

Job No. 188050

March 18, 2022
Amended January 10, 2023

Comments have been provided on
Figure 2 map sheet.

Kristian Guntzelman
5381 Sugar Camp Rd.
Milford, OH 45150

Re: Wastewater Study
Mountain Rd
Guntzelman Porcelain Pines Subdivision
El Paso County, Colorado

Ref: *Final Plat*, prepared by SMH Consultants, last dated November 28, 2022.

Dear Kristian:

As requested, personnel of RMG – Rocky Mountain Group has performed a preliminary investigation and site reconnaissance at the above referenced address. It is our understanding the parcel included in this study is:

- EPC Schedule No. 8322200018: to be addressed as Mountain Road, which consists of 35.16 acres and is zoned R-T, Residential Topographic.

Project Description

Other documentation
states water to be
provided by CSU

The site consists of approximately 35.16 acres and is undeveloped, vacant land. It is our understanding the existing 35.16 acres is to be subdivided into a total of four lots. The lots are to range between approximately 5.06 acres and 12.49 acres each. The Proposed Lot Layout is included as Figure 2.

Each new lot is to be serviced by an on-site wastewater treatment system (OWTS), and all four lots are reportedly to be serviced by a “communal” water supply well. The site is to be accessed from Mountain Road which is to be extended for the proposed subdivision. A Site Vicinity Map is included as Figure 1.

This letter is to provide information for the on-site wastewater report per the On-Site Wastewater Treatment Systems (OWTS) Regulations of the El Paso County Board of Health pursuant to Chapter 8.

The following are also excluded from the scope of this report including (but not limited to) foundation recommendations, site grading/surface drainage recommendations, subsurface drainage recommendations, geologic, natural and environmental hazards such as landslides,

unstable slopes, seismicity, snow avalanches, water flooding, corrosive soils, erosion, radon, wild fire protection, hazardous waste and natural resources.

Previous Studies and Field Investigation

Reports of previous geotechnical engineering/geologic investigations for this site were available for our review and are listed below:

1. *Preliminary Subsurface Soil Investigation and Geology Report*, prepared by RMG-Rocky Mountain Group, Job No. 147611, last dated January 7, 2016.
2. *Soil and Geology Study*, prepared by RMG-Rocky Mountain Group, Job No. 188050, amended January 10, 2023.

SITE CONDITIONS

Personnel of RMG performed a reconnaissance visit on February 22, 2022. The purpose of the reconnaissance visit was to evaluate the site surface characteristics including landscape position, topography, vegetation, natural and cultural features, and current and historic land uses. Five test borings were drilled to depths of approximately 20 to 25 feet below the existing ground surface on December 22, 2015 for the 2016 report referenced above. A Test Boring Location Plan is presented in Figure 3.

The site surface characteristics were observed to consist of tall native grasses, weeds, scrub oak, and dense pine and aspen forestation.

The following conditions were observed with regard to the 35.16-acre parcel:

- A well currently does not exist on the existing 35.16-acre site;
- No runoff or irrigation features anticipated to cause deleterious effects to treatment systems on the site were observed;
- No major waterways exist on the property. The entire site lies outside the designated floodway or floodplain;
- No minor waterways exist on the property. The entire site lies outside the designated floodway or floodplain;
- Slopes greater than 20 percent do exist on the site; and
- Significant man-made cuts do not exist on the site.

Treatment Areas

Treatment areas at a minimum must achieve the following:

- The treatment areas must be 4 feet above groundwater or bedrock as defined by the Definitions 8.3.4 of the Regulations of the El Paso County Board of Health, Chapter 8, *OWTS Regulations*, effective July 7, 2018;
- Each lot (after purchase but prior to construction of an OWTS) will require an OWTS Site Evaluation report prepared per *the Regulations of the El Paso County Board of Health, Chapter 8 OWTS Regulations*. During the site reconnaissance, a minimum of two-8-foot deep test pits will need to be excavated in the vicinity of the proposed treatment area;

- Comply with any physical setback requirements of Table 7-1 of the El Paso County Department of Health and Environment (EPCDHE);
- Treatment areas are to be located a minimum 100 feet from any well (existing or proposed), including those located on adjacent properties per Table 7-2 per the EPCDHE; and
- The systems must be designed by a professional engineer and approved by EPCDHE if the ground slope is in excess of thirty percent.

