

Structural
Geotechnical



Materials Testing
Forensic

SOIL AND GEOLOGY STUDY

**Currently Addressed as: 18050 Quarterhorse Lane
Lot 6, Blk 1, Willow Springs Estates
El Paso County, Colorado**

PREPARED FOR:

**Home Run Residential Inc
710 S. Blaney Rd
Colorado Springs, CO 80929**

JOB NO. 201954

June 8, 2026

**Respectfully Submitted,
RMG Engineers**

**Reviewed by,
RMG Engineers**

A handwritten signature in blue ink that reads "Kelli Zigler".

**Kelli Zigler
Geotechnical Group Director**



**Tony Munger, P.E.
Sr. Geotechnical Proj Mgr | COO**

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1.0 GENERAL SITE AND PROJECT DESCRIPTION

1.1 Project Location

The project lies in the NW¼ of Section 15, Township 11 South, Range 65 West of the 6th Principal Meridian in El Paso County, Colorado. The site is located south and west of the intersection of Table Rock Road and Quarterhorse Lane. The approximate location of the site is shown on the Site Vicinity Map, Figure 1.

1.2 Proposed Land Use and Project Description

Per the El Paso County Assessors website information, the overall site encompasses approximately 10 acres. The proposed site development is to consist of subdividing the site into two lots. The included parcel is:

- **EPC Schedule No. 5115003006**, is currently addressed as 18050 Quarterhorse Lane, with a legal description of Lot 6, Blk 1, Willow Springs Estates. The site contains a single-family residence, well, and septic system.

It is our understanding that the parcel is to be subdivided into two (2) lots within the proposed new Willow Springs Estates, Filing No. 2. The two lots are to be 5.0 acres each. Access is currently provided to the existing residence from Quarterhorse Lane. Access to the new lot is also to be from Quarterhorse Lane. The existing residence, well and septic are to remain on proposed Lot 2. The proposed Lot 1 is to contain a new single-family residence, well and septic once the subdivision is approved. Preliminary grading plans for proposed Lot 1, were not available at the time of this study, but it is our understanding that grading is anticipated to be minor, with construction occurring near the existing grades. The Proposed Lot Layout, Figure 2, outlines the proposed subdivision and the general boundaries of our investigation.

This report presents the results of our geologic evaluation and provides our conclusions and recommendations regarding the geologic conditions which could potentially affect the proposed development.

2.0 QUALIFICATIONS OF PREPARERS

This *Soil and Geology Study* was prepared by a professional geologist as defined by Colorado Revised Statutes section 34-1-201(3) and by a qualified geotechnical engineer as defined by policy statement 15, "Engineering in Designated Natural Hazards Areas" of the Colorado State Board of Registration for Professional Engineers and Professional Land Surveyors. (Ord. 96-74; Ord. 01-42)

The principle investigators for this study are Kelli Zigler, P.G. and Tony Munger, P.E. Ms. Zigler is a Professional Geologist as defined by State Statute (C.R.S 34-1-201) with over 26 years of experience in the geological and geotechnical engineering field. Ms. Kelli Zigler holds a B.S. in Geology from the University of Tulsa. Ms. Zigler has supervised and performed numerous geological and geotechnical field investigations throughout Colorado.

Tony Munger is a licensed professional engineer with over 26 years of experience in the construction engineering (residential) field. Mr. Munger holds a Bachelor of Science in Architectural

Engineering from the University of Wyoming. Mr. Munger has supervised and performed numerous geological and geotechnical field investigation programs in Colorado.

3.0 STUDY OVERVIEW

The purpose of this investigation is to characterize the general geotechnical and geologic site conditions, and present our opinions of the potential effect of these conditions on the proposed development to include a minor subdivision consisting of one new single-family residential lots within the proposed new development. As such, our services exclude evaluation of the environmental and/or human, health-related work products or recommendations previously prepared, by others, for this project.

This study has been prepared in accordance with the requirements outlined in the El Paso County Land Development Code (LDC) specifically Chapter 8 last updated August 27, 2019 applicable sections include 8.4.8 and 8.4.9. and the Engineering Criteria Manual (ECM), specifically Appendix C last updated July 9, 2019.

This report presents the findings of the study performed by RMG relating to the geotechnical and geologic conditions of the above-referenced site. Revisions and modifications to the conclusions and recommendations presented in this report may be issued subsequently by RMG based upon additional observations made during grading and construction which may indicate conditions that require re-evaluation of some of the criteria presented in this report.

3.1 Scope and Objective

The scope of this study included a physical reconnaissance of the site and a review of pertinent, publically available documents including (but not limited to) previous geologic and geotechnical reports, overhead and remote sensing imagery, published geology and/or hazard maps, design documents, etc. Our services exclude the evaluation of the environmental and/or human, health-related work products or recommendations previously prepared, by others, for this project.

The objectives of our study are to:

- Identify geologic conditions that are present on this site,
- Analyze the potential negative impacts of these conditions on the proposed site development,
- Analyze the potential negative impacts to the surrounding properties and/or public services resulting from the proposed site development as it relates to existing geologic hazards,
- Provide our opinion of suitable techniques that may be utilized to mitigate the potential negative impacts identified herein.

This report presents the findings of the study performed by RMG relating to the geologic conditions of the above-referenced site. Revisions and modifications to this report may be issued subsequently by RMG, based upon:

- Additional observations made during grading and construction which may indicate conditions that require re-evaluation of some of the criteria presented in this report,

- Review of pertinent documents (development plans, plat maps, drainage reports/plans, etc.) not available at the time of this study,
- Comments received from the governing jurisdiction and/or their consultants subsequent to submission of this document.

3.2 Site Evaluation Techniques

The information included in this report has been compiled from:

- Field reconnaissance
- Geologic and topographic maps
- Review of selected publicly available, pertinent engineering reports by RMG and others
- Available aerial photographs
- Exploratory soil test borings and test pits by RMG
- Laboratory testing of representative site soil and rock samples
- Geologic research and analysis
- Site development plans prepared by others

Geophysical investigations were not considered necessary for characterization of the site geology. Monitoring programs, which typically include instrumentation and/or observations for changes in groundwater, surface water flows, slope stability, subsidence, and similar conditions, are not known to exist and were considered applicable for the scope of this report.

3.3 Previous Studies and Field Investigations

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

1. *Wastewater Study, Currently Addressed as 18050 Quarterhorse Lane, Lot 6, Blk 1, Willow Springs Estates, EPC Schedule No. 5115003006, El Paso County, Colorado*, prepared by RMG Engineers, dated June 8, 2026, Job No. 201954.
2. *Soils Report for J.D. Mc Grath Construction, Job #5027, Lot 6, Block 1, Willow Springs Estates Subdivision, Quarterhorse Lane, El Paso County, Colorado*, prepared by Front Range Geotechnical, Inc., dated August 4, 1997.

Additionally, the findings, conclusions and recommendations contained in the reports referenced within Appendix A were considered during the preparation of this report.

3.4 Additional Documents

Additional documents reviewed during the performance of this study are included in Appendix A.

4.0 SITE CONDITIONS

4.1 Existing Site Conditions

The entire subject site is currently maintained and groomed. An existing one-story single-family residence is currently being remodeled and is to remain with the well and septic. No detached structures exist on the site. The site is bound to the north by a 5-acre lot, to the east by Quarterhorse Lane, to the south and west by a gravel driveway that extends west to a 41.4-acre single-family lot that parallels the eastern property boundary.

Topographically, the site consists of flat to very gently rolling hills that generally slope down to the south. A narrow trench, approximately 28 feet wide, 290 feet long, and 2 to 5 feet deep, extends from east to west about 120 feet south of the northern property line on proposed Lot 1. The trench is “open” in the center and does not capture or retain water, but appears to be used to divert surface water.

Vegetation across the site consists of maintained grasses, weeds, and trees. Ponding water was not visible at the surface or within the narrow trench. The elevation difference from the northern property boundary to the southern property boundary is approximately 25 feet for an overall average slope of 16 percent.

4.2 Aerial photographs and remote-sensing imagery

Personnel of RMG reviewed aerial photos available through Google Earth Pro dating back to 1985, and historical photos by historicaerials.com dating back to 1952. The El Paso County assessors reports the home was constructed in 2003. Prior to that, the site was undeveloped vacant land. The long narrow trench appears to have been constructed around the same time frame as the existing residence. Depending of the time of the year and the photo quality, the trench area may temporarily hold water during heavy precipitation events. Since 2003, the site has only undergone minor surficial changes.

5.0 FIELD INVESTIGATION AND LABORATORY TESTING

Once the two-lot subdivision is approved, it is our understanding that proposed Lot 1 is to contain a new single-family residence, well, and On-site Wastewater Treatment System (OWTS).

5.1 Drilling

The subsurface conditions across the site were explored by RMG by drilling two (2) exploratory borings and observing two (2) test pits. The test borings were performed on May 11, 2026 and extended to depths of 20 and 30 feet below the existing ground surface. The test pits were performed by Munson Excavating and observed by RMG on May 28, 2026, and extended to depths of 5 and 8 feet below the existing ground surface. The approximate locations of the test borings and test pits are presented on the Test Boring/Pit Location Plan, Figure 3.

The test borings were drilled with a power-driven, continuous-flight auger drill rig. Samples were obtained during drilling of the test boring in general accordance with ASTM D-1586 and D-3550, utilizing a 2-inch O.D. Split Barrel Sampler and a 2½-inch O.D. California sampler, respectively. An Explanation of Test Boring Logs is presented in Figure 4. The Test Boring Logs are presented in Figure 5.

5.2 Laboratory Testing

The moisture content for the recovered samples was obtained in the laboratory. Grain-size analysis, Atterberg Limits, and Denver Swell/Consolidation tests were performed on selected samples for purposes of classification and to develop pertinent engineering properties. A Summary of Laboratory Test Results is presented in Figure 6. Soil Classification Data is presented in Figure 7. The Denver Swell/Consolidation tests are presented in Figure 8.

5.3 Test Pit Excavations: OWTS Visual and Tactile Evaluation

The two (2) test pits were performed to explore the subsurface soils for the proposed On-site Wastewater Treatment Systems. The number of test pits is in accordance with Regulations of the El Paso County Board of Health, Chapter 8, On-site Wastewater Treatment Systems (OWTS) as required by 8.5.D.3.a. Visual and tactile evaluations were performed in conjunction with this investigation. The soils were evaluated to determine the soil types and structures.

Personnel of RMG performed a soil evaluation utilizing the visual and tactile method for the evaluation of the site soils. TP-1 was excavated to 8 feet and TP-2 was excavated to 5 feet. TP-2 was terminated at 5 feet due to the claystone bedrock, which is considered a limiting layer. The test pit locations were randomly selected to obtain soil information on proposed new Lot 1 for the future residential construction. Currently no new development is proposed for Lot 2.

