Job No. 196369

September 26, 2024

Christine Tschamler
6275 Montarbor Drive
Colorado Springs, CO 80918

Re: Wastewater Study
Black Squirrel Rd
El Paso County, Colorado

Dear Ms. Tschamler:

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. 5114000019, currently labeled as Black Squirrel Road, which consists of 19.39 acres and is zoned RR-5.

It is our understanding the parcel is to be subdivided into three lots. According to the proposed lot layout, the lots are to consist of approximately 6.38 to 6.40 acres each. The approximate location of the site is shown on the Site Vicinity Map, Figure 1. The Proposed Lot Layout is presented in Figure 2.

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

One geologic investigation was completed in conjunction with this study and is listed below:

1. *Soil and Geology Study, Black Squirrel Road, El Paso County, Colorado*, prepared by RMG – Rocky Mountain Group, Job No. 196369, dated September 13, 2024.

SITE CONDITIONS

Personnel of RMG performed a reconnaissance visit on May 17, 2023. 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. Two 8-foot deep test pits were performed during our reconnaissance visit. A Test Pit Location Plan is presented in Figure 3.

The site surface characteristics were observed to consist of low lying grasses, weeds, and deciduous trees are dense through the entire property. No waterways were observed onsite.

The following conditions were observed with regard to the parcel:

- A well currently **does not** exist on the existing site;
- No runoff or irrigation features anticipated to cause deleterious effects to treatment systems on the site were observed;
- A minor waterway exists on the site. The entire site lies outside the designated floodway or floodplain;
- A low lying drainageway was observed traversing the property.
- Slopes greater than 20 percent **do not** 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;
- Prior to construction of an OWTS, an OWTS design prepared per *the Regulations of the El Paso County Board of Health, Chapter 8, OWTS Regulations* will need to be completed. A scaled site plan and engineered design will also be required prior to obtaining a building permit;
- 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;
- Treatment areas must also be located a minimum 50 feet from any spring, lake, water course, irrigation ditch, stream or wetland, and 25 feet from dry gulches;
- Other setbacks include the treatment area to be located a minimum 10 feet from property lines, cut banks and fill areas (from the crest);
- The new lots shall be laid out to ensure that the proposed OWTS does not fall within any restricted areas, (e.g. utility easements, right of ways). Based on the proposed lot layout and the information obtained from the test pit observations, each lot has a minimum of two locations for the OWTS as currently proposed.

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.

DOCUMENT REVIEW

RMG has reviewed the proposed lot layout plan. We have identified the soil conditions anticipated to be encountered during construction of the proposed OWTS for each proposed lot. Our review included a review of documented Natural Resource Conservation Service (NRCS) data provided by websoilsurvey.nrcs.usda.gov. The Soil Survey Descriptions are presented below.

A review of FEMA Map No. 08041C0019G, 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 two 8-foot deep test pits on May 17, 2024 (Test Pit TP-1 and TP-2), utilizing the visual and tactile method for the evaluation of the site soils. The test pits were excavated in areas that appeared most likely to be used for residential construction. The Test Pit Logs are presented in Figure 4.

The soil conditions as indicated by the NRCS data are anticipated to consist of:

- 26 – Elbeth sandy loam, 8 to 15 percent slopes. The Elbeth sandy loam was mapped by the USDA to encompass the majority of the site. Properties of the Elbeth sandy loam include well drained soils, depth of the water table is anticipated to be greater than 80 inches, runoff is anticipated to be medium, frequency of flooding and/or ponding is none, and landforms include hills.
- 36 – Holderness loam, 8 to 15 percent slopes. The Holderness loam was mapped by the USDA to encompass the northeast and northwest corners of the site. Properties of the Holderness loam include well drained soils, depth of the water table is anticipated to be greater than 80 inches, runoff is anticipated to be medium, frequency of flooding and/or ponding is none, and landforms include hills. A USDA Soil Survey Map is presented in Figure 5.

Neither groundwater nor bedrock were encountered in the test pits performed by RMG.

An OWTS is proposed for each lot and should conform to the recommendations of a future OWTS site evaluation, performed in accordance with the applicable health department codes prior to construction. This report may require additional test pits in the vicinity of the proposed treatment field. A minimum separation of 4 feet shall be maintained from groundwater and bedrock to the infiltrative surface.