Treatment areas are to be located a minimum distance of 100 feet from any well location. Treatment areas are also to be located a minimum of 50 feet from any spring, lake, watercourse, irrigation ditch, stream or wetland. Other setbacks for the treatment area include, but are not limited to, a minimum of 10 feet from property lines, dry gulches, cut banks and fill areas (from the crest).

It was determined that the use of test borings instead of test pits was appropriate for this site due to site access limitations, ground surface cover, dense tree stands, steep slopes, and our knowledge and experience with the materials in this area. The observation of test pits would not be anticipated to contribute any additional pertinent information above and beyond what was obtained in the referenced *Preliminary Subsurface Soil Investigation and Geology Report*.

DOCUMENT REVIEW

RMG has reviewed the provided Final Plat (prepared by SMH Consultants) and identified the soil conditions anticipated to be encountered during construction of the proposed OWTS for TBD Mountain Road. Based on our site observations and a review of documented Natural Resource Conservation Service – NRCS Web Soil Survey data provided by websoilsurvey.nrcs.usda.gov the Web Soil Survey Descriptions are presented below. A review of FEMA Map No. 08041C0486G, effective December 7, 2018 indicates that the proposed treatment areas are not located within an identified floodplain.

SOIL EVALUATION

Personnel of RMG performed a soil evaluation to include five approximately 20 to 25 foot deep test borings, on December 22, 2015. Soil laboratory testing was performed as a part of the previous investigation and included moisture content, grain-size analyses and Atterberg Limits. The test borings were drilled in areas that appeared most likely to be used for residential construction per the original concept plan dated September 8, 2021. Since the issuance of this study the lot layout has changed. Additional test borings were not drilled to accommodate the Final Plat lot layout, as the soils encountered onsite were fairly uniform. The test boring logs and laboratory test results are presented in the *Preliminary Subsurface Soil Investigation and the Soils and Geology Study*. A Septic Suitability map is presented in Figure 4.

The soil conditions as indicated by the NRCS data are anticipated to consist of Legault-Rock outcrop complex with 15 to 65 percent slopes and Tecolote very gravelly sandy loam with 15 to 40 percent slopes. Properties of the Legault-Rock outcrop complex include well drained soils, depth of the water table is anticipated to be greater than 80 inches, runoff is anticipated to be very high, frequency of flooding and/or ponding is anticipated to be none, and landforms include

mountain slopes. Properties of the Tecolote very gravelly sandy loam include well drained soils, depth of the water table is anticipated to be more than 80 inches, runoff is anticipated to be medium, frequency of flooding and/or ponding is anticipated to be none, and landforms include mountain slopes.

The USDA Soil Survey Map is presented in Figure 5.

Bedrock was encountered in the test borings performed by RMG. Groundwater was not observed in the test borings at the time of field exploration. Fluctuations in groundwater and subsurface moisture conditions may occur due to variations in rainfall and other factors not readily apparent at this time. Development of the property and adjacent properties may also affect groundwater levels.

CONCLUSIONS

In summary, it is our opinion the site is suitable for individual on-site wastewater treatment systems within the cited limitations. Contamination of surface and subsurface water resources should not occur if the treatment areas are evaluated and installed according to El Paso County Health Department and state guidelines in conjunction with proper maintenance.

LIMITATIONS

The information provided in this report is based upon the subsurface conditions observed from drilling five test borings and accepted engineering procedures. The subsurface conditions encountered in the test borings for the treatment area may vary from those encountered in the test pit excavations. Therefore, depth to limiting or restrictive conditions, bedrock, and groundwater may be different from the results reported in this letter. The proposed residences and OWTS should be located outside of the no-build area slopes as indicated in the Proposed Lot Layout included as Figure 2.