Evidence of seasonally fluctuating surface water and/or perched groundwater was not observed in the test pit excavations. Additional information is provided in Section 9.0, On-site Disposal of Wastewater. The test pit logs and soil descriptions are presented in the *Wastewater Study*, included in Appendix B.

5.4 Groundwater

Groundwater was not encountered in the test borings at the time of drilling. Additionally, neither groundwater nor evidence of subsurface water were observed in the test pits.

6.0 SOIL, GEOLOGY, AND ENGINEERING GEOLOGY

6.1 Geologic Conditions

The site physiographically lies in the western portion of the Great Plains Physiographic Province south of the Palmer Divide. The fault marks the boundary between the Great Plains Physiographic and Southern Rocky Mountain Province. The site exists within the southeastern edge of a large structural feature known as the Denver Basin. The bedrock underlying the site consists of the Dawson Formation. Overlying this formation are unconsolidated deposits of residual soils and

alluvial soils of the upper Cretaceous and Paleocene Age. The residual soils are produced by the in-situ action of weathering of the bedrock.

6.2 Subsurface Soil Conditions

The subsurface soils encountered in the test borings performed by RMG were visually classified using the Unified Soil Classification System (USCS) as silty to clayey sandstone and sandy clay.

The subsurface soils encountered in the test pit excavations were classified using the United States Department of Agriculture (USDA) soil classification system. The on-site soils classified as sandy clay and sandy clay loam.

6.3 Bedrock Conditions

Bedrock was encountered in both of the test borings and in both of the test pits. In general, the bedrock (as defined by Colorado Geologic Survey) beneath the site is considered to be part of the Dawson Formation which consists of about half silty sandstone and conglomerate, and half interbedded layers of shale, claystone, and siltstone. The Dawson formation is thick-bedded to massive, generally light colored arkose, pebbly, and pebble conglomerate. The sandstones are poorly sorted with high clay contents. The sandstone is generally semi-permeable, somewhat well drained, and has good foundation characteristics. The claystone is generally non-permeable, not well drained, and has poor foundation characteristics. The Dawson formation is generally considered a restrictive layer for OWTS.

Based on our drilling operations, the sandstone was encountered at depths of 8 and 9.5 feet below grade. The sandstone may be encountered in a basement foundation excavation for the future residence, and is considered generally excavatable with standard operating equipment.

6.4 U.S. Soil Conservation Service

The U.S. Soil Conservation Service along with USDA has identified the soils on the property as:

- **68 – Peyton-Pring complex, 3 to 8 percent slopes.** The Peyton-Pring complex was mapped by the USDA to encompass the entire property. Properties of the Peyton-Pring complex include, well-drained soils, depth of the water table is anticipated to be greater than 6.5 feet, runoff is anticipated to be low, frequency of flooding and ponding is none, and landforms include hills.

The USDA Soil Survey Map is presented below.



6.5 General Geologic Conditions

Based on our field observations and review of relevant geologic maps, a geologic map was prepared which identifies the geologic conditions affecting the development. The geologic units present on the site are presented in the Engineering and Geology Map, Figure 9.

The site generally consists of sandy clay overlying sandstone and claystone of the Dawson Formation. The sandy clay and claystone are generally semi-permeable, not well drained, and have poor foundation characteristics. The sandstone and claystone will likely be encountered across the site at various depths and is considered less permeable than the sandy clay, and not as well drained. The sandstone is generally suitable for foundations, but the claystone typically is not. The geologic units mapped at the site were as follows:

- ***Tkda₅ – Dawson Formation*** – sandstone, known to contain interbedded seams of expansive sandy claystone. The sandstone was encountered in the test borings and is expected to be encountered at various depths across the site.
- ***da – disturbed area*** – areas that are no longer in their native state.

6.6 Structural Features

Structural features such as schistosity, folds, zones of contortion or crushing, joints, shear zones or faults were not observed on the site, or in the surrounding area.

6.7 Surficial (Unconsolidated) Deposits

Swamp accumulations, sand dunes, marine terrace deposits, talus accumulations, creep, or slope wash were not observed on the site. Slump and slide debris were also not observed on the site. The alluvial deposits are non-marine terrace deposits that have been reworked from conglomerates in the Dawson Formation up-valley along nearby creeks.

6.8 Groundwater

Groundwater, perched water, or indications of subsurface water were not encountered in the test borings or test pits. A basement foundation may be an option for the future residence to be located on Lot 1. RMG understands that a year-long groundwater monitoring program is typically advisable, to verify separation from the bottom of foundations to the underlying subsurface water. However, given the lack of groundwater or significantly elevated moisture conditions in either of the test borings and test pits, we anticipate adequate separation such that typical seasonal groundwater fluctuations will not encroach within the generally recommended 3- to 4-foot separation zone.

6.9 Engineering Geology

One environmental engineering unit is discussed below:

- **1A** – Stable alluvium, colluvium and bedrock on flat to gentle slopes (0 to 5%)

The engineering and geology is presented in the Engineering and Geology Map, Figure 9.

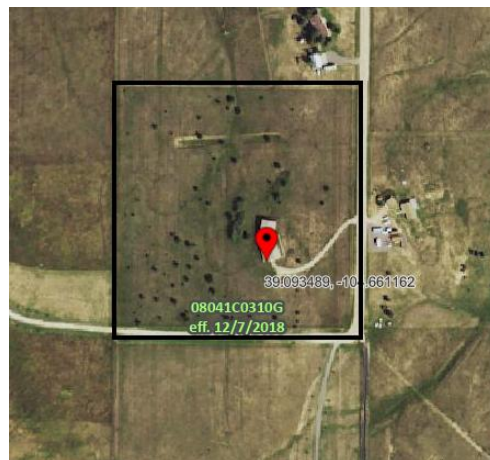
6.10 Features of Special Significance

Features of special significance such as accelerated erosion, (advancing gully head, badlands, or cliff reentrants) were not observed on the property. Features indicating settlement or subsidence such as fissures, scarplets, and offset reference features were not observed on the property or surrounding areas.

Features indicating creep, slump, or slide masses in bedrock and surficial deposits were also not observed on the site.

6.11 Flooding and Surface Drainage

Based on our review of the Federal Emergency Management Agency (FEMA) Community Panel No. 08041C0310G and the online ArcGIS Pikes Peak Regional Floodplain Map, the entire site lies outside the FEMA Floodway. The FEMA Map is presented below.



7.0 ECONOMIC MINERAL RESOURCES

Under the provision of House Bill 1529, it was made a policy by the State of Colorado to preserve for extraction commercial mineral resources located in a populous county. Review of the *El Paso Aggregate Resource Evaluation Map, Master Plan for Mineral Extraction, Map 1* indicates the site is identified as stream terrace deposits containing sand, gravel, silt, and clay preserved on benches or broad flat to sloping areas adjacent to streams. Extraction of the terrace deposits is not considered to be economical on the 10-acre site, as compared to materials available elsewhere within the county.

According to the *Evaluation of Mineral and Mineral Fuel Potential of El Paso County State Mineral Lands*, the site is mapped within the Denver Basin Coal Region. However, the area of the site has been mapped "Poor" for coal resources, no active or inactive mines have been mapped in the area of the site. No metallic mineral resources have been mapped on the site.

8.0 IDENTIFICATION AND MITIGATION OF POTENTIAL GEOLOGIC CONDITIONS

The El Paso County Engineering Criteria Manual recognizes and delineates the difference between hazards and constraints. A *geologic hazard* is one of several types of adverse geologic conditions capable of causing significant damage or loss of property and life. Geologic hazards are defined in Section C.2.2 Sub-section E.1 of the ECM. A *geologic constraint* is one of several types of adverse geologic conditions capable of limiting or restricting construction on a particular site. Geologic constraints are defined in Section C.2.2 Sub-section E.2 of the ECM (1.15 Definitions of Specific Terms and Phrases). The following geologic conditions were considered in the preparation of this report, and are not to pose a significant risk to the proposed development:

- Avalanches
- Debris Flow-Fans/Mudslides
- Floodway
- Ground Subsidence
- Landslides
- Rockfall
- Steeply Dipping Bedrock
- Shallow Groundwater
- Unstable or Potentially Unstable Slopes
- Landfill

The following section presents the geologic conditions that have been identified on the property:

8.1 Expansive Soils/Bedrock – *constraint*

Clay soils were encountered in both the test borings and test pits performed for this investigation. The soils on-site are derived from the Dawson sandstone formation, which is known to contain interbedded seams of expansive materials possessing low to high swell potential. Sandy clay was encountered at the surface in both of the test borings and test pits. Bedrock was encountered bedrock at depths of approximately 8 to 9.5 feet below the surface in our test borings. Expansive soils and

bedrock are commonly encountered and readily mitigated with typical construction practices common to this region of El Paso County, Colorado.

Mitigation

The test borings were performed in random locations across the site to obtain preliminary information for the proposed lot. Once the subdivision is approved, a building-specific subsurface soil investigation is to be performed within the final footprint of the proposed new structure(s) on the new Lot 1 to provide foundation design and construction recommendations.

Areas of expansive soils and bedrock are expected to be encountered at depths that will affect new foundations. Expansive soils or bedrock beneath the foundations will require mitigation. The most common mitigation for expansive materials in this region is overexcavation of the soils below the proposed foundations and replacement with structural fill. Overexcavation depths of 3 to 4 feet below foundation are anticipated for the expansive materials, though deeper overexcavation may be recommended at the time of the building-specific investigation(s).

Granular, non-expansive soils are most commonly used for the replacement structural fill. Moisture-conditioning and recompacting the on-site clays (if desired) may also be considered for use as structural fill, but may result in differing overexcavation depths and foundation design parameters. Floor slabs bearing directly on expansive materials should be expected to experience a higher degree of movement. Overexcavation and replacement below the floor slabs has also been successful in reducing slab movement.

This investigation is to provide preliminary recommendations prior to the building-specific subsurface soil investigation for Lot 1. Once the home location has been selected, the final determination of mitigation alternatives and foundation design criteria is to be included with the building-specific subsurface soil investigations for the structure(s) to be located on the new Lot 1. Provided that appropriate mitigations and/or foundation design adjustments are implemented, the presence of expansive soils or bedrock is not considered to pose a risk to the proposed residence.

8.2 Compressible Soils - *constraint*

Compressible soils include both compressive and collapsible soils. Compressible soils are prone to volumetric change when subjected to a mechanical load. Collapsible soils are metastable, in that they are prone to volumetric change (collapse) on wetting and loading. The surficial soils are known to exhibit these characteristics. A spread footing foundation is anticipated for the proposed future residence on the new Lot 1. The tests borings performed for this investigation encountered surficial clay soils which possess moderate to high compressibility potential. The sandy clay will likely be encountered within the foundation excavation for the future residence on the new Lot 1.