Redoximorphic features indicating the fluctuation of groundwater or higher ground water levels were not observed in the test pits. Due to the heavily forested lots, clearing of trees is expected for the installation of the OWTS. It should be noted, each lot has sufficient space for both primary and alternate OWTS locations. The OWTS locations will to need to maintain adequate separation from

the drainageway that traverses the property from the southwest to the northeast. The Septic Suitability Map is presented in Figure 6. The proposed OWTS locations are a visual only. If the EPCDHE physical setback requirements are met for each lot and the OWTS is not placed with in the *psw – potentially seasonally wet areas,* there are no additional restrictions on the placement of the OWTS.

CONCLUSIONS

In summary, it is our opinion the site is suitable for individual on-site wastewater treatment systems within the cited limitations. There are no foreseeable or stated construction related issues or land use changes proposed at this time.

Soil and groundwater conditions at the site are suitable for individual treatment systems. The LTAR values ranged between 0.15 and 0.60 for the onsite soils observed in the test pits. It should be noted that the LTAR values are for the test pit locations performed for this report only. The LTAR values may change throughout the site. If an LTAR value of less than 0.35 (soil types 3A to 5) or greater than 0.80 (soil type 0) is encountered at the time of the site specific OWTS evaluation, an "engineered system" will be required.

Based on the soils encountered in our test pits, soil type 3A (LTAR 0.30), soil type 4 (LTAR 0.20), and soil type 4A (LTAR 0.15), “engineered systems” should be anticipated for all the lots within the subdivision.

LIMITATIONS

The information provided in this report is based upon the subsurface conditions observed in the profile pit excavations and accepted engineering procedures. The subsurface conditions encountered in the excavation 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.