Individual wastewater treatment systems are proposed for each new lot. Additional OWTS site evaluations for the proposed lots will need to be performed in accordance with the applicable health department codes prior to construction.


I hope this provides the information you have requested. Should you have questions, please feel free to contact our office.

Cordially,

Reviewed by,

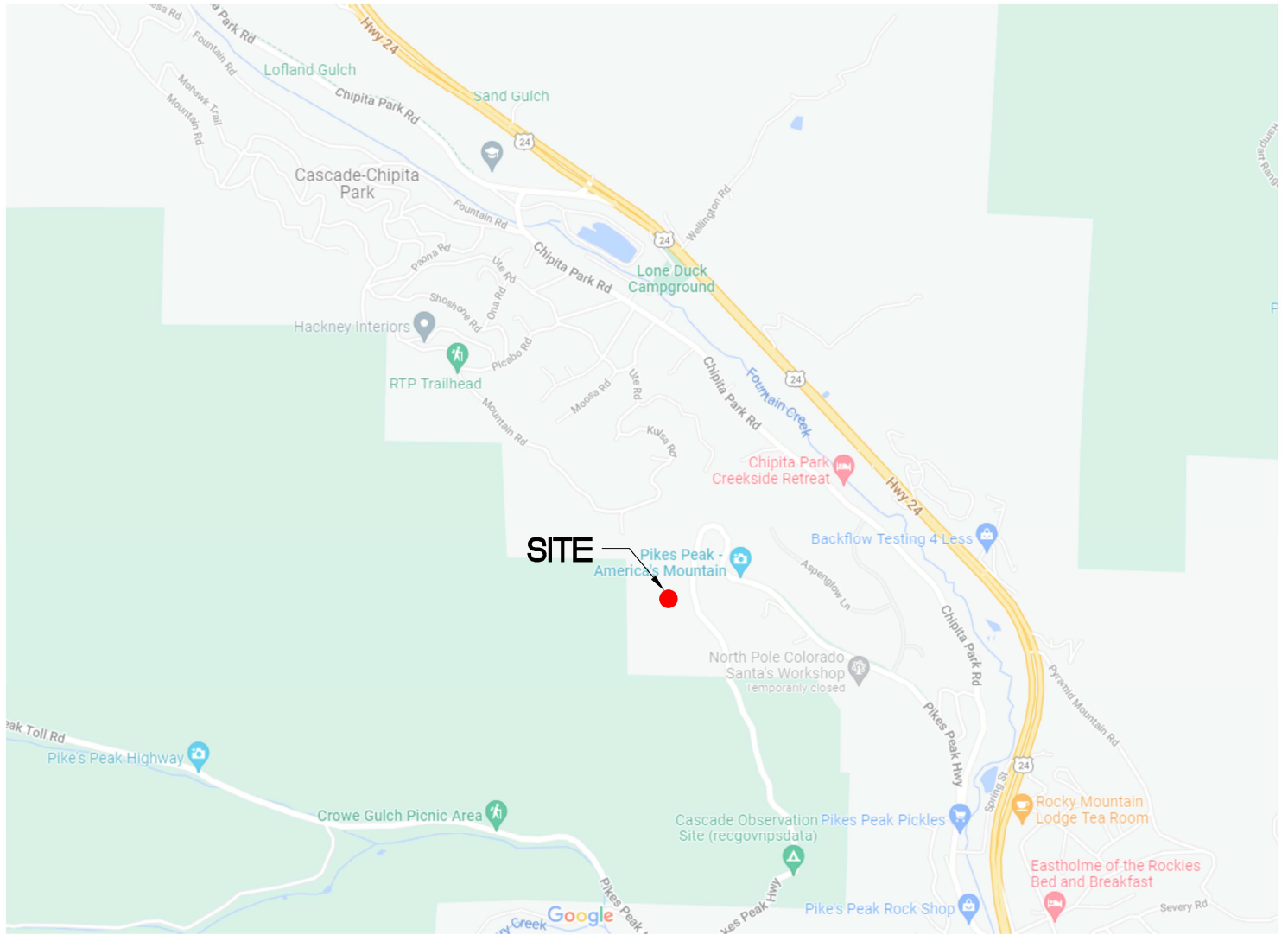
RMG – Rocky Mountain Group

RMG – Rocky Mountain Group



Kelli Zigler
Project Geologist

Tony Munger, P.E.
Geotechnical Project Manager



NOT TO SCALE

Architecture
Structural
Geotechnical



Engineers / Architects

SOUTHERN COLORADO OFFICE
2910 AUSTIN BLUFFS PKWY, SUITE 100,
COLORADO SPRINGS, CO 80918
(719) 548-0600 ~ WWW.RMGENGINEERS.COM

SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

Materials Testing
Forensics
Civil / Planning

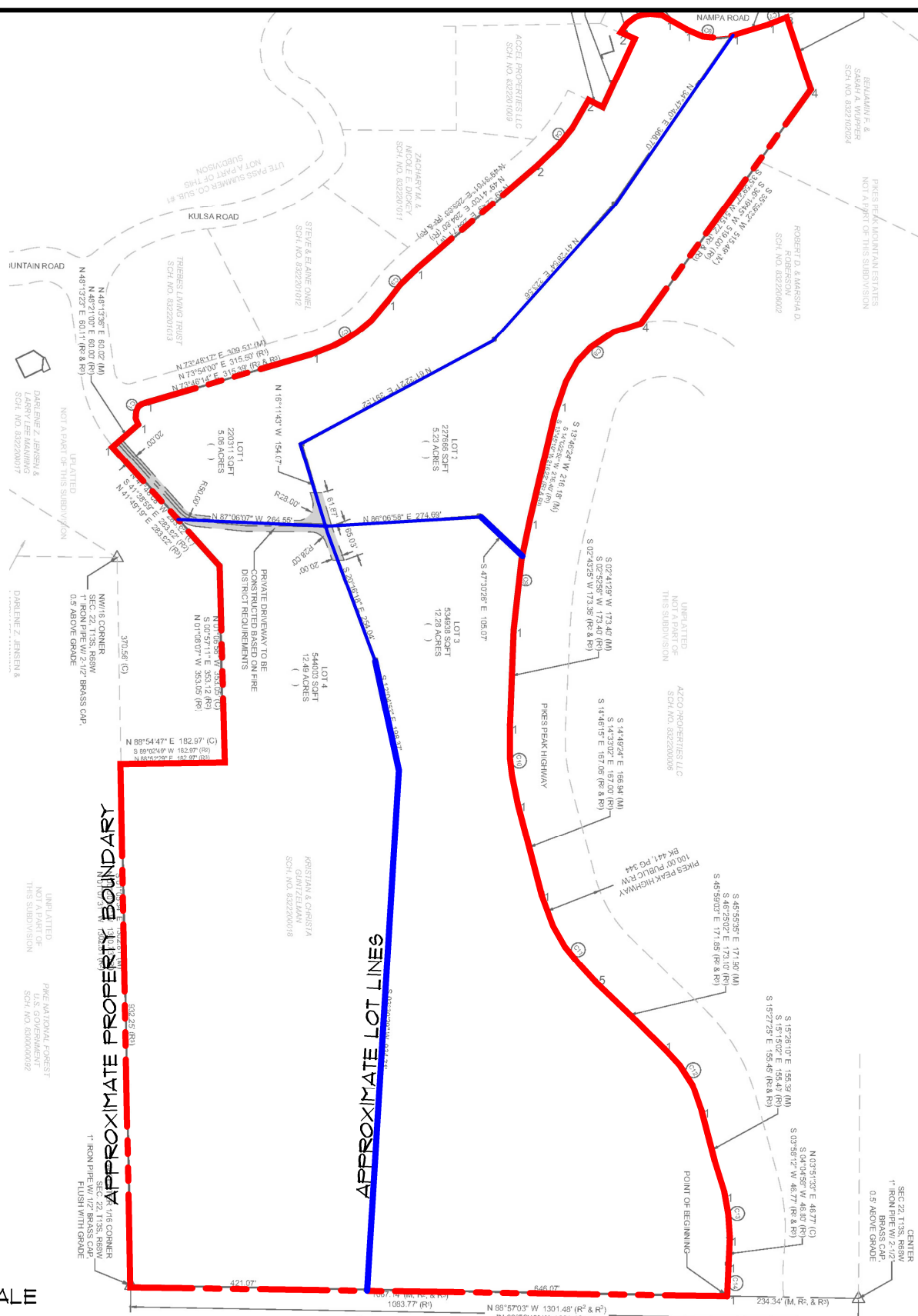
SITE VICINITY MAP

MOUNTAIN ROAD
GUNTZELMAN PORCELAIN
PINES SUBDIVISION
EL PASO COUNTY, COLORADO
KRISTIAN GUNTZELMAN

JOB No. 188050

FIG No. 1

DATE 3-18-2022



NOT TO SCALE

Architecture
Structural
Geotechnical

RMG

Materials Testing
Forensics
Civil / Planning

Engineers / Architects
SOUTHERN COLORADO OFFICE
2910 AUSTIN BLUFFS PKWY, SUITE 100,
COLORADO SPRINGS, CO 80918
(719) 548-0600 ~ WWW.RMBENGINEERS.COM
SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