Mitigation

The sandy clay is expected to be encountered beneath the new single-family residential foundation and mitigation will be required. The most common mitigation for compressible materials in this region is overexcavation of the soils below the proposed foundations and replacement with structural fill. Overexcavation of the on-site sandy clay soils and recompaction of 3 to 4 feet is already anticipated for mitigation of the expansive soils/bedrock. If implemented, that mitigation will also address the compressibility potential of the on-site soils.

This investigation is to provide preliminary recommendations prior to the building-specific subsurface soil investigation for Lot 1. Once the home location has been selected, the final determination of mitigation alternatives and foundation design criteria is to be included with the building-specific subsurface soil investigations for the structure(s) to be located on the new Lot 1. Provided that appropriate mitigations and/or foundation design adjustments are implemented, the presence of compressible soils is not considered to pose a risk to the proposed residence.

8.3 Undocumented/Uncontrolled Fill - *constraint*

Fill soils resulting from the original land shaping of the narrow open trench, as well as exterior backfill for the existing residence and septic system may be present on the site.

Mitigation

No improvements are currently proposed on the new Lot 2. Exterior backfill from the existing residence and septic system are not anticipated to extend into the new Lot 1, and should not be encountered in the new construction. Selection of the location of the future residence (and any other future structures on the new Lot 1) should take into consideration the existing trench. The new structures should allow for adequate separation from the trench to avoid redirecting surface water towards the new foundation(s). As such, we recommend that a “No Build Zone” be established around the trench until further drainage studies are completed and/or additional grading is completed to reroute surface water to a location that will not impact existing or proposed structures. This “No Build Zone” is shown on the Engineering and Geology Map, Figure 9.

Prior to conducting any investigation or study within the trench area, it should be determined whether any portion of the trench is located within or near the Franktown Parker FPE-4 Reservoir property or associated facilities, as the trench feature was not depicted on the topographic maps reviewed.

8.4 Faults and Seismicity - *hazard*

Based on review of the Earthquake and Late Cenozoic Fault and Fold Map Server provided by CGS located at <http://dnrwebmapgdev.state.co.us/CGSOnline/> and the recorded information dating back to November of 1900, Colorado Springs has not experienced a recorded earthquake with a magnitude greater than 1.6 during that time period. The nearest recorded earthquakes over 1.6 occurred in December of 1995 in Manitou Springs, which experienced magnitudes ranging between 2.8 to 3.5. Additional earthquakes over 1.6 occurred between 1926 and 2001 in Woodland Park, which experienced magnitudes ranging from 2.7 to 3.3. Both of these locations are in the vicinity of the Ute Pass Fault, which is greater than 15 miles from the subject site.

Earthquakes felt at this site will most likely result from minor shifting of the granite mass within the Pikes Peak Batholith, which includes pull from minor movements along faults found in the Denver basin. It is our opinion that ground motions resulting from minor earthquakes may affect structures (and the surrounding area) at this site if minor shifting were to occur.

Mitigation

The Pikes Peak Regional Building Code, 2023 Edition, indicates maximum considered earthquake spectral response accelerations of 0.183g for a short period (S_s) and 0.056g for a 1-second period (S_1). Based on the results of our experience with similar subsurface conditions, we recommend the

site be classified as Site Class D, with average shear wave velocities ranging from 2,500 to 5,000 feet per second for the materials in the upper 100 feet.

8.5 Radon - *constraint*

Radon is a gas that can move freely within the soil and air but can become trapped in structures constructed on the soil. Radon is a byproduct of the natural decay of uranium and radium. Trace amounts of radioactive nuclides are common in the soils and bedrock that underlie this region and site as well as the majority of Colorado.

"Radon Act 51 passed by Congress set the natural outdoor level of radon gas (0.4 pCi/L) as the target radon level for indoor radon levels.

El Paso County has an EPA assigned Radon Zone of 1. A radon zone of 1 predicts an average indoor radon screening level greater than 4 pCi/L, which is above the recommended levels assigned by the EPA. Eastern Colorado is located in a high risk area of the country. *The EPA recommends you take corrective measures to reduce your exposure to radon gas.*

Most of Colorado is generally considered to have high levels of radon gas, based on the information provided at: http://county-radon.info/CO/El_Paso.html. There is not believed to be unusually hazardous levels of radon from naturally occurring sources at this site.

Mitigation

Radon hazards are best mitigated at the building design and construction phases. Providing increased ventilation of basements, crawlspaces, creating slightly positive pressures within structures, and sealing of joints and cracks in the foundations and below-grade walls can help mitigate radon hazards. Passive radon mitigation systems are also available.

Passive and active mitigation procedures are commonly employed in this region to effectively reduce the buildup of radon gas. Measures that can be taken after the residence is enclosed during construction include installing a blower connected to the foundation drain and sealing the joints and cracks in concrete floors and foundation walls. If the occurrence of radon is a concern, it is recommended that the residence be tested after they are enclosed and commonly utilized techniques are in place to minimize the risk.

9.0 ON-SITE DISPOSAL OF WASTEWATER

It is our understanding that On-site Wastewater Treatment Systems (OWTS) is proposed for the future residence on the new Lot 1. The existing residence, well, and septic system on the new Lot 2 are to remain. The new Lot 1 was evaluated by observing two (2) test pits across the lot. The Test Pit Logs are presented in the *Wastewater Study* included in Appendix B.

9.1 Subsurface Materials

The subsurface materials encountered in the test pit excavations were classified using Table 10-1 Soil Treatment Area Long-term Acceptance Rates from the EPCDHE Chapter 8, OWTS

Regulations and the USDA Soil Structure Shape and Grade. The materials were grouped into a two soil types to include the following general categories:

- Sandy Clay (Soil Type 4)
- Sandy Clay Loam (Soil Type 3)

Groundwater and bedrock are considered limiting layers. Neither groundwater nor redox (indications of the fluctuation of water within the upper 8 feet) were observed in the test pits. Clay and claystone bedrock were encountered in both of the test pits. The long term acceptance rate (LTAR) associated with the most restrictive soils observed (claystone) in the test pits was 0.20 gallons per day per square foot (gpd/sf) for the sandy clay (Soil Type 4). Additional discussions based on our site visit is discussed in **5.3 Test Pit Excavations: OWTS Visual and Tactile Evaluation**.

Additionally, based on the depth to the limiting layer (bedrock) (at a depths of 5 to 8 feet below the existing ground surface), the maximum depth of the OWTS components may be limited and/or mound systems (above finished ground surface) may be required.

9.2 Treatment Areas

Treatment areas at a minimum must achieve the following:

- The treatment areas must be 4 feet above groundwater and/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, amended May 23, 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 lots are laid out to ensure that the proposed OWTS does not fall within any restricted areas, (e.g. utility easements, right of ways, No Build Areas). Based on our observations, the parcel has a minimum of two locations for the OWTS on each lot.

Contamination of surface and subsurface water resources should not occur provided the OWTS is installed according to the El Paso County Guidelines and property maintained.

In summary, it is our opinion the site is suitable for individual on-site wastewater treatment systems within the cited limitations. It should be noted that the LTAR values stated above are for the test pits in the locations performed only, for the purpose of demonstrating suitability of the proposed systems. The final OWTS systems shall be designed based on an LTAR determined at the time of the OWTS Site Evaluation. This does not constitute an OWTS design.

Based on the soils encountered in the test pits and the limiting layers encountered, an engineered OWTS design is anticipated to be required for the new Lot 1. In addition, if the existing septic system on the new Lot 2 is replaced in the future, it is likely it will also have to be an engineered system based on the current regulations for evaluation and design of an OWTS.

10.0 BEARING OF GEOLOGIC CONDITIONS UPON PROPOSED DEVELOPMENT

Geologic hazards (as described in Section 8.0 of this report) that were found to be present at this site include radon and faults/seismicity. Geologic constraints (also as described in section 8.0 of this report) include expansive soils/bedrock and compressible soils. A “No Build Zone” is recommended for the trench area on Lot 1. It is our opinion that the existing geologic and engineering conditions can be satisfactorily mitigated through proper engineering and design contraction practices and avoidance when deemed necessary.

11.0 ADDITIONAL STUDIES

The findings, conclusions and recommendations presented in this report were provided to evaluate the suitability of the site for future development. Unless indicated otherwise, the test borings, laboratory test results, conclusions and recommendations presented in this report are intended for preliminary use for design and construction.

A building-specific subsurface soil investigation (for the proposed future residence on the new Lot 1, as well as any future detached structures) and a site-specific OWTS Site Evaluation and Design for the future proposed on-site wastewater system(s) will need to be prepared for future development and permitting.

12.0 CONCLUSIONS

Based upon our evaluation of the geologic conditions, it is our opinion that the proposed development is feasible. The geologic conditions identified herein are not considered unusual for the Front Range region of Colorado. Mitigation of geologic conditions is most effectively accomplished by avoidance. However, where avoidance is not a practical or acceptable alternative, geologic conditions should be mitigated by implementing appropriate planning, engineering, and local construction practices.

In addition to the previously identified mitigation alternatives, surface and subsurface drainage systems should be implemented. Exterior, perimeter foundation drains should be installed around below-grade habitable or storage spaces. Surface water should be efficiently removed from the building area to prevent ponding and infiltration into the subsurface soil.

The foundations and floor slabs of the future residence and any proposed detached structures for Lot 1 and 2 should be designed using the recommendations provided in a lot-specific subsurface soil investigations performed for each lot. The lots-specific subsurface soil investigations are to be

performed once the subdivision is approved and prior to obtaining a building permit. In addition, appropriate surface drainage should be established during construction and maintained by the homeowner.

We believe surficial sand soils at this site will classify as Type C materials and the clay soils will classify as Type B materials as defined by OSHA in 29CFR Part 1926, date January 2, 1990. OSHA requires temporary slopes made in Type C materials be laid back at ratios no steeper than 1.5:1 (horizontal to vertical) and slopes made in Type B materials be laid back at ratios no steeper than 1:1 (horizontal to vertical) unless the excavation is shored or braced.

Long term cut slopes in the upper soil should be limited to no steeper than 3:1 (horizontal to vertical). Flatter slopes will likely be necessary should groundwater conditions occur. It is recommended that long term fill slopes be no steeper than 3:1 (horizontal to vertical).

Revisions and modifications to the conclusions and recommendations presented in this report may be issued subsequently by RMG based upon additional observations made during grading and construction which may indicate conditions that require re-evaluation of some of the criteria presented in this report.