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

Cordially,

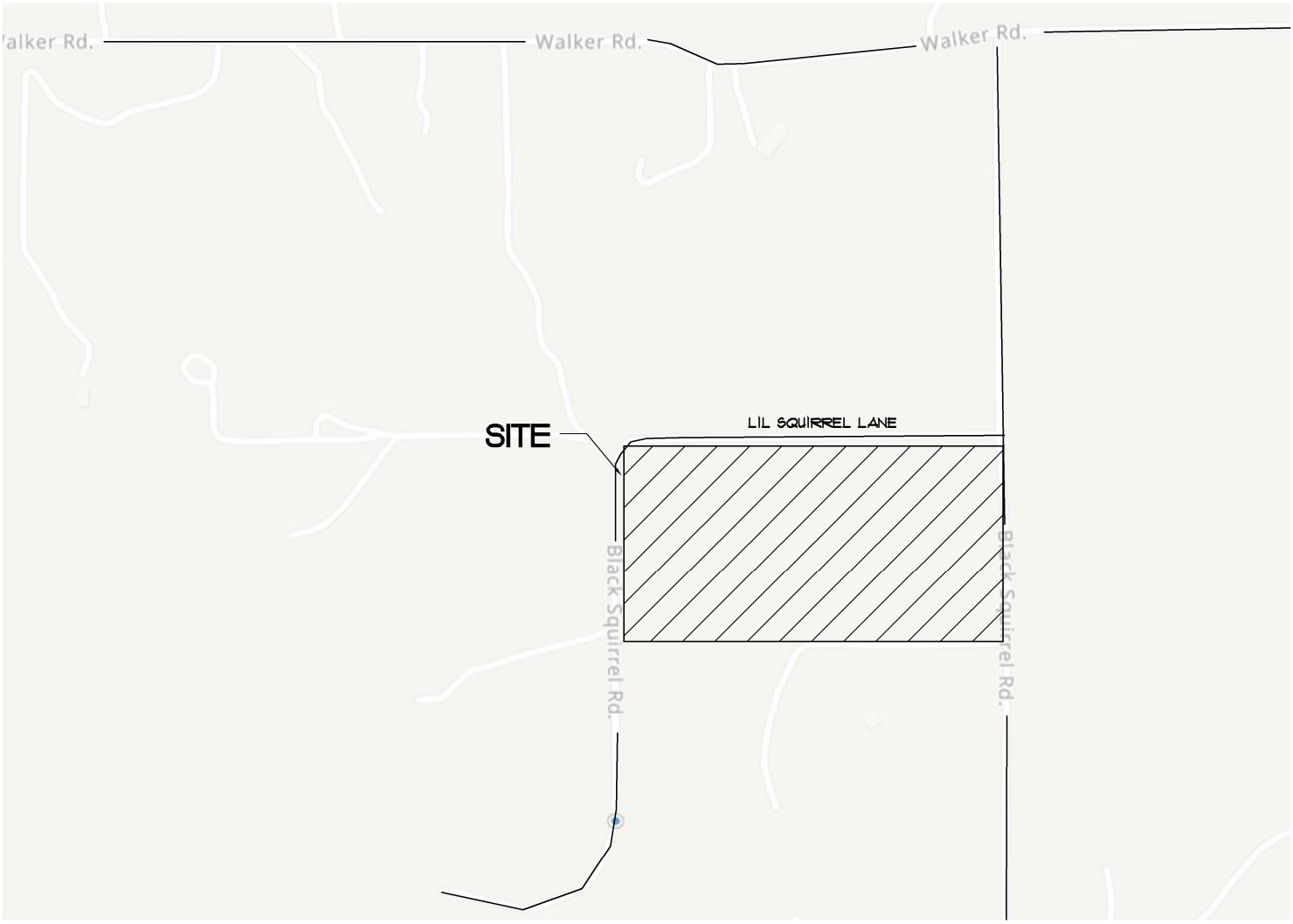
RMG – Rocky Mountain Group

Jared McElmeel, E.I.
Geotechnical Staff Engineer

Reviewed by,

RMG – Rocky Mountain Group

Tony Munger, P.E.
Sr.Geotechnical Project Manager



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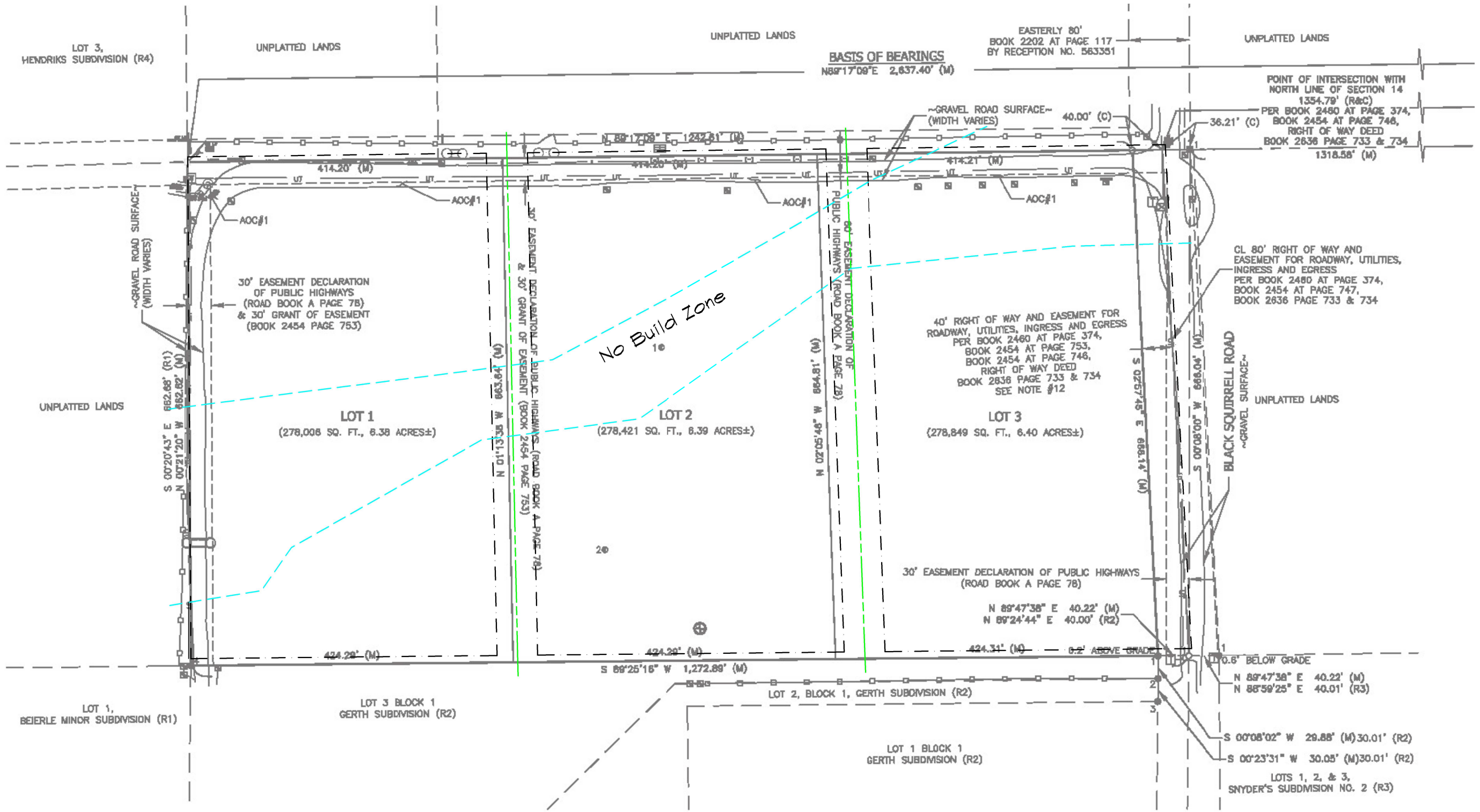
SITE VICINITY MAP

