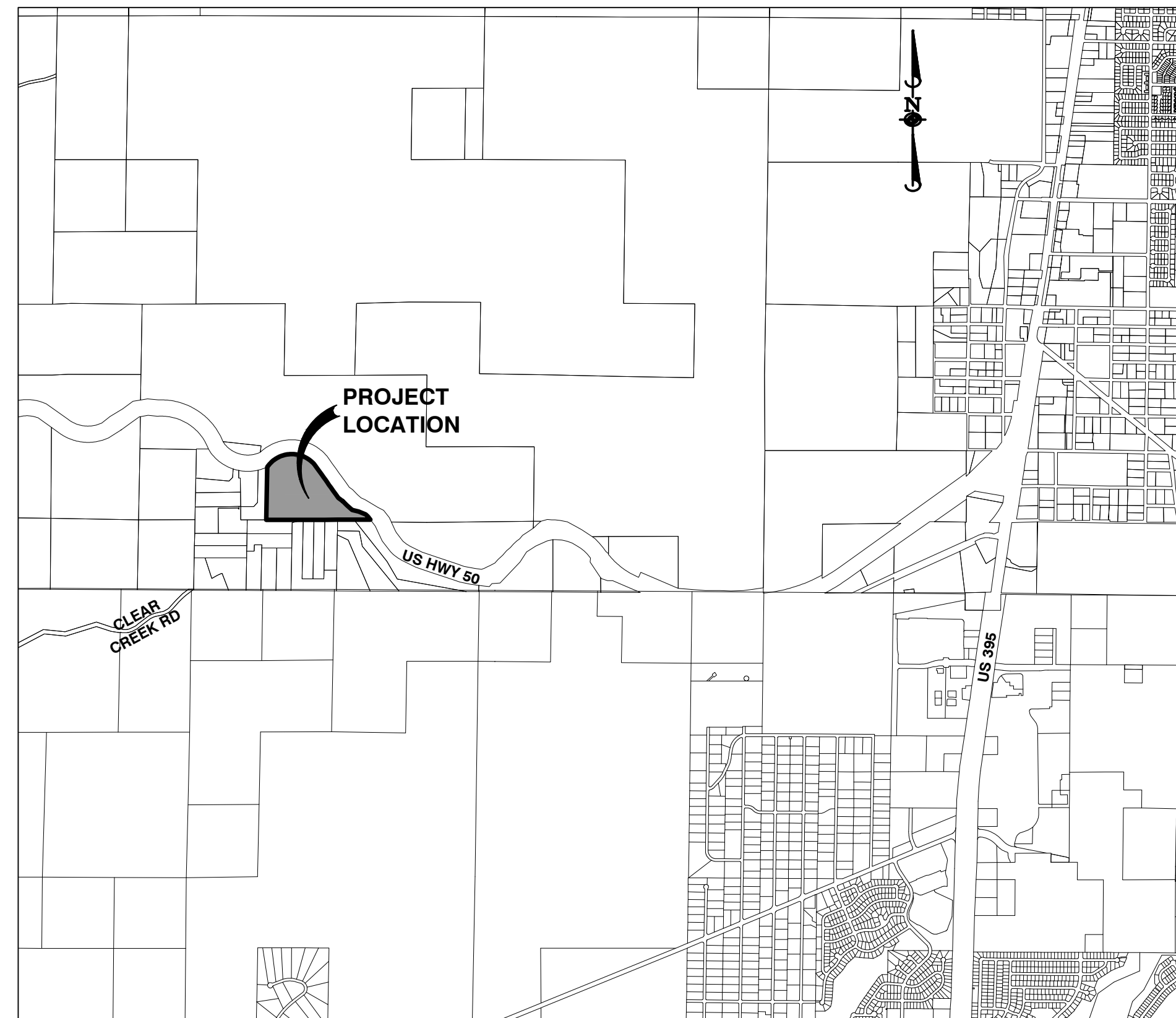
EXISTING



PROPOSED



- STORM SEWER
- SANITARY SEWER
- FORCEMAIN
- DRAIN TILE
- WATER MAIN
- ELECTRIC
- GAS
- TELEPHONE
- SANITARY MANHOLE
- STORM MANHOLE
- CATCH BASIN
- STORM INLET
- CLEANOUT
- HAY BALES
- RIP RAP
- VALVE IN VAULT
- VALVE IN BOX
- FIRE HYDRANT
- BUFFALO BOX
- FLARED END SECTION
- STREET LIGHT
- SUMMIT
- LOW POINT
- RIM ELEVATION
- INVERT ELEVATION
- DITCH OR SWALE
- DIRECTION OF FLOW
- OVERFLOW RELIEF SWALE
- 1 FOOT CONTOURS
- CURB AND GUTTER
- DEPRESSED
- CURB AND GUTTER
- REVERSE CURB AND GUTTER
- SIDEWALK
- H.C. ACCESSIBLE RAMP
- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- MAIL BOX
- SIGN
- TRAFFIC SIGNAL
- POWER POLE
- CUY WIRE
- GAS VALVE
- HANDHOLE
- ELECTRICAL EQUIPMENT
- TELEPHONE EQUIPMENT
- CHAIN-LINK FENCE
- SPOT ELEVATION
- BRUSH/TREE LINE
- DECIDUOUS TREE WITH TRUNK DIA. IN INCHES (TBR)