It is important for the Owner(s) of these properties read and understand this report, as well as the previous reports referenced above, and to carefully to familiarize themselves with the geologic hazards associated with construction in this area. This report only addresses the geologic constraints contained within the boundaries of the site referenced above.

13.0 CLOSING

This report is for the exclusive purpose of providing geologic hazards information and preliminary geotechnical engineering recommendations. The scope of services did not include, either specifically or by implication, evaluation of wild fire hazards, environmental assessment of the site, or identification of contaminated or hazardous materials or conditions. Development of recommendations for the mitigation of environmentally related conditions, including but not limited to, biological or toxicological issues, are beyond the scope of this report. If the owner is concerned about the potential for such contamination or conditions, other studies should be undertaken.

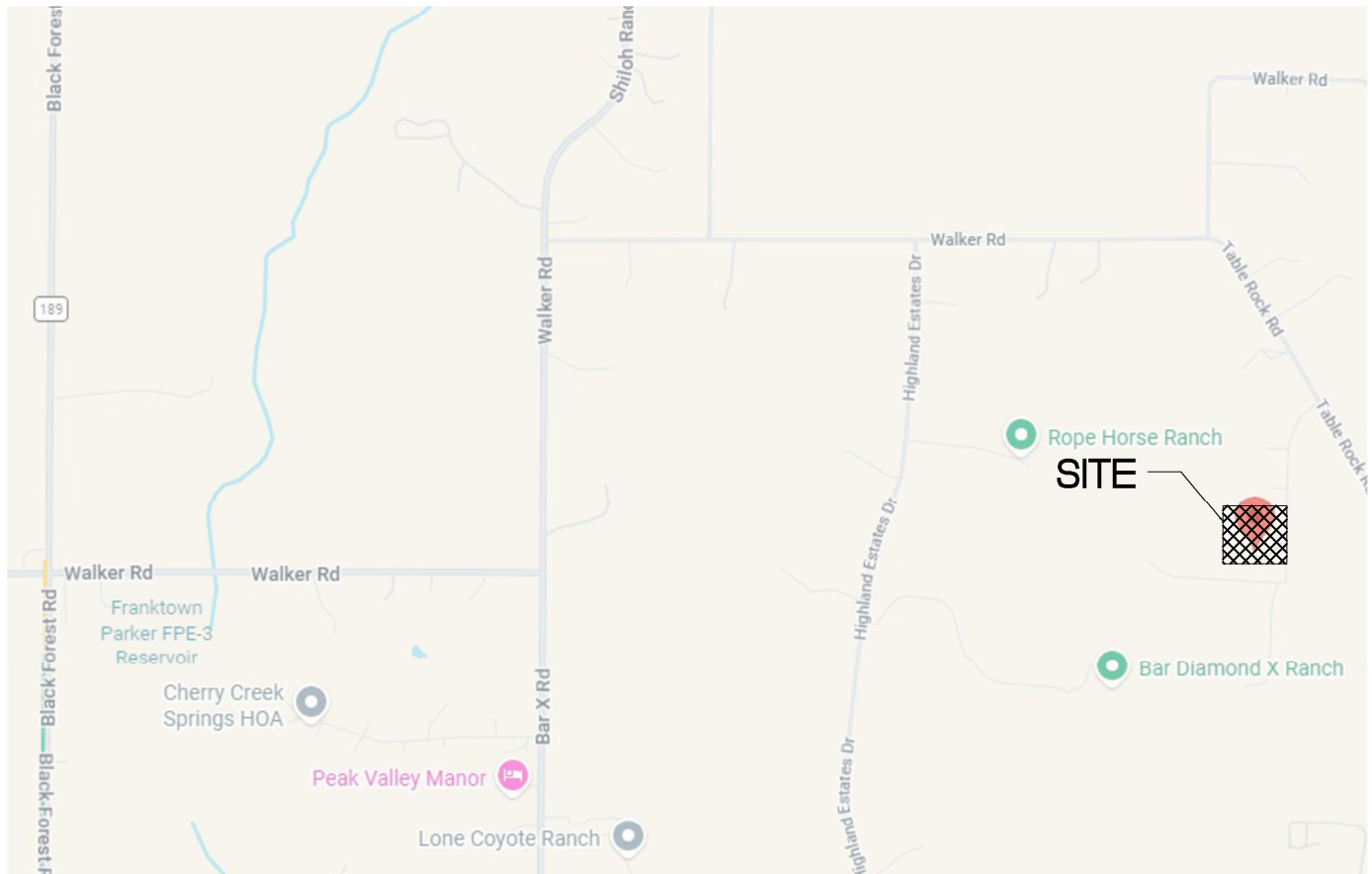
This report has been prepared for **Home Run Residential, Inc.** in accordance with generally accepted geotechnical engineering and engineering geology practices. The conclusions and recommendations in this report are based in part upon data obtained from review of available topographic and geologic maps, review of available reports of previous studies conducted in the site vicinity, a site reconnaissance, and research of available published information, soil test borings, soil laboratory testing, and engineering analyses. The nature and extent of variations may not become evident until construction activities begin. If variations then become evident, RMG should be retained to re-evaluate the recommendations of this report, if necessary.

Our professional services were performed using that degree of care and skill ordinarily exercised, under similar circumstances, by geotechnical engineers and engineering geologists practicing in this or similar localities. RMG does not warrant the work of regulatory agencies or other third parties supplying information which may have been used during the preparation of this report. No warranty,

express or implied, is made by the preparation of this report. Third parties reviewing this report should draw their own conclusions regarding site conditions and specific construction techniques to be used on this project.

If we can be of further assistance in discussing the contents of the report or analysis of the proposed minor subdivision and development, from a geotechnical engineering / geologist point-of-view, please feel free to contact us.

FIGURES



NOT TO SCALE

Structural
Geotechnical



Materials Testing
Forensics

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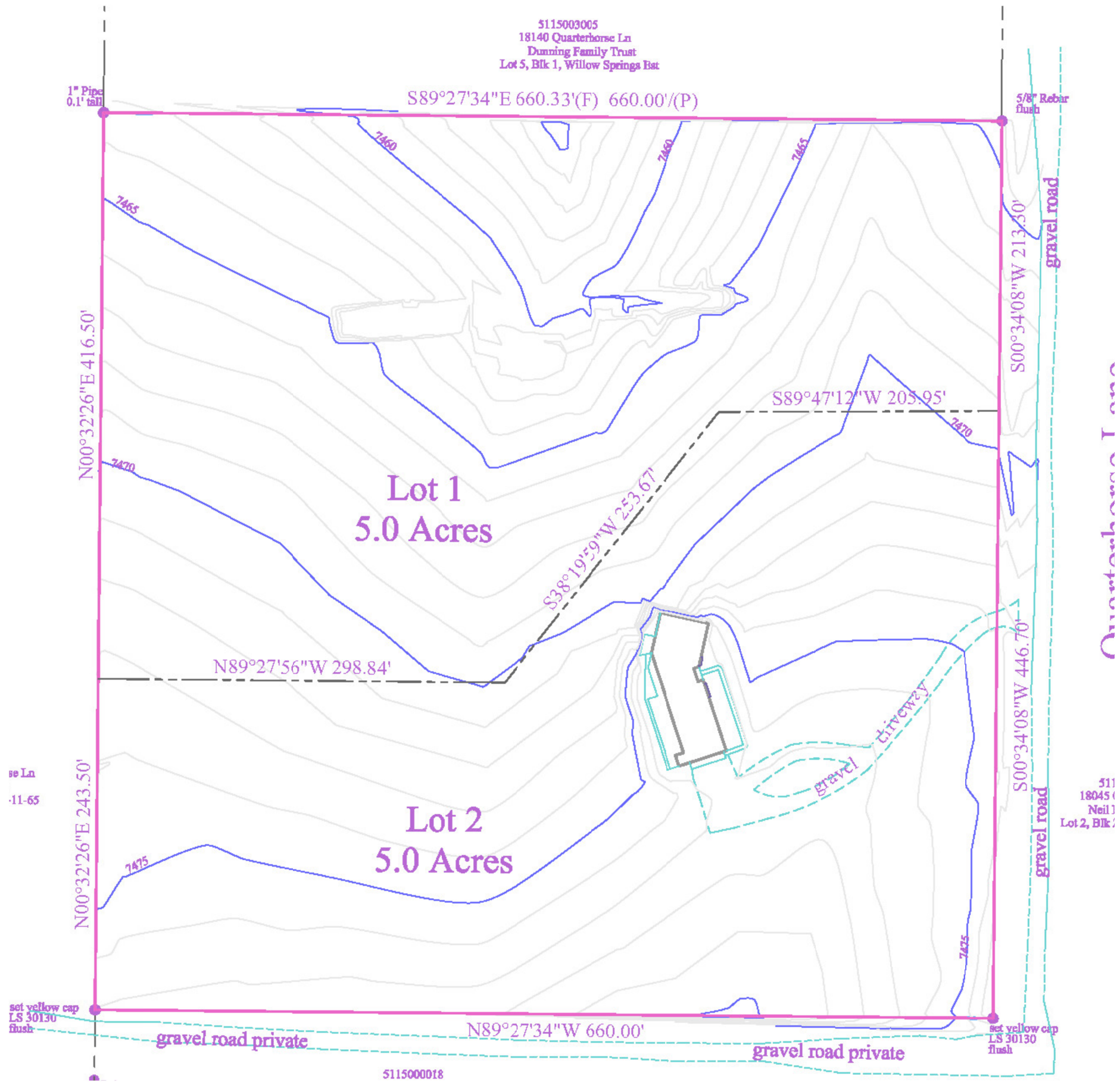
SITE VICINITY MAP

Currently Addressed as: 18050
QUARTERHORSE LANE
LOT 6, LOT 1 WILLOW SPRINGS ESTATES
EL PASO COUNTY, CO
HOME RUN RESIDENTIAL, INC.

JOB No. 201954

FIG No. 1

DATE 6-8-2026



NOT TO SCALE
BASE MAP PROVIDED BY: ALESSI and ASSOCIATES, Inc.