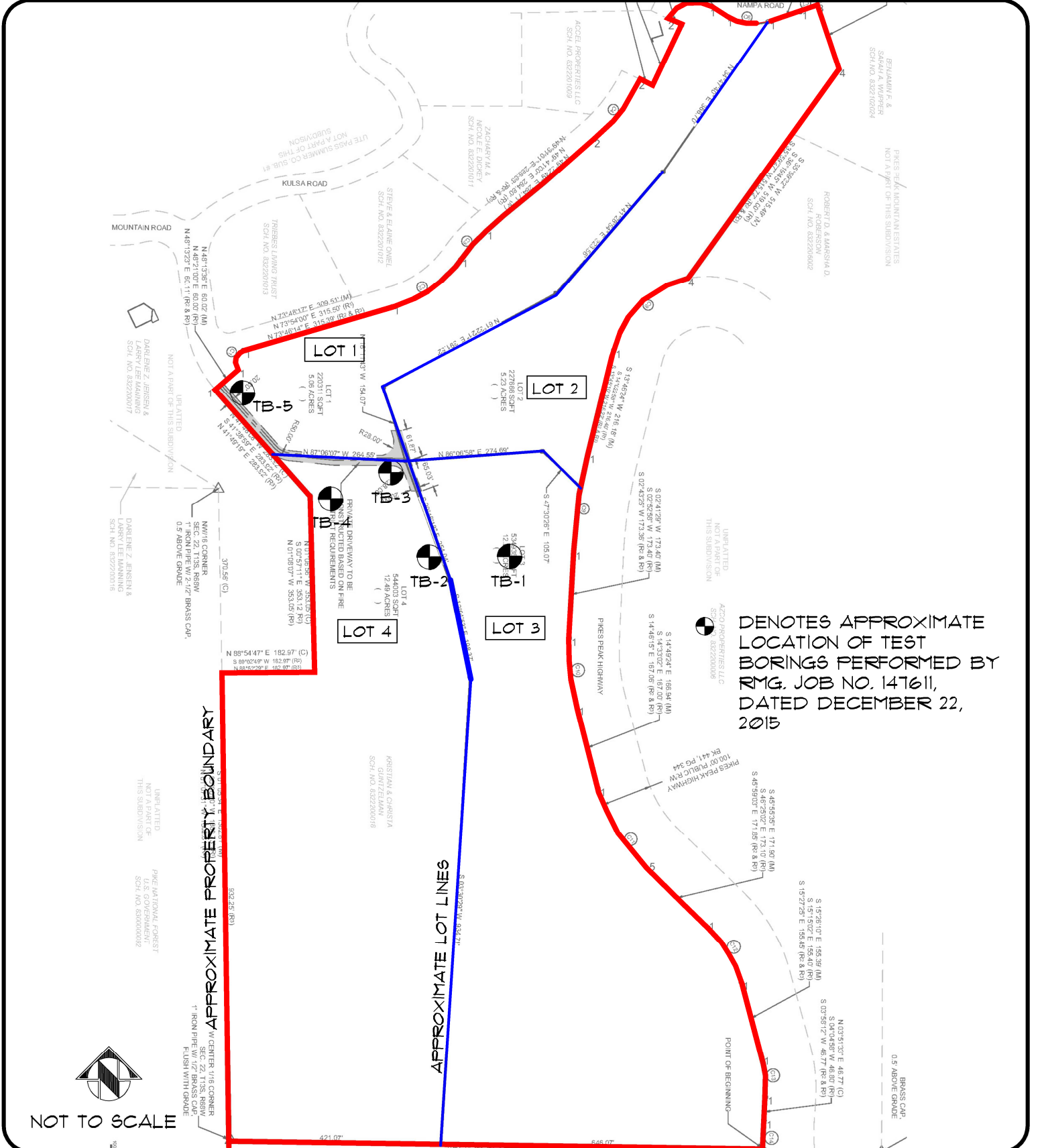
PROPOSED LOT LAYOUT

**MOUNTAIN ROAD
GUNTZELMAN PORCELAIN
PINES SUBDIVISION
EL PASO COUNTY, COLORADO**

JOB No. 188050

FIG No. 2

**DATE 3-18-2022
REV 1-05-2023**



Architecture
Structural
Geotechnical



Engineers / Architects