- CONIFEROUS TREE WITH HEIGHT IN FEET (TBR)
- SILT FENCE
- RETAINING WALL
- WETLAND



LOCATION MAP
N.T.S.

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	TITLE SHEET
2.	SITE PLAN
3.	GRADING AND DRAINAGE PLAN
4.	SITE CROSS SECTIONS

UTILITIES CONTACT

GAS
SOUTHWEST GAS CORP.
400 EAGLE STATION LANE
CARSON CITY, NV 89702
CONTACT: VINCENT ECHEVERRIA
PHONE: (775) 887-2704

ELECTRIC
NV ENERGY
875 EAST LONG STREET
CARSON CITY, NV 89706
CONTACT: GAIL JACKSON
PHONE: (775) 834-2961

PHONE
AT&T
745 W. MOANA LANE
RENO, NV 89509
CONTACT: DEBBIE CATANIA
PHONE: (775) 448-9225

CABLE T.V.
CHARTER COMMUNICATIONS
9335 PROTOTYPE DRIVE
RENO, NV 89521
CONTACT: ELIAS RUIZ
PHONE: (775) 850-1290

BASIS OF BEARING

THE BASIS OF BEARING FOR THIS PROJECT WAS ESTABLISHED USING THE LINE BETWEEN NEVADA DEPARTMENT OF TRANSPORTATION (NDOT) MONUMENT NUMBERS 760004M AND 760007M (N. 88°55'58" E.).