JOB No. 201954

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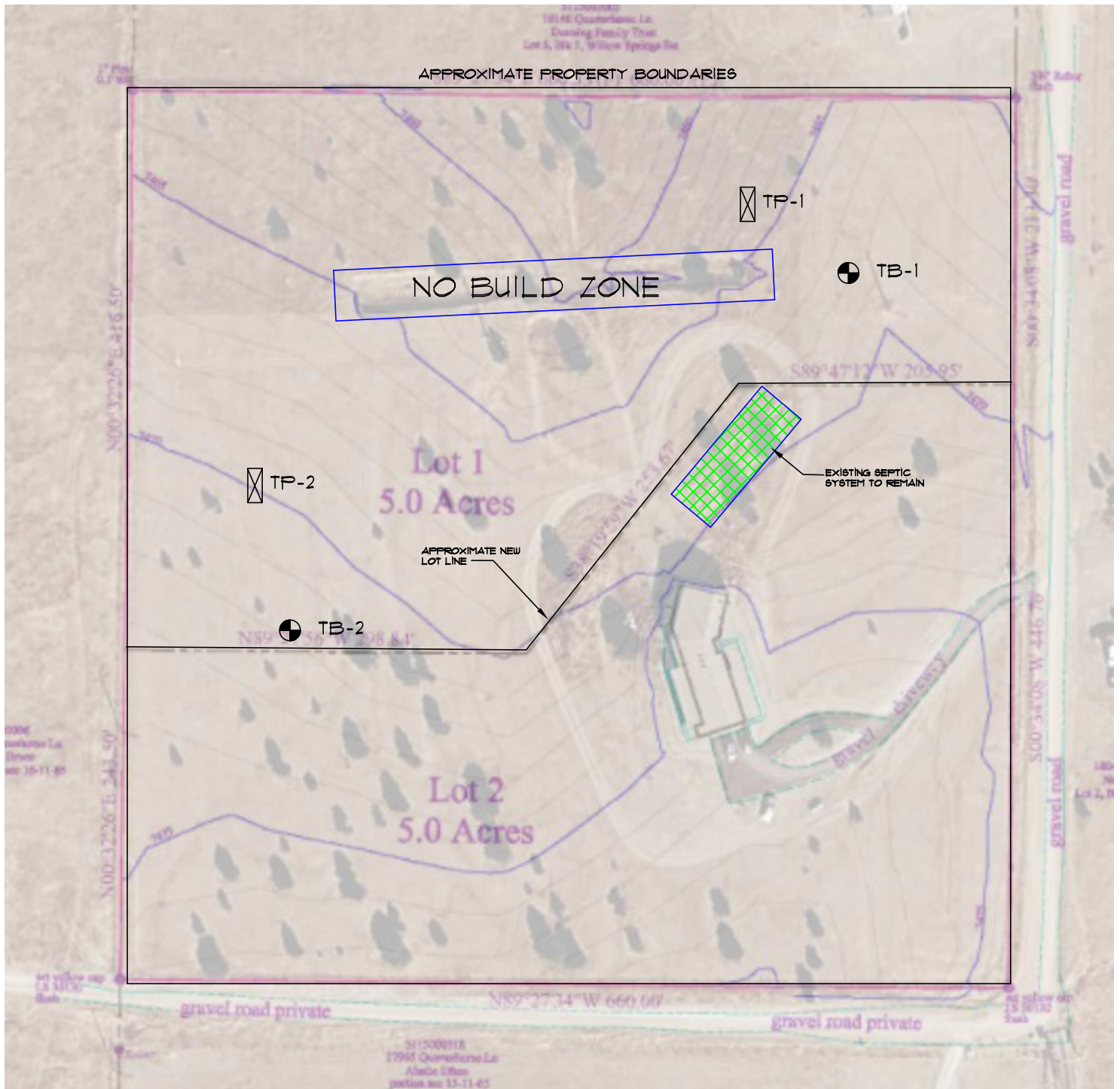
Currently Addressed as: 18050
QUARTERHORSE LANE
LOT 6, LOT 1 WILLOW SPRINGS ESTATES
EL PASO COUNTY, CO
HOME RUN RESIDENTIAL, INC.

ENGINEER: TM
DRAWN BY: KZ
CHECKED BY: TM
ISSUED: 6-8-2026

PROPOSED
LOT LAYOUT

SHEET No.

FIG-2



DENOTES APPROXIMATE
LOCATION OF TEST BORINGS



DENOTES APPROXIMATE
LOCATION OF TEST PITS

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TEST BORING / TEST PIT LOCATION PLAN

Currently Addressed as: 18050
QUARTERHORSE LANE
LOT 6, LOT 1 WILLOW SPRINGS ESTATES
EL PASO COUNTY, CO
HOME RUN RESIDENTIAL, INC.

JOB No. 201954

FIG No. 3

DATE 6-8-2026

SOILS DESCRIPTION



SANDSTONE



SANDY CLAY

UNLESS NOTED OTHERWISE, ALL LABORATORY
TESTS PRESENTED HEREIN WERE PERFORMED BY:
RMG - ROCKY MOUNTAIN GROUP
5085 LIST DRIVE, SUITE 200
COLORADO SPRINGS, COLORADO

SYMBOLS AND NOTES



XX

STANDARD PENETRATION TEST - MADE BY DRIVING A SPLIT-BARREL SAMPLER INTO THE SOIL BY DROPPING A 140 LB. HAMMER 30", IN GENERAL ACCORDANCE WITH ASTM D-1586. NUMBER INDICATES NUMBER OF HAMMER BLOWS PER FOOT (UNLESS OTHERWISE INDICATED).



XX

UNDISTURBED CALIFORNIA SAMPLE - MADE BY DRIVING A RING-LINED SAMPLER INTO THE SOIL BY DROPPING A 140 LB. HAMMER 30", IN GENERAL ACCORDANCE WITH ASTM D-3550. NUMBER INDICATES NUMBER OF HAMMER BLOWS PER FOOT (UNLESS OTHERWISE INDICATED).



FREE WATER TABLE



DEPTH AT WHICH BORING CAVED



BULK DISTURBED BULK SAMPLE



AUG AUGER "CUTTINGS"

4.5

WATER CONTENT (%)

ROCKY MOUNTAIN GROUP

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EXPLANATION OF TEST BORING LOGS

JOB No. 201954

FIGURE No. 4

DATE Jun/08/2026

TEST BORING: 1	DEPTH (FT)	SYMBOL	SAMPLES	BLOWS PER FT.	WATER CONTENT %	TEST BORING: 2	DEPTH (FT)	SYMBOL	SAMPLES	BLOWS PER FT.	WATER CONTENT %
DATE DRILLED: 5/11/26 NO GROUNDWATER ON 5/11/26						DATE DRILLED: 5/11/26 NO GROUNDWATER ON 5/11/26					
CLAY, sandy, brown, stiff to very stiff, moist	5			14	8.5	CLAY, sandy, brown, stiff to very stiff, moist	5			13	8.4
										16	8.8
SANDSTONE, silty to clayey, with gravel, tan, firm to very hard, moist	10			30	10.0	SANDSTONE, silty to clayey, with gravel, tan to gray, hard to very hard, moist	10				
	15			50/10"	6.4		15			50/11"	5.3
	20			50/5"	8.2		20			10/0"	3.8
	25										
	30			50/8"	9.6						

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TEST BORING LOG

JOB No. 201954

FIGURE No. 5

DATE Jun/08/2026

Test Boring No.	Depth	Water Content (%)	Dry Density (pcf)	Liquid Limit	Plasticity Index	% Retained No.4 Sieve	% Passing No. 200 Sieve	Load at Saturation (psf)	% Swell/ Collapse	USCS Classification
1	4.0	8.5	82.2	32	14			1,000	- 2.3	
1	9.0	10.0								
1	14.0	6.4				0.2	35.2			
1	19.0	8.2		34	18					
1	29.0	9.6								
2	2.0	8.4	82.5				72.4	1,000	- 10.8	
2	7.0	8.8								
2	14.0	5.3				3.5	28.5			
2	19.0	3.8		22	9					

ROCKY MOUNTAIN GROUP

Structural
Forensics

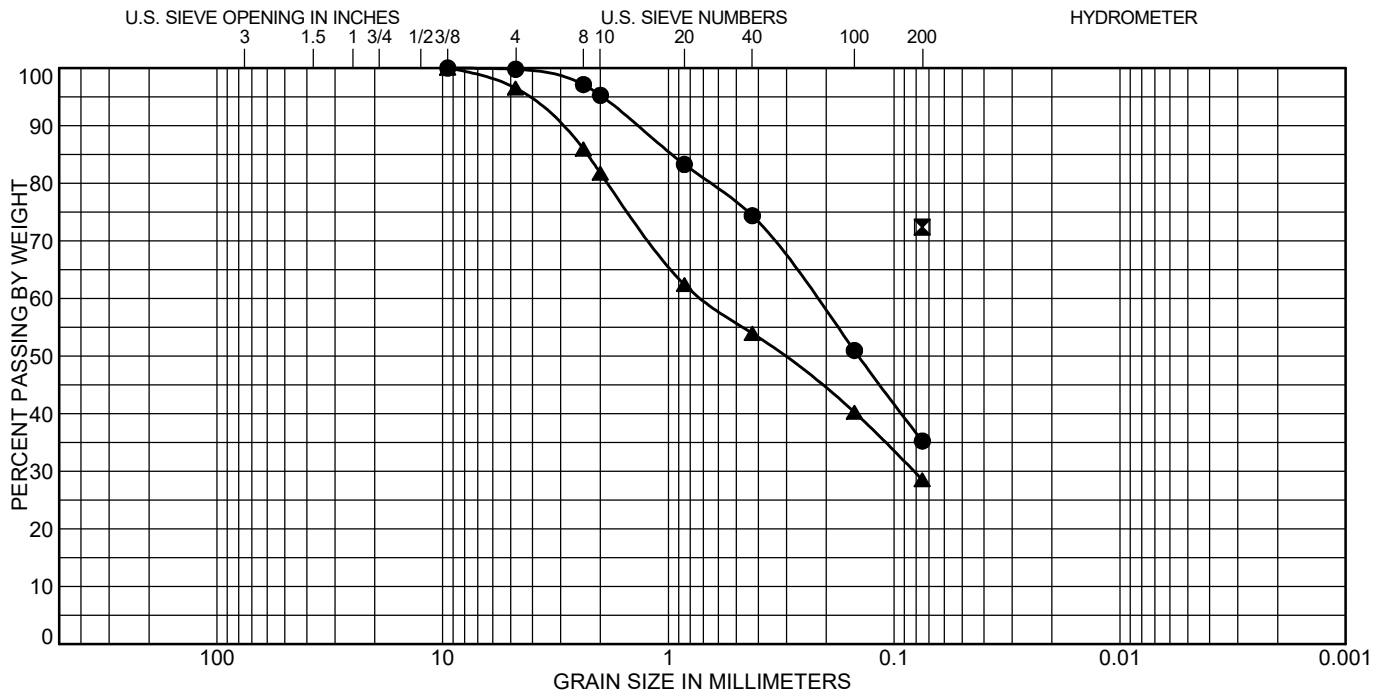


Geotechnical
Materials Testing

SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

SUMMARY OF LABORATORY TEST RESULTS

JOB No. 201954
FIGURE No. 6
PAGE 1 OF 1
DATE Jun/08/2026



Test Boring	Depth (ft)	Classification	LL	PL	PI
● 1	14.0				
⊠ 2	2.0				
▲ 2	14.0				

Test Boring	Depth (ft)	%Gravel	%Sand	%Silt	%Clay
● 1	14.0	0.2	64.5	35.2	
⊠ 2	2.0			72.4	
▲ 2	14.0	3.5	68.0	28.5	