SOUTHERN COLORADO OFFICE
2910 AUSTIN BLUFFS PKWY, SUITE 100,
COLORADO SPRINGS, CO 80918
(719) 548-0600 ~ WWW.RMGENGINEERS.COM
SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

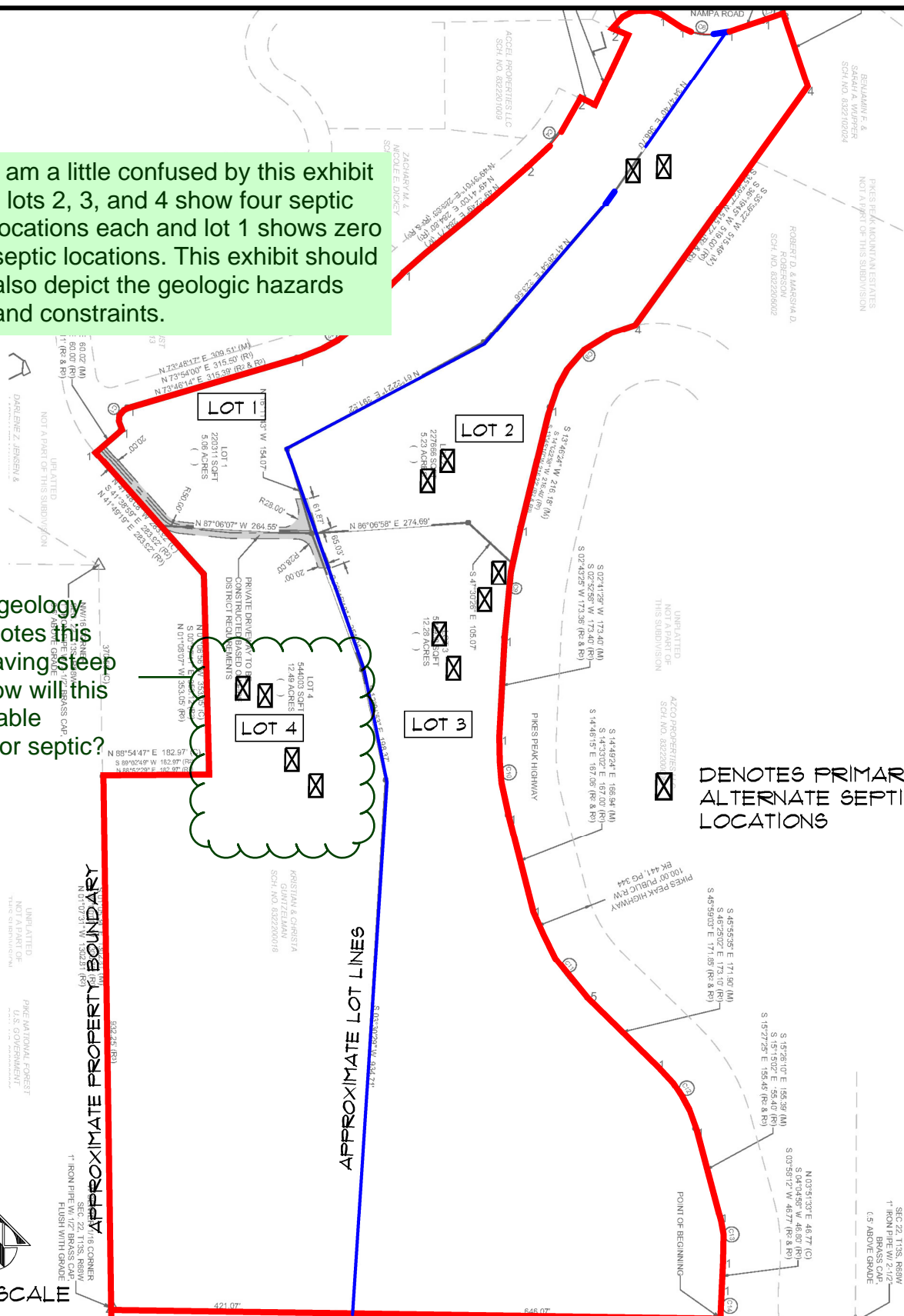
Materials Testing
Forensics
Civil / Planning