MINOR SUBDIVISION
BLACK SQUIRREL RD
EL PASO COUNTY, CO
CHRISTINE TSCHAMLER

JOB No. 196369

FIG No. 1

DATE: 9-13-2024
REV DATE: 11-26-24



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BASE MAP PROVIDED BY APEX LAND SURVEYING AND MAPPING, LLC

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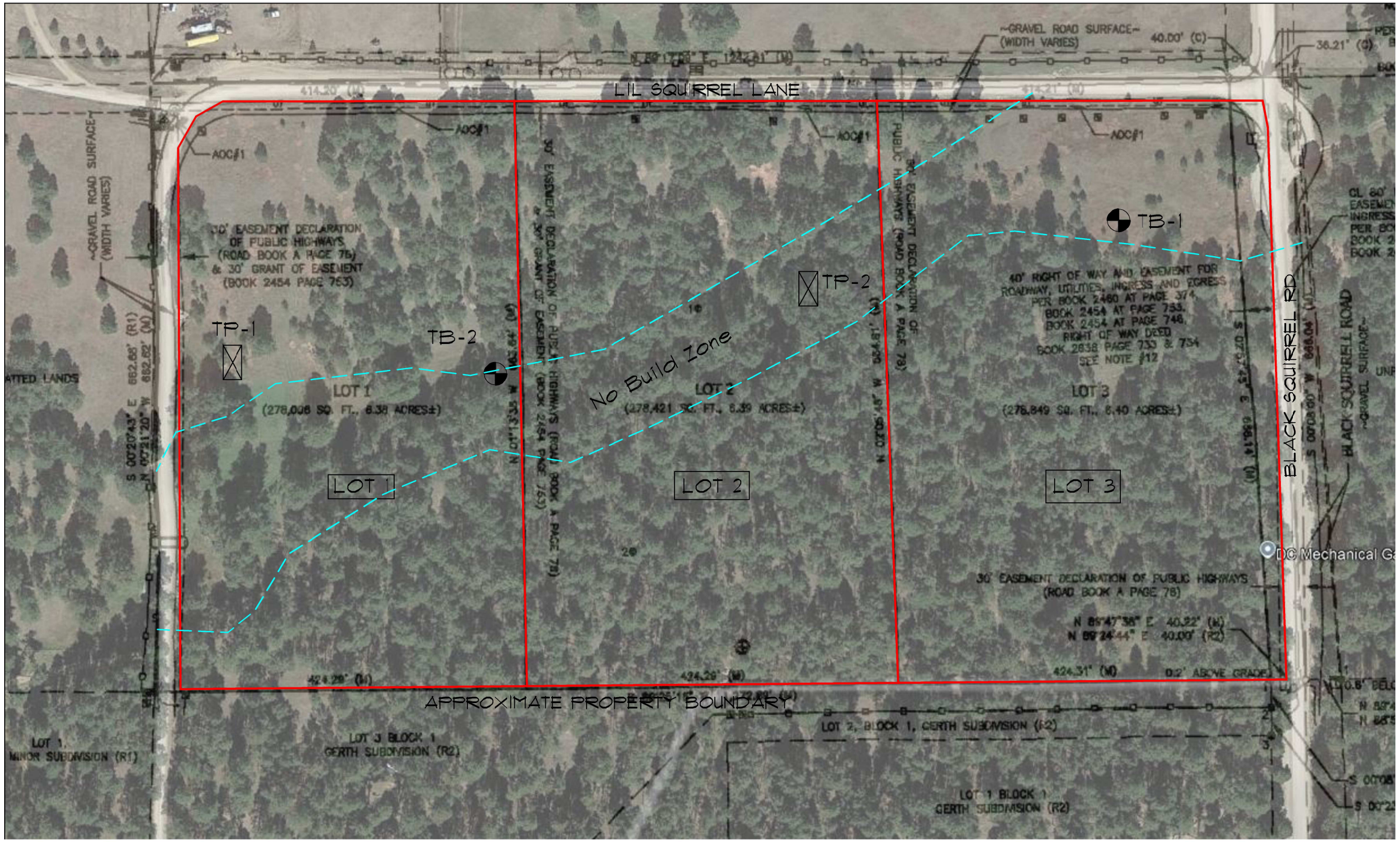
TEAM CHRIS SUBDIVISION
BLACK SQUIRREL RD