BASIS OF ELEVATION

THE BASIS OF ELEVATION FOR THIS PROJECT WAS ESTABLISHED USING USGS BENCH MARK M 322, NAVD 88, ELEVATION 4639.85

ABBREVIATIONS

A.B.	AGGREGATE BASE	FES	FLARED END SECTION	PVT	POINT OF VERTICAL TANGENCY
ADJ.	ADJUST	FL	FLOW LINE	P	PAYMENT
AGG.	AGGREGATE GRAVEL	FM	FORCE MAIN	R	RADIUS
B.A.M.	BIT, AGG. MIXTURE	G	GROUND	R.O.W.	RIGHT-OF-WAY
B-B	BACK TO BACK	GAS	GAS	RCP	REINFORCED CONCRETE PIPE
B/P	BOTTOM OF PIPE	G/F	GRADE AT FOUNDATION	REM	REMOVAL
BW	BOTTOM OF WALL	GB	GRADE BREAK	RR	RAILROAD
B-BOX	BUFFALO BOX	HDWL	HEADWALL	RT	RIGHT
BLDG.	BUILDING	HH	HANDHOLE	SAN	SANITARY SEWER
BM	BENCHMARK	HWL	HIGH WATER LEVEL	SDMH	STORM DRAIN MANHOLE
B.O.	BY OTHERS	HYD.	HYDRANT	SHLD.	SHOULDER
C.E.	COMMERCIAL ENTRANCE	INL.	INLET	SL	STREET LIGHT
CB	CATCH BASIN	INV.	INVERT	SMH	STORM MANHOLE
CL	CENTERLINE	IP	IRON PIPE	ST	STORM SEWER
CLID	CLOSED LID	MAX.	MAXIMUM	STA.	STATION
CMP	CORRUGATED METAL PIPE	MB	MAILBOX	STD	STANDARD
CONTR.	CONTROL	MH	STORM MANHOLE	SW	SIDEWALK
CONC.	CONCRETE	MIN.	MINIMUM	SY	SQUARE YARDS
CY	CUBIC YARD	NWL	NORMAL WATER LEVEL	TBR	TO BE REMOVED
D	DITCH	OLD	OPEN LID	T	TELEPHONE
DIA.	DIAMETER	P.E.	PRIVATE ENTRANCE	T-A	TYPE A
DIP	DUCTILE IRON PIPE	PC	POINT OF CURVE	TC	TOP OF CURB
DIMM	DUCTILE IRON WATER MAIN	PCC	POINT OF COMPOUND CURVE	T/F	TOP OF FOUNDATION
DT	DRAIN TILE	PGL	PROFILE GRADE LINE	T/P	TOP OF PIPE
E	ELECTRIC	PI	POINT OF INTERSECTION	TW	TOP OF WALL
E-E	EDGE TO EDGE	PL	PROPERTY LINE	T/WALK	TOP OF WALK
ELEV.	ELEVATION	PP	POWER POLE	TEMP	TEMPORARY
EX	EDGE OF PAVEMENT	PROP.	PROPOSED	TRANS	TRANSFORMER
EX.	EXISTING	PT	POINT OF TANGENCY	VB	VALVE BOX
F.E.	FIELD ENTRANCE	PVC	POLYVINYL CHLORIDE PIPE	VV	VALVE VAULT
F-F	FACE TO FACE	PVI	POINT OF VERTICAL INTERSECTION	WL	WATER LEVEL
FF	FINISHED FLOOR			WM	WATER MAIN



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Construction Managers - Environmental Scientists - Landscape Architects - Planners