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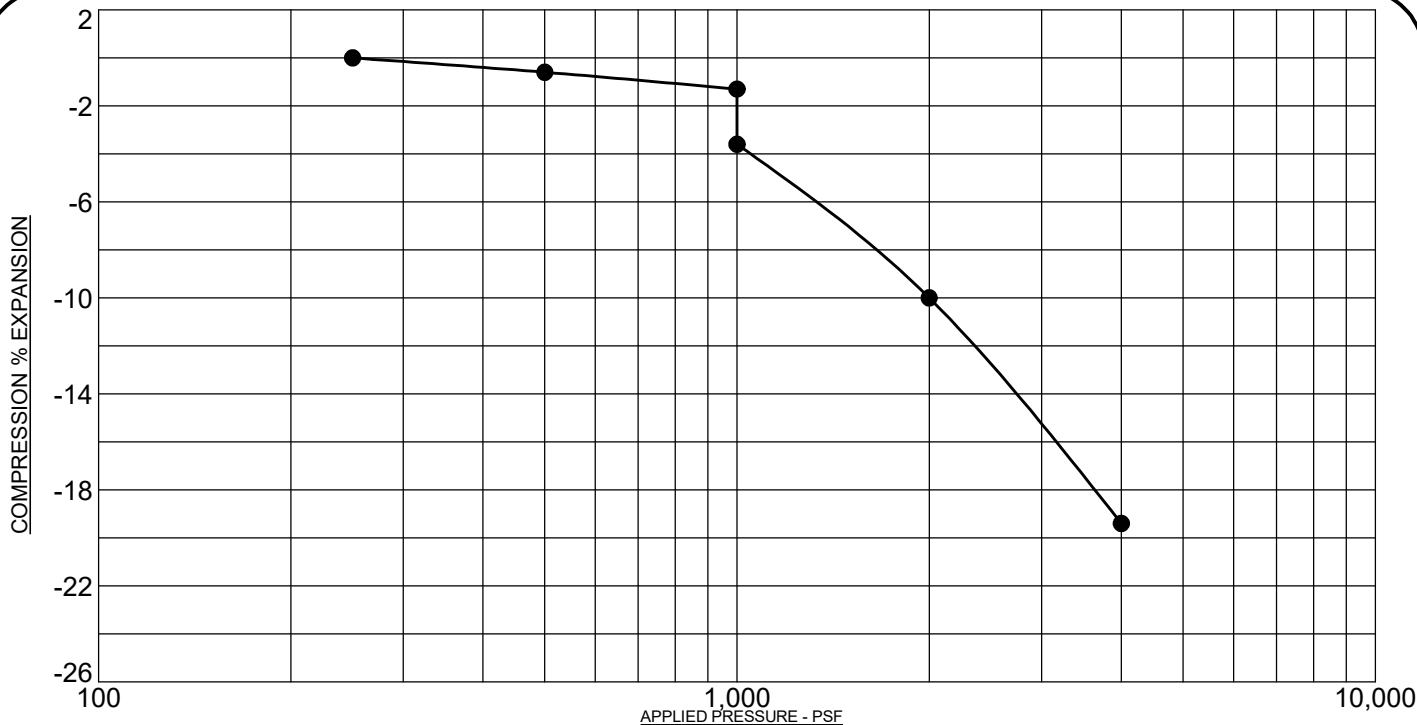
Geotechnical
Materials Testing

SOIL CLASSIFICATION DATA

JOB No. 201954

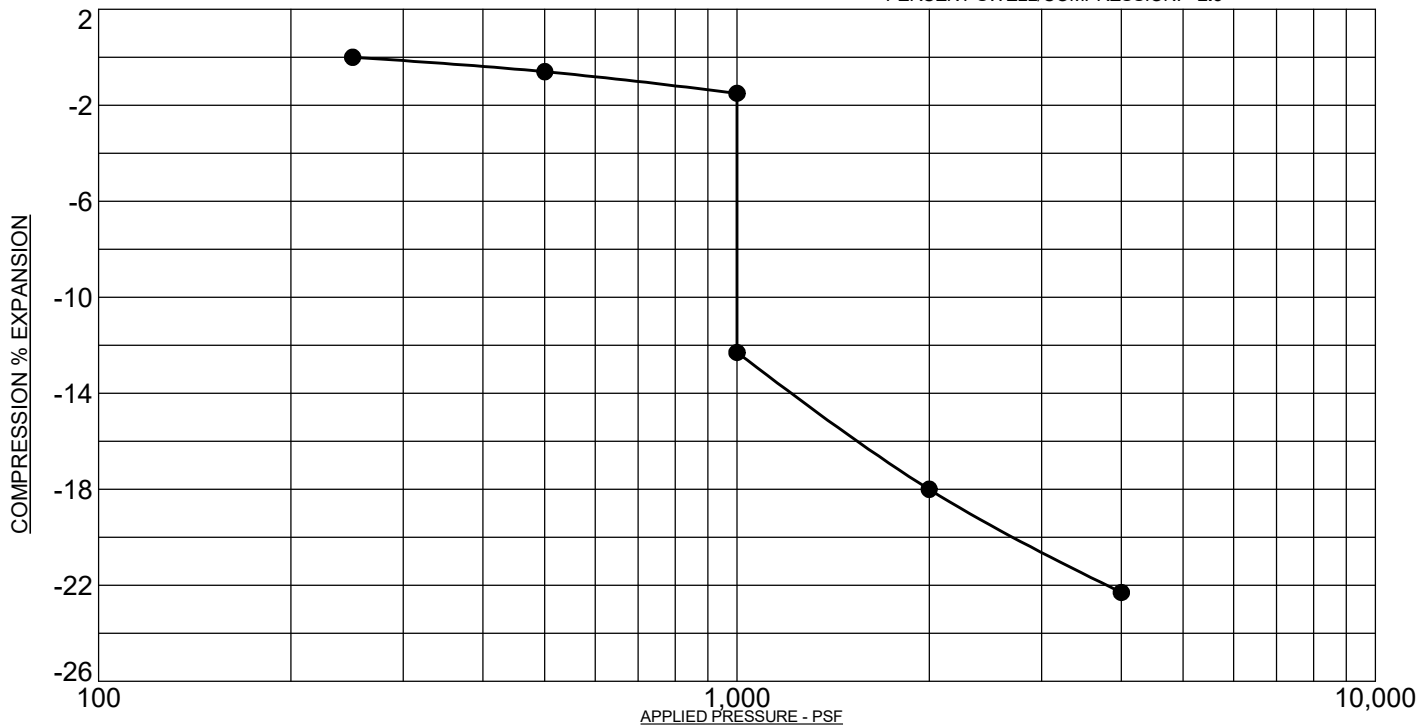
FIGURE No. 7

DATE Jun/08/2026



PROJECT: 18050 Quarterhorse Ln El Paso County, Colorado
 SAMPLE DESCRIPTION: CLAY, sandy
 NOTE: SAMPLE WAS INUNDATED WITH WATER AT 1,000 PSF

SAMPLE LOCATION: 1 @ 4 FT
 NATURAL DRY UNIT WEIGHT: 82.2 PCF
 NATURAL MOISTURE CONTENT: 8.5%
 PERCENT SWELL/COMPRESSION: - 2.3



PROJECT: 18050 Quarterhorse Ln El Paso County, Colorado
 SAMPLE DESCRIPTION: CLAY, sandy
 NOTE: SAMPLE WAS INUNDATED WITH WATER AT 1,000 PSF

SAMPLE LOCATION: 2 @ 2 FT
 NATURAL DRY UNIT WEIGHT: 82.2 PCF
 NATURAL MOISTURE CONTENT: 8.4%
 PERCENT SWELL/COMPRESSION: - 10.8

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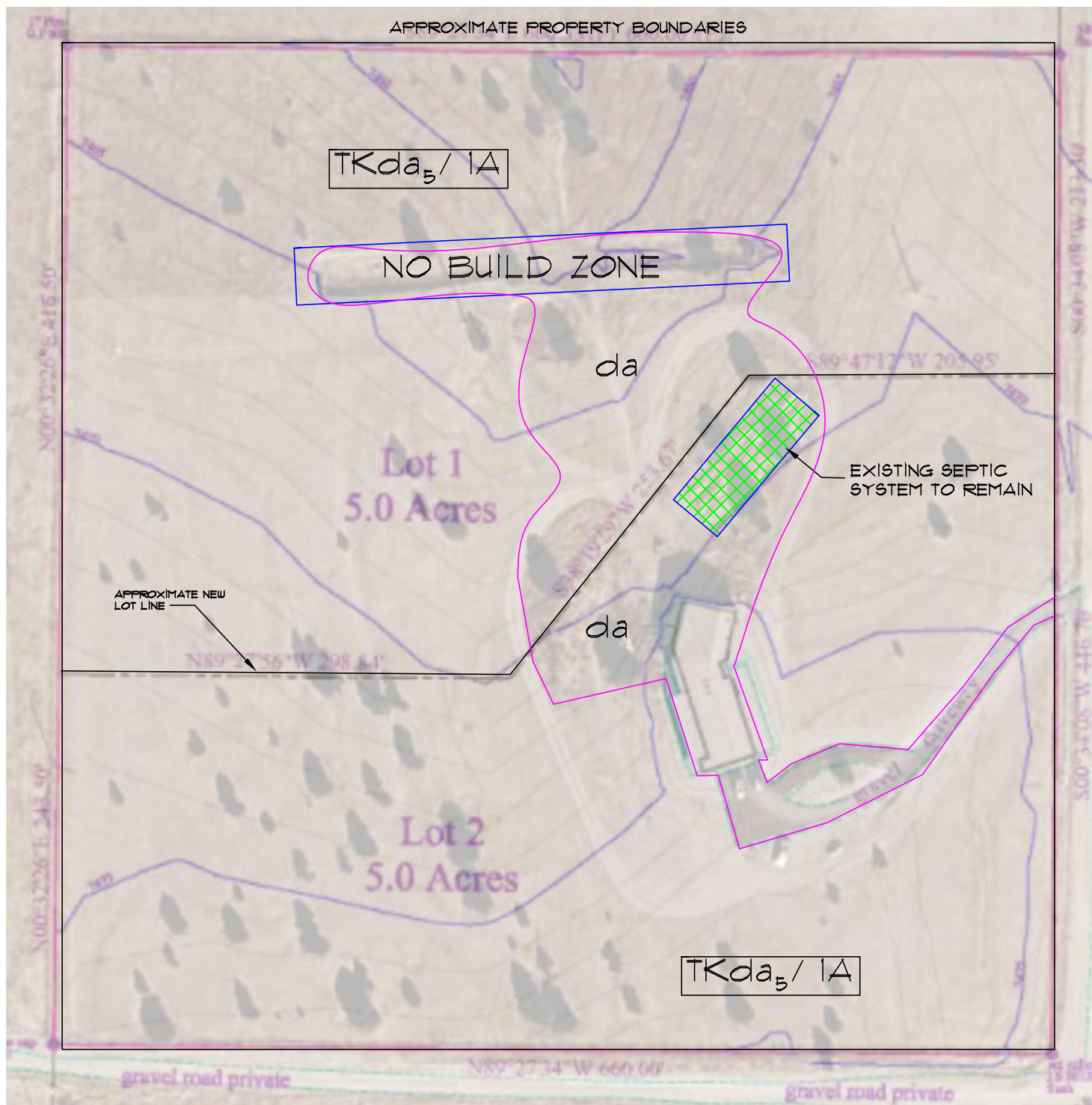
Geotechnical
Materials Testing