EL PASO COUNTY, COLORADO
CHRISTINE TSCHAMLER

ENGINEER:	TM
DRAWN BY:	KZ
CHECKED BY:	TM
ISSUED:	9-13-2024
REVISED: PER REVIEW COMMENTS	11-26-2024

PROPOSED LOT LAYOUT

SHEET No.
FIG-2



DENOTES APPROXIMATE LOCATION OF TEST BORINGS

DENOTES APPROXIMATE LOCATION OF TEST PITS

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ENGINEER:	TM
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ISSUED:	9-13-2024
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PER REVIEW COMMENTS	

TEST BORING AND TEST PIT LOCATIONS

SHEET No.
FIG-3

TEST PIT TP-1

DATE OBSERVED: 5/17/2024

SOIL DESCRIPTION	DEPTH (FT)	SYMBOL	SOIL TYPE
0 - 1.0 FT SANDY CLAY (BLOCKY, MODERATE)			4
1.0 - 8.0 FT SANDY CLAY (BLOCKY, WEAK)	2ft		4A
	4ft		4A
	6ft		
	8ft		

TEST PIT TP-2

DATE OBSERVED: 5/17/2024

SOIL DESCRIPTION	DEPTH (FT)	SYMBOL	SOIL TYPE
0 - 1.5 FT CLAY (ORGANIC) (BLOCKY, WEAK)			4A
1.5 FT - 4.0 FT SILTY CLAY LOAM (BLOCKY, WEAK)	2ft		3A
	4ft		
4.0 FT - 8.0 FT SANDY LOAM (GRANULAR, STRONG)	6ft		2
	8ft		

SOIL DESCRIPTIONS

- SANDY CLAY
- SILTY CLAY LOAM
- SANDY LOAM
- SANDY CLAY (4A)