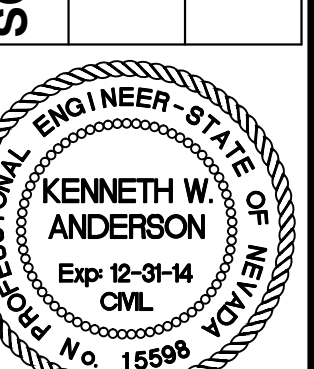
PROJECT OWNER

SCHULZ INVESTMENTS
207 N. IRIS ST
CARSON CITY, NV 89703

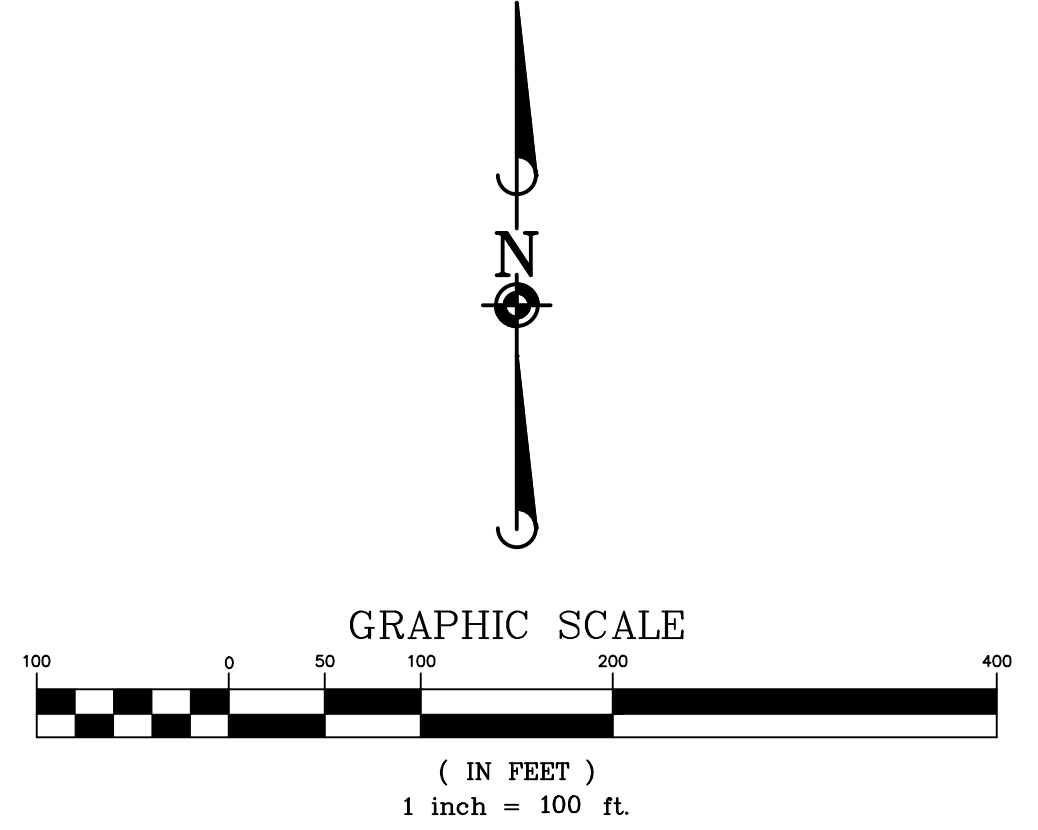
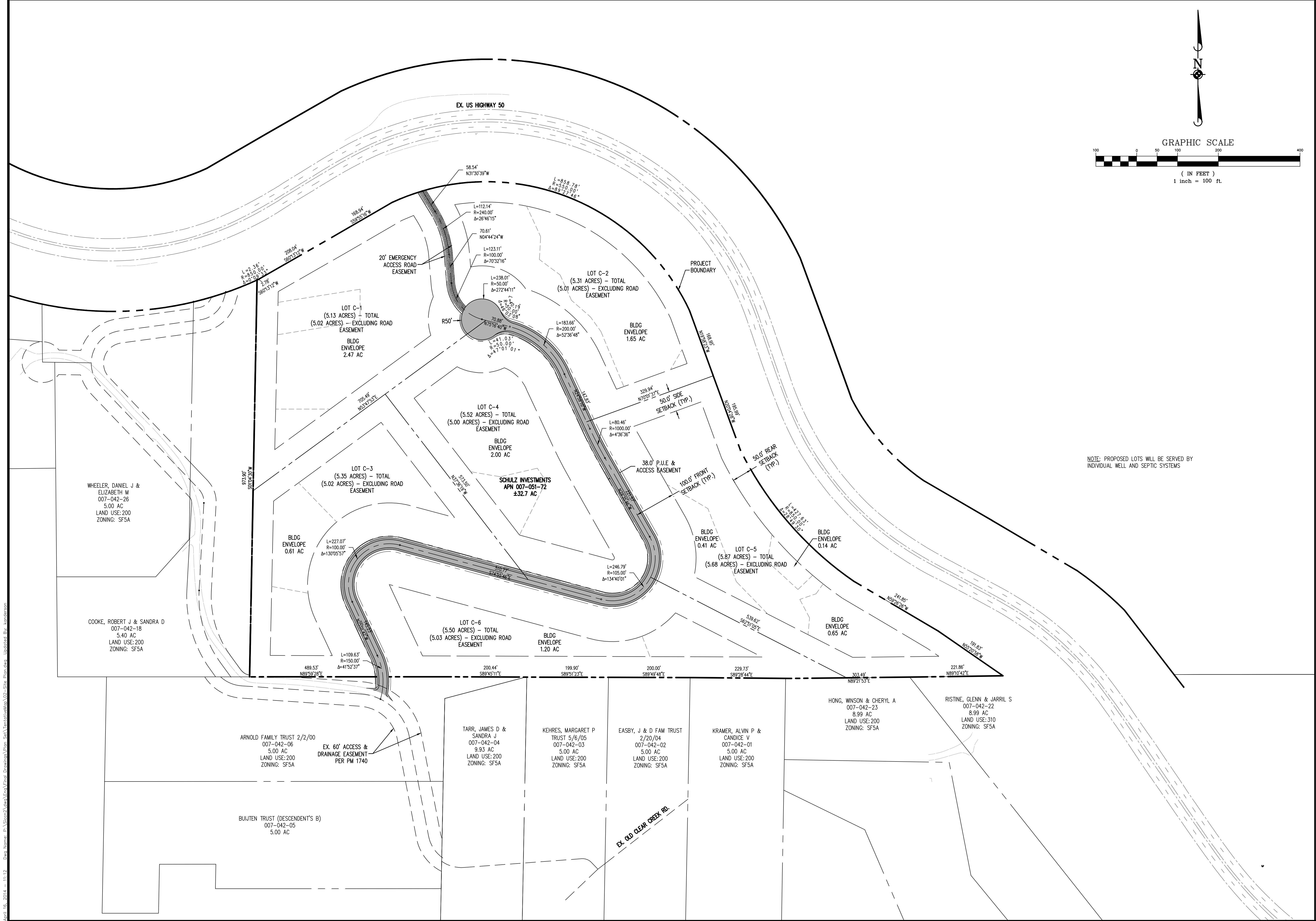
DATE	REVISIONS	CHECK BY