SWELL/CONSOLIDATION TEST RESULTS

JOB No. 201954

FIGURE No. 8

DATE Jun/08/2026



GEOLOGIC AND ENGINEERING UNITS

Tkda₅ - Dawson Formation - sandstone, known to contain interbedded seams of expansive sandy claystone. The sandstone was encountered in the test borings and is expected to be encountered at various depths across the site.

da - disturbed area - areas that are no longer in their native state.

1A - Stable alluvium, colluvium and bedrock on flat to gentle slopes (0 to 5%)



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ENGINEERING AND GEOLOGY MAP

Currently Addressed as: 18050
QUARTERHORSE LANE
LOT 6, LOT 1 WILLOW SPRINGS ESTATES
EL PASO COUNTY, CO
HOME RUN RESIDENTIAL, INC.

JOB No. 201954

FIG No. 9

DATE 6-8-2026

Appendix A

Additional Reviewed Documentation

1. *Flood Insurance Rate Map, El Paso County, Colorado and Unincorporated Areas, Community Panel No. 081041C0310G*, Federal Emergency Management Agency (FEMA), effective December 7, 2018. *FEMA Flood Map Service Center*: <https://msc.fema.gov/portal/home>.
2. *Geologic Map of the Black Forest Quadrangle, El Paso County, Colorado*, Colorado Geological Survey, Thorson, J.P., 2003, Open-File Report OF-03-06.
3. *Environmental and Engineering Geologic Map for Land Use*, compiled by Dale M. Cochran, Charles S. Robinson & Associates, Inc., Golden, Colorado, 1977.
4. *Map of Potential Geologic Hazards and Surficial Deposits*, compiled by Dale M. Cochran, Charles S. Robinson & Associates, Inc., Golden, Colorado, 1977.
5. *Reconnaissance Geologic Map of Colorado Springs and Vicinity, Colorado*, Department of the Interior United State Geologic Survey, prepared by Glenn R. Scott and Reinhord A. Wobus, Miscellaneous Field Studies, Map MF-482, Sheets 1 and 2, 1973.
6. *El Paso County, Master Plan for Mineral Extraction*, dated February 8, 1996.
7. *Evaluation of Mineral and Mineral Fuel Potential of El Paso County State Mineral Lands Administered by the Colorado State Land Board*, prepared by Colorado Geological Survey, dated February 19, 2003, Open-file Report OF-03-07.
8. *USDA – Natural Resources Conservation Service, Web Soil Survey*
<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
9. *Colorado Springs Landslide Susceptibility, Colorado Geological Survey*:
<https://cologeosurvey.maps.arcgis.com/apps/webappviewer/index.html?id=5e7484a637c4432e84f4f16d0af306d3>
10. *Colorado Landslide Inventory, Colorado Geological Survey*:
<https://cologeosurvey.maps.arcgis.com/apps/webappviewer/index.html?id=9dd73db7fbc34139abe51599396e2648>.
11. *Pikes Peak Regional Building Department*: <https://www.pprbd.org/>.
12. *City of Colorado Springs, Subdivision Document Viewer*:
<http://www.springsgov.com/SubDivView/default.asp?cmdGoBack=New+Search....>
13. *El Paso County Assessor, El Paso County, Colorado*:
14. <https://property.spataleat.com/co/elpaso/#/property/5115003006>
15. *Colorado Geological Survey, USGS Geologic Map Viewer*:
<http://coloradogeologicalsurvey.org/geologic-mapping/6347-2/>.
16. *Historical Aerials*: <https://www.historicaerials.com/viewer>, Images dated 1952, 1955-56, 1969, 1984, 1999, 2005, 2009, 2011, 2013, 2015, 2017, 2019, 2021, and 2023.
17. *USGS Historical Topographic Map Explorer*: <http://historicalmaps.arcgis.com/usgs/> Images dated 1962, 1981, 2011, and 2023.
18. *Google Earth Pro*, Imagery dated 1999, 2004-2006, 2010-2011, 2013, 2015, 2017, 2019, 2020, 2023 and 2023.

APPENDIX B

Wastewater Study – prepared by RMG Engineers

Job No. 201954

June 8, 2026

Home Run Residential Inc
710 S. Blaney Rd
Colorado Springs, CO 80929

Re: Wastewater Study – 2-Lot Minor Subdivision
Currently Addressed as: 18050 Quarterhorse Ln
Lot 6, Blk 1, Willow Springs Estates
El Paso County, Colorado

Dear Mr. Shaffer:

As requested, personnel of RMG Engineers (RMG) has performed a preliminary investigation and site reconnaissance at the above referenced address. Per the El Paso County Assessors website information, the overall site encompasses approximately 10 acres. The proposed site development is to consist of subdividing the site into two lots. The included parcel is:

- **EPC Schedule No. 5115003006**, is currently addressed as 18050 Quarterhorse Lane, with a legal description of Lot 6, Blk 1, Willow Springs Estates, contains a single-family residence, well, and septic system.

The approximate location of the site is shown on the Site Vicinity Map, Figure 1.

It is our understanding that the parcel is to be subdivided into two (2) lots. The two lots are to be 5.0 acres each. Access is currently provided to the existing residence from Quarterhorse Lane. Access to the new lot is to be from Quarterhorse Lane. The existing residence, well and septic are to remain on proposed Lot 2. The proposed new Lot 1 is to contain a single-family residence, well and septic once the subdivision is approved. Preliminary grading plans for proposed Lot 1, were not available at the time of this study, but it is our understanding that grading is anticipated to be minor, with construction occurring near the existing grades. The Proposed Lot Layout, Figure 2, outlines the proposed subdivision and the general boundaries of our investigation.

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 engineering investigation was completed in conjunction with this site. A previous geotechnical report for the existing residence was also available for our review. Both reports are listed below:

1. *Soil and Geology Study, Currently Addressed as 18050 Quarterhorse Lane, Lot 6, Blk 1, Willow Springs Estates, EPC Schedule No. 5115003006, El Paso County, Colorado*, prepared by RMG Engineers, dated June 8, 2026, Job No. 201954.
2. *Soils Report for J.D. Mc Grath Construction, Job #5027, Lot 6, Block 1, Willow Springs Estates Subdivision, Quarterhorse Lane, El Paso County, Colorado*, prepared by Front Range Geotechnical, Inc., dated August 4, 1997.

The findings, conclusions and recommendations contained in these reports were considered during the preparation of this report.

SITE CONDITIONS

Personnel of RMG performed a reconnaissance visit on May 28, 2026. 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 (2) test pits to depths of 8 and 5 feet were performed on proposed Lot 1, during our reconnaissance visit. Currently no new development is proposed for Lot 2. Test Pit TP-2 was terminated at 5 feet due to claystone bedrock, which is considered a limiting layer. A Test Pit Location Plan is presented in Figure 3.

The site surface characteristics were observed to consist of maintained, low-lying grasses and weeds across the entire site. Deciduous trees are scattered across the property.

The following conditions were observed with regard to the 10-acre parcel:

- A well currently **does** exist on the existing 10-acre site;
- One drainage feature exists on the site, currently (a long, narrow trench). This drainage feature is to be avoided, and runoff around the feature is to be maintained during new construction. If avoided, it is not anticipated to cause deleterious effects to treatment systems;
- No major waterways exist on the property. The entire site lies outside the designated floodway or floodplain;
- 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 test pit observations, the parcel has a minimum of two locations for the OWTS.

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 above referenced site plan. We have identified the soil conditions anticipated to be encountered during construction of the proposed OWTS for proposed Lot 1. 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. 08041C0310G, 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 (2) test pits to depths of 5 feet (Test Pit TP-2) and 8 feet (Test Pit TP-1) on May 28, 2026, 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. A Septic Suitability map is presented in Figure 5.

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

- **68 – Peyton-Pring complex, 3 to 8 percent slopes.** The Peyton-Pring complex was mapped by the USDA to encompass the entire property. Properties of the Peyton-Pring complex include, well-drained soils, depth of the water table is anticipated to be greater

than 6.5 feet, runoff is anticipated to be low, frequency of flooding and ponding is none, and landforms include hills.

The USDA Soil Survey Map is presented below.



Groundwater or evidence of below ground water was not observed in the test pits. Bedrock was encountered in both the test pits observed by RMG.

A new OWTS is proposed for Lot 1 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. Currently, a new OWTS is not proposed for Lot 2.

Redoximorphic features indicating the fluctuation of groundwater or higher ground water levels were not observed in the test pits.

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.

The subsurface materials encountered in the test pit excavations were classified using Table 10-1 Soil Treatment Area Long-term Acceptance Rates from the EPCDHE Chapter 8, OWTS Regulations and the USDA Soil Structure Shape and Grade. The materials were grouped into a two soil types to include the following general categories:

- Sandy Clay (Soil Type 4)
- Sandy Clay Loam (Soil Type 3)

Groundwater and bedrock are considered limiting layers. Neither groundwater nor redox (indications of the fluctuation of water within the upper 8 feet) were observed in the test pits. Clay and claystone bedrock were encountered in both of the test pits. The long term acceptance rate (LTAR) associated with the most restrictive soils observed (claystone) in the test pits was 0.20 gallons per day per square foot (gpd/sf) for the sandy clay (Soil Type 4).