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ROCKY MOUNTAIN GROUP

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PROFILE PIT LOGS

TEAM CHRIS SUBDIVISION
BLACK SQUIRREL CREEK
EL PASO COUNTY, COLORADO
CHRISTINE TSCHAMLER

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FIG No. 4

DATE 11-26-2024

26 - Elbeth sandy loam, 8 to 15 percent slopes

36 - Holderness loam, 8 to 15 percent slopes

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USDA SOIL SURVEY MAP

MINOR SUBDIVISION
BLACK SQUIRREL RD
EL PASO COUNTY, CO
CHRISTINE TSCHAMLER

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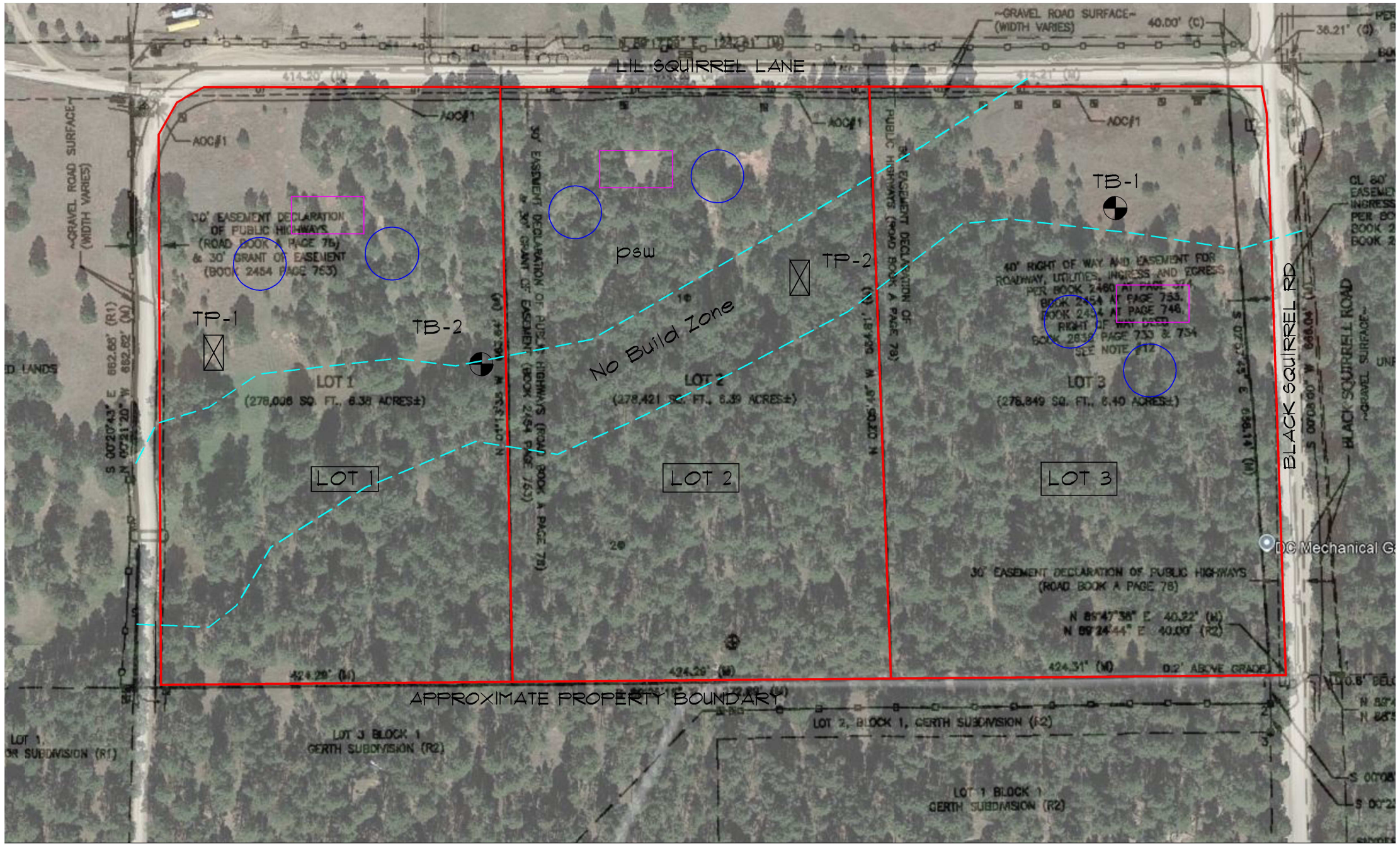
FIG No. 5

DATE: 9-13-2024
REV DATE: 11-26-24



Note, the selected OWTS - Onsite Wastewater Treatment System locations are for illustration only. If the El Paso County Health Department physical setback requirements are met for each lot and the OWTS stay outside the psw areas, there are no additional restrictions on the placement of the individual OWTS.

Denote possible location for residence

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ENGINEER:	TM
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REVISED: PER REVIEW COMMENTS	11-26-2024

SEPTIC SUITABILITY

SHEET No.
FIG-6