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SCHULZ INVESTMENTS (APN: 007-051-72)-TENTATIVE MAP
CARSON CITY, NEVADA
TITLE SHEET



PROJ. MGR.	MAR
PROJ. ASSOC.	KWA
DRAWN BY	CMS
DATE	04/16/14
SCALE	1"=100'
SHEET	1 OF 4
SICCN2	100235



NOTE: PROPOSED LOTS WILL BE SERVED BY INDIVIDUAL WELL AND SEPTIC SYSTEMS

DATE	
REVISIONS	
CHECK BY	

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SCHULZ INVESTMENTS (APN: 007-051-72)-TENTATIVE MAP
 CARSON CITY, NEVADA
 SITE PLAN

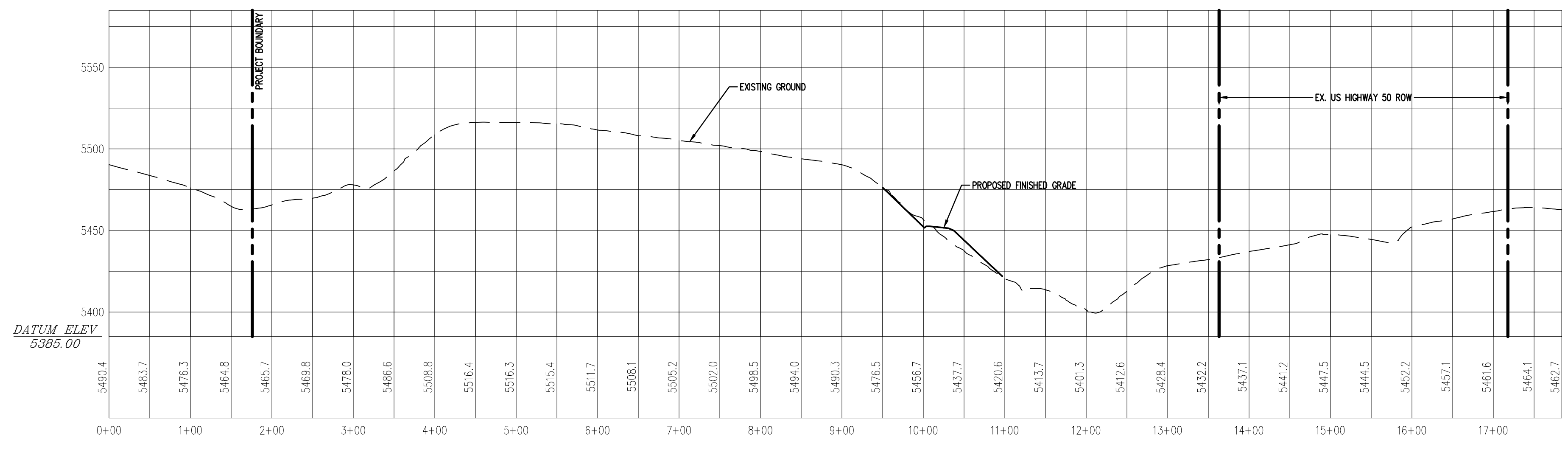


PROJ. MGR.	MAR
PROJ. ASSOC.	KWA
DRAWN BY	CMS
DATE	04/16/14
SCALE	1"=100'
SHEET	2 OF 4
SICCN2	100235

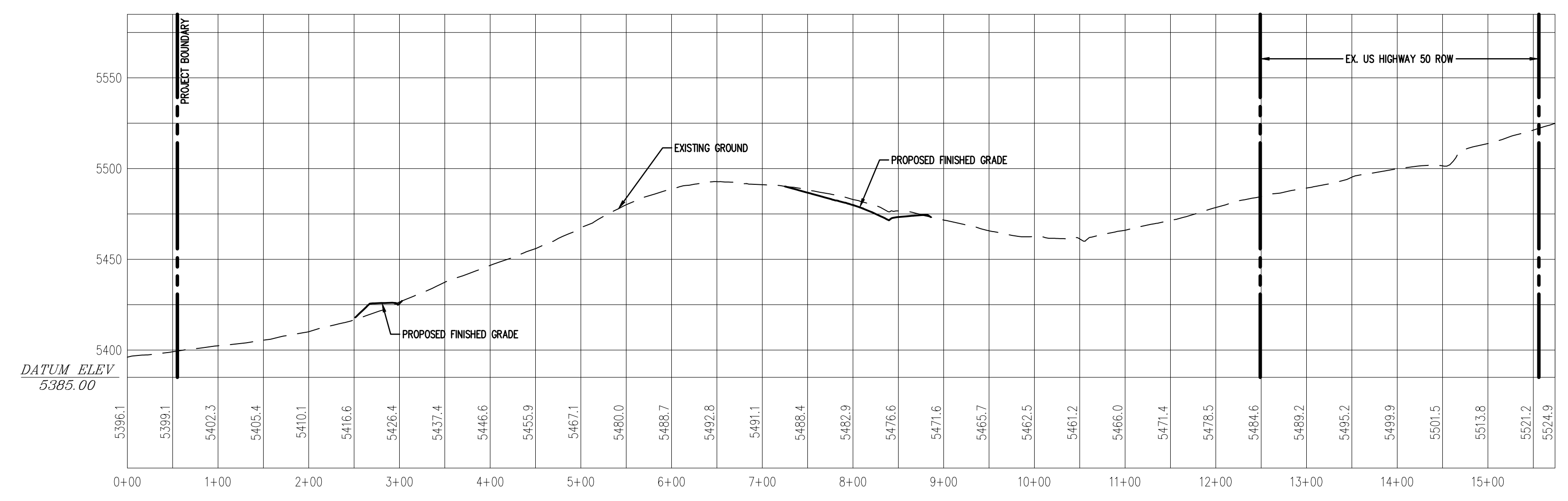
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TENTATIVE MAP