**TEST BORING
LOCATION PLAN**
MOUNTAIN ROAD
GUNTZELMAN PORCELAIN
PINES SUBDIVISION
EL PASO COUNTY, COLORADO
KRISTIAN GUNTZELMAN

JOB No. 188050
FIG No. 3
DATE 3-18-2022
REV 1-05-2023

I am a little confused by this exhibit - lots 2, 3, and 4 show four septic locations each and lot 1 shows zero septic locations. This exhibit should also depict the geologic hazards and constraints.

Soils and geology report denotes this area as having steep slopes. How will this be acceptable locations for septic?



X DENOTES PRIMARY AND ALTERNATE SEPTIC LOCATIONS



NOT TO SCALE



Architecture
Structural
Geotechnical

Materials Testing
Forensics
Civil / Planning

Engineers / Architects

SOUTHERN COLORADO OFFICE
2910 AUSTIN BLUFFS PKWY, SUITE 100,
COLORADO SPRINGS, CO 80918

(719) 548-0600 ~ WWW.RMGENGINEERS.COM
SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

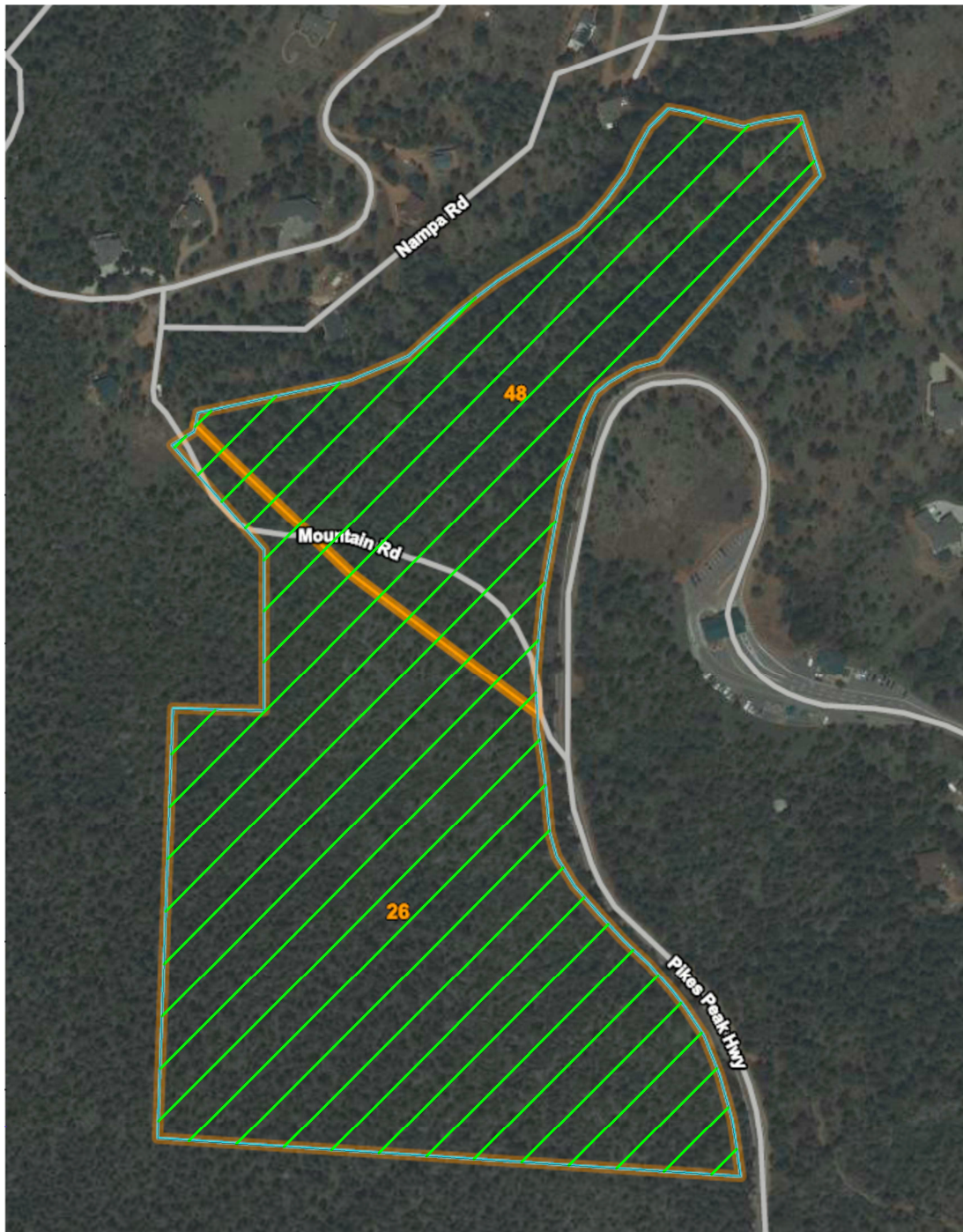
SEPTIC SUITABILITY MAP

MOUNTAIN ROAD
GUNTZELMAN PORCELAIN
PINES SUBDIVISION
EL PASO COUNTY, COLORADO
KRISTIAN GUNTZELMAN

JOB No. 188050

FIG No. 4

DATE 3-18-2022
REV 1-05-2023



26 - Legault-Rock Outcrop Complex, 15 to 65 percent slopes

48 - Tecolote very gravelly sandy loam, 15 to 40 percent slopes, very stony



NOT TO SCALE

Architecture
Structural
Geotechnical



Engineers / Architects

SOUTHERN COLORADO OFFICE
2910 AUSTIN BLUFFS PKWY, SUITE 100,
COLORADO SPRINGS, CO 80918

(719) 548-0600 ~ WWW.RMGENGINEERS.COM
SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

Materials Testing
Forensics
Civil / Planning

USDA SOIL SURVEY MAP

MOUNTAIN ROAD
GUNTZELMAN PORCELAIN
PINES SUBDIVISION
EL PASO COUNTY, COLORADO
KRISTIAN GUNTZELMAN

JOB No. 188050

FIG No. 5

DATE 3-18-2022