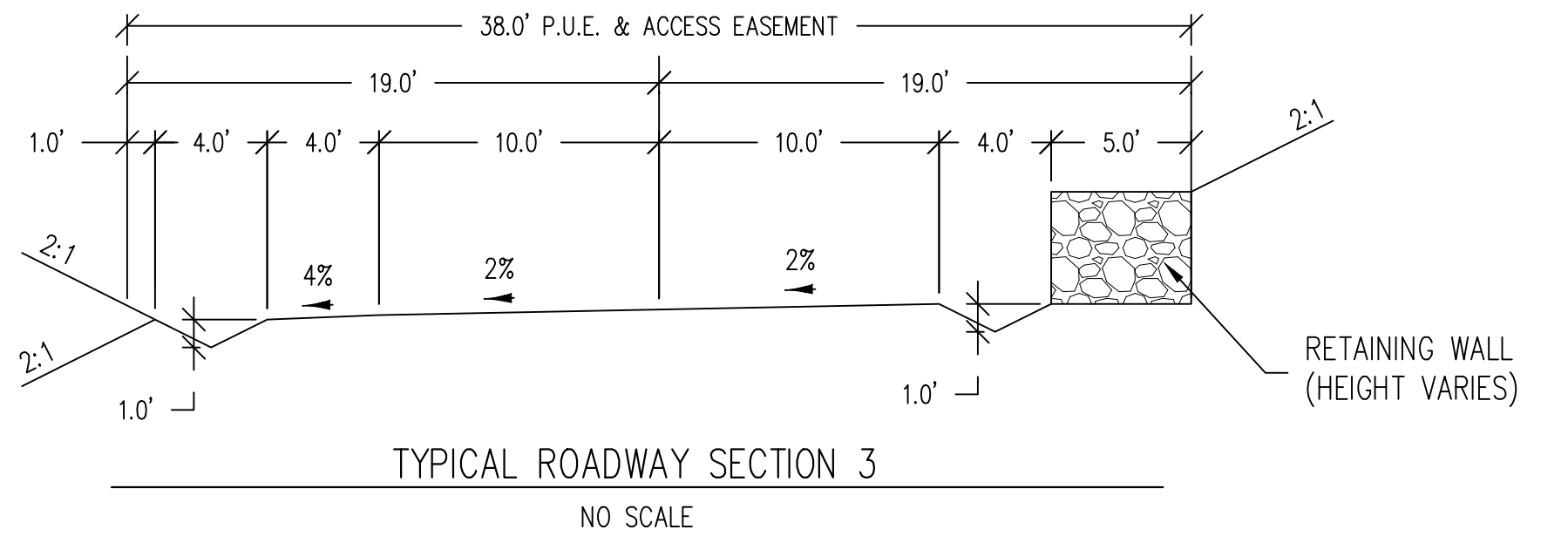
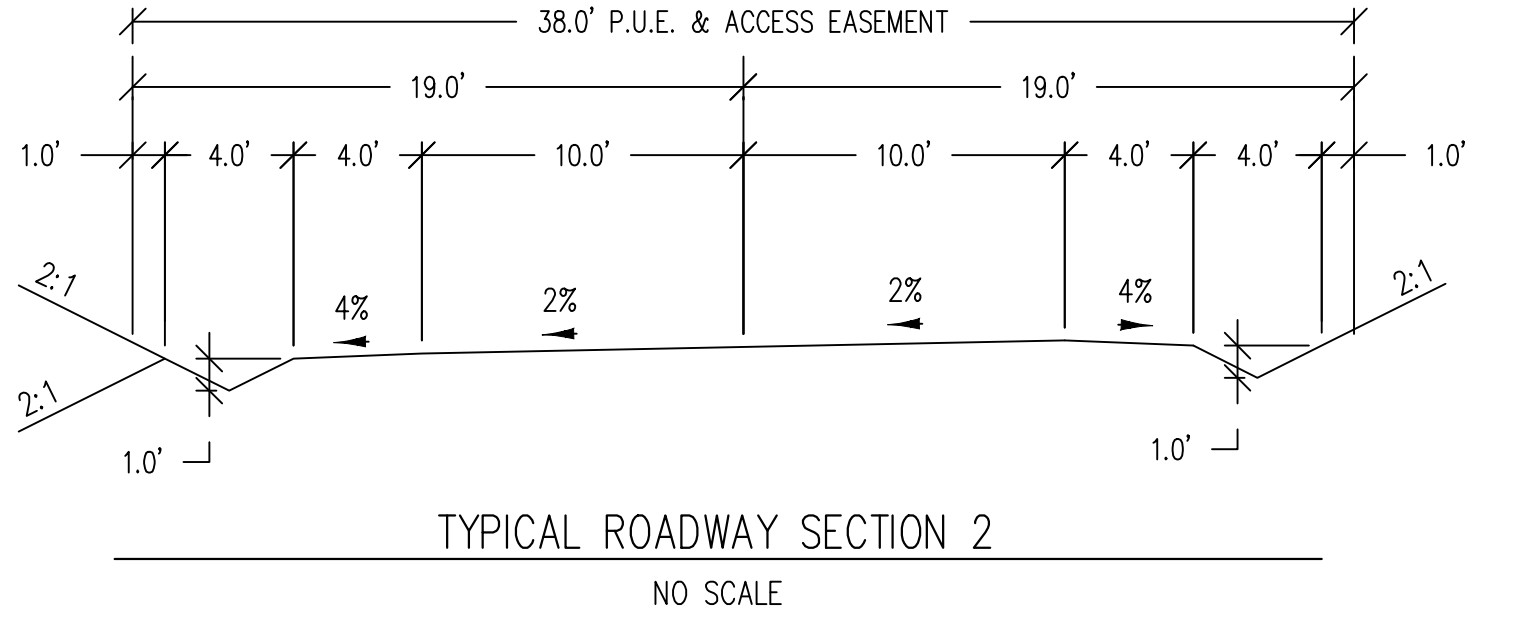
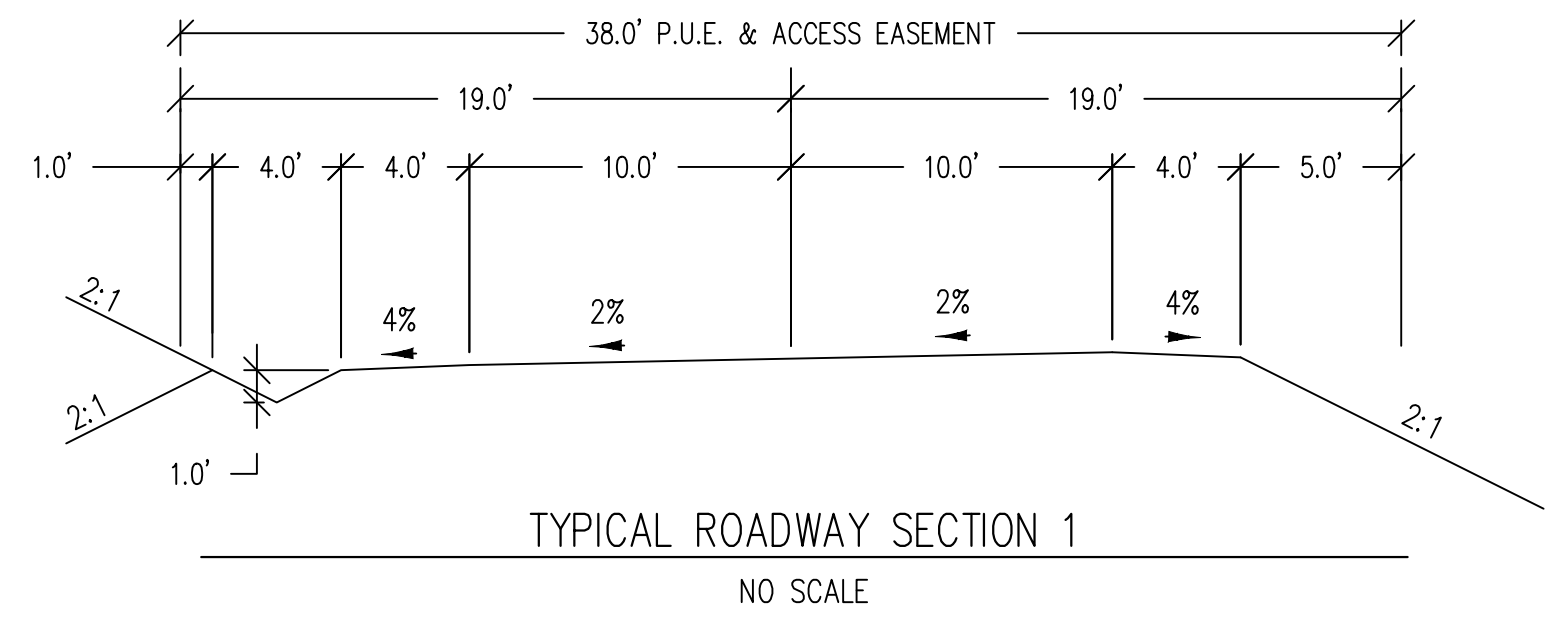
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CROSS SECTION WEST-EAST
H: 1"=100' V: 1"=50'



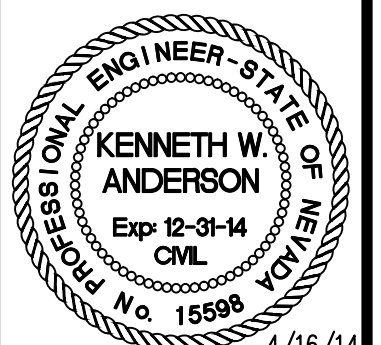
CROSS SECTION SOUTH-NORTH
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DATE	REVISIONS	DRAWN BY	CHECK BY

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SCHULZ INVESTMENTS (APN: 007-051-72)-TENTATIVE MAP
CARSON CITY, NEVADA
SITE CROSS SECTIONS



PROJ. MGR.: MAR
PROJ. ASSOC.: KWA
DRAWN BY: CMS
DATE: 04/16/14
SCALE: 1"=100'
SHEET
4 OF **4**
SICCN2 100235

TENTATIVE MAP