Additionally, based on the depth to the limiting layer (bedrock) (at depths of 5 to 8 feet below the existing ground surface), the maximum depth of the OWTS components may be limited and/or mound systems (above finished ground surface) may be required.

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.

An OWTS site evaluation 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,

RMG Engineers

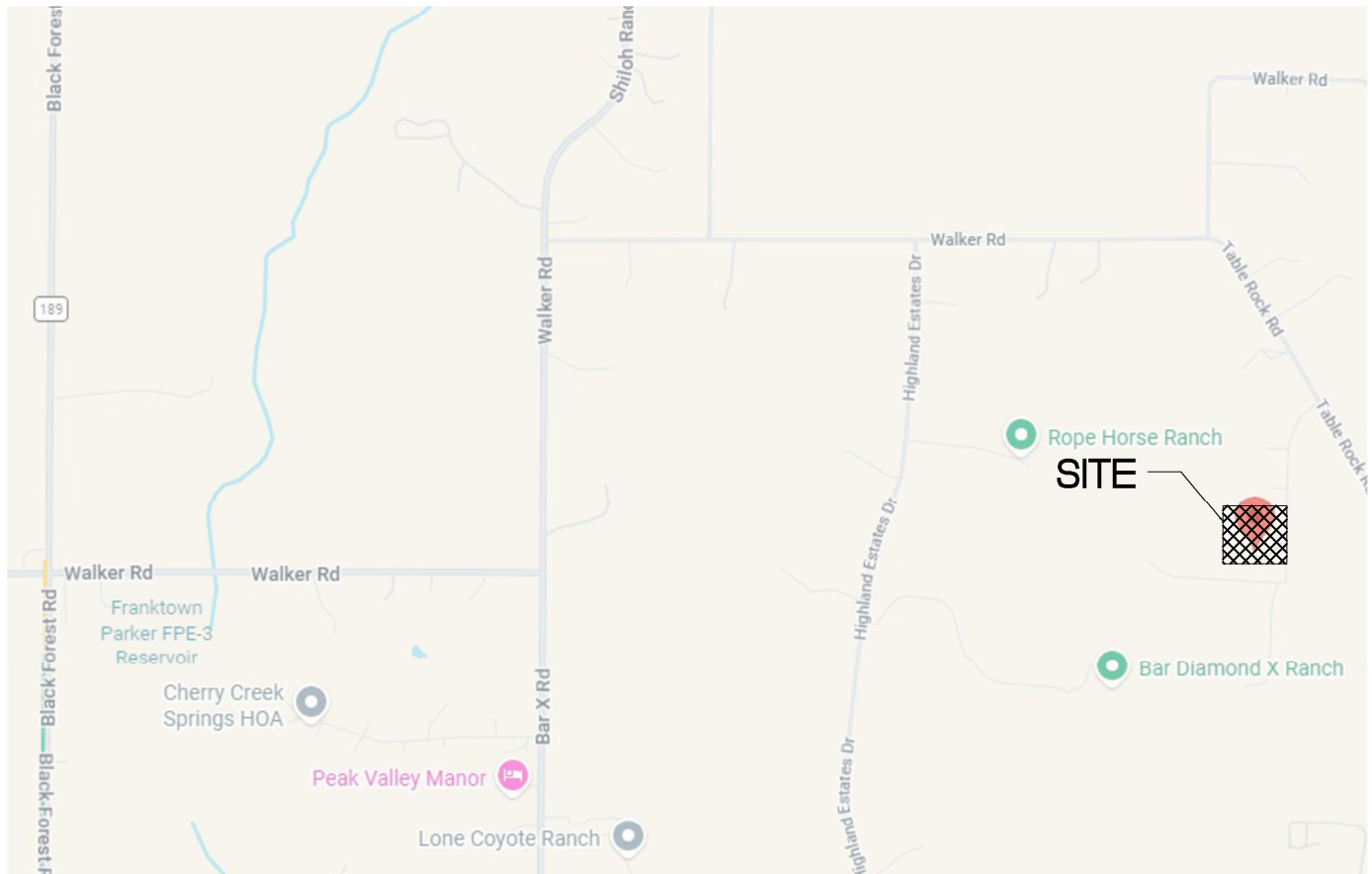
Kelli Zigler
Geotechnical Group Director

Reviewed by,

RMG Engineers

Tony Munger, P.E.
Sr. Geotechnical Proj Mgr | COO





NOT TO SCALE

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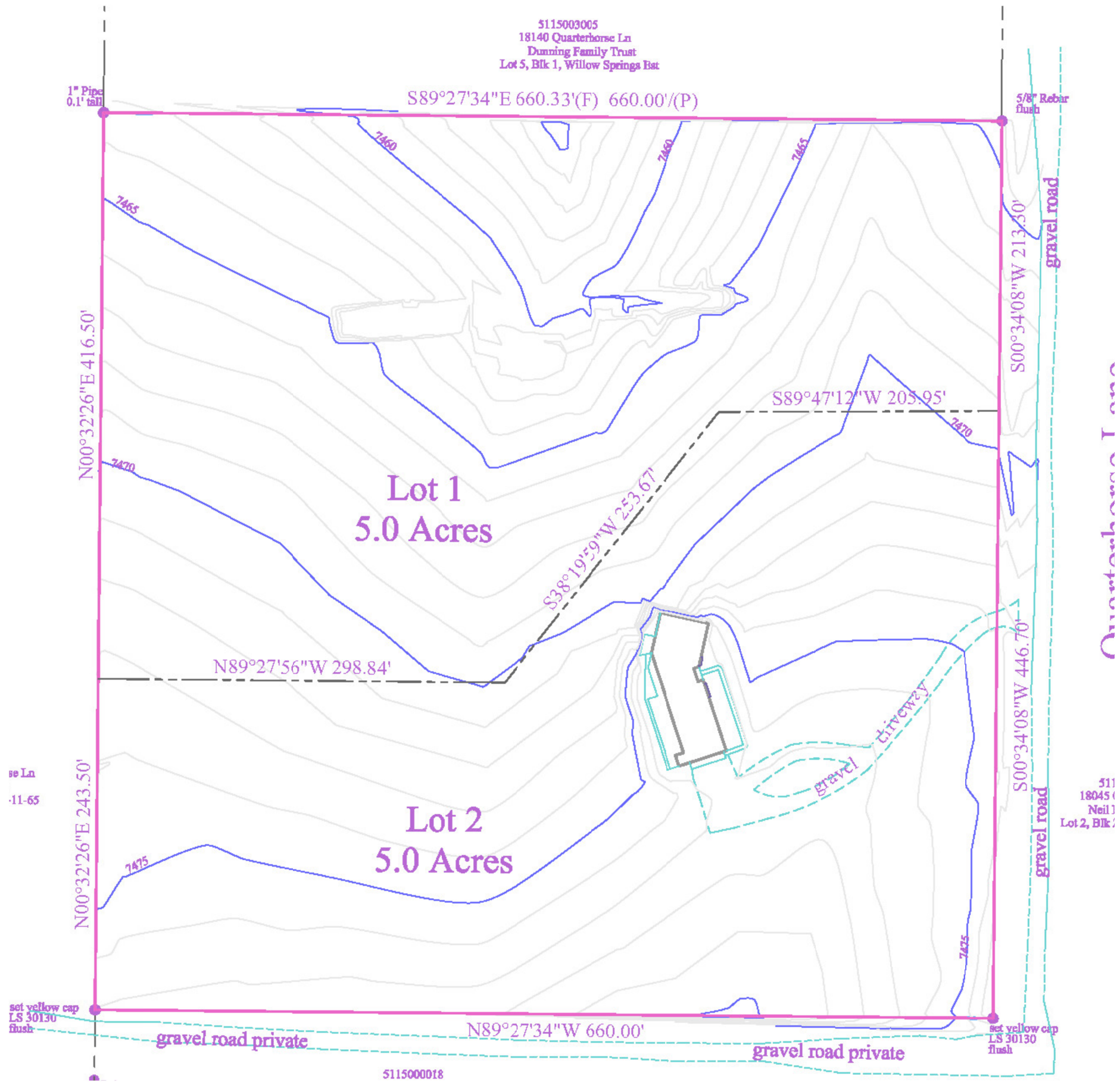
SITE VICINITY MAP

Currently Addressed as: 18050
QUARTERHORSE LANE
LOT 6, LOT 1 WILLOW SPRINGS ESTATES
EL PASO COUNTY, CO
HOME RUN RESIDENTIAL, INC.

JOB No. 201954

FIG No. 1

DATE 6-8-2026



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BASE MAP PROVIDED BY: ALESSI and ASSOCIATES, Inc.

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EL PASO COUNTY, CO
HOME RUN RESIDENTIAL, INC.

ENGINEER: TM
DRAWN BY: KZ
CHECKED BY: TM
ISSUED: 6-8-2026

PROPOSED
LOT LAYOUT

SHEET No.

FIG-2

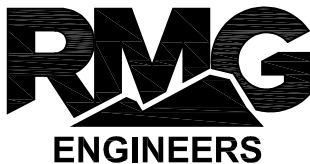


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DENOTES APPROXIMATE
LOCATION OF TEST PITS

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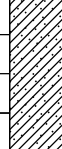
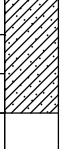
TEST PIT LOCATION PLAN

Currently Addressed as: 18050
QUARTERHORSE LANE
LOT 6, LOT 1 WILLOW SPRINGS ESTATES
EL PASO COUNTY, CO
HOME RUN RESIDENTIAL, INC.

JOB No. 201954

FIG No. 3

DATE 6-8-2026

TEST BORING: TP-1 DATE DRILLED: 5/28/26 NO GROUNDWATER ON 5/28/26	DEPTH (FT)	SYMBOL	SAMPLES	BLOWS PER FT.	WATER CONTENT %	TEST BORING: TP-2 DATE DRILLED: 5/28/26 NO GROUNDWATER ON 5/28/26	DEPTH (FT)	SYMBOL	SAMPLES	BLOWS PER FT.	WATER CONTENT %
TOPSOIL: SANDY CLAY LOAM MODERATE, BLOCKY, SOIL TYPE 3	5					TOPSOIL: SANDY CLAY LOAM MODERATE, BLOCKY, SOIL TYPE 3	5				
SANDY CLAY LOAM MODERATE, BLOCKY, SOIL TYPE 3						SANDY CLAY LOAM MODERATE, BLOCKY, SOIL TYPE 3					
SANDY CLAY MODERATE, BLOCKY, SOIL TYPE 4						LIMITING LAYER AT 5 FEET DUE TO CLAYSTONE BEDROCK					
LIMITING LAYER AT 8 FEET DUE TO CLAYSTONE BEDROCK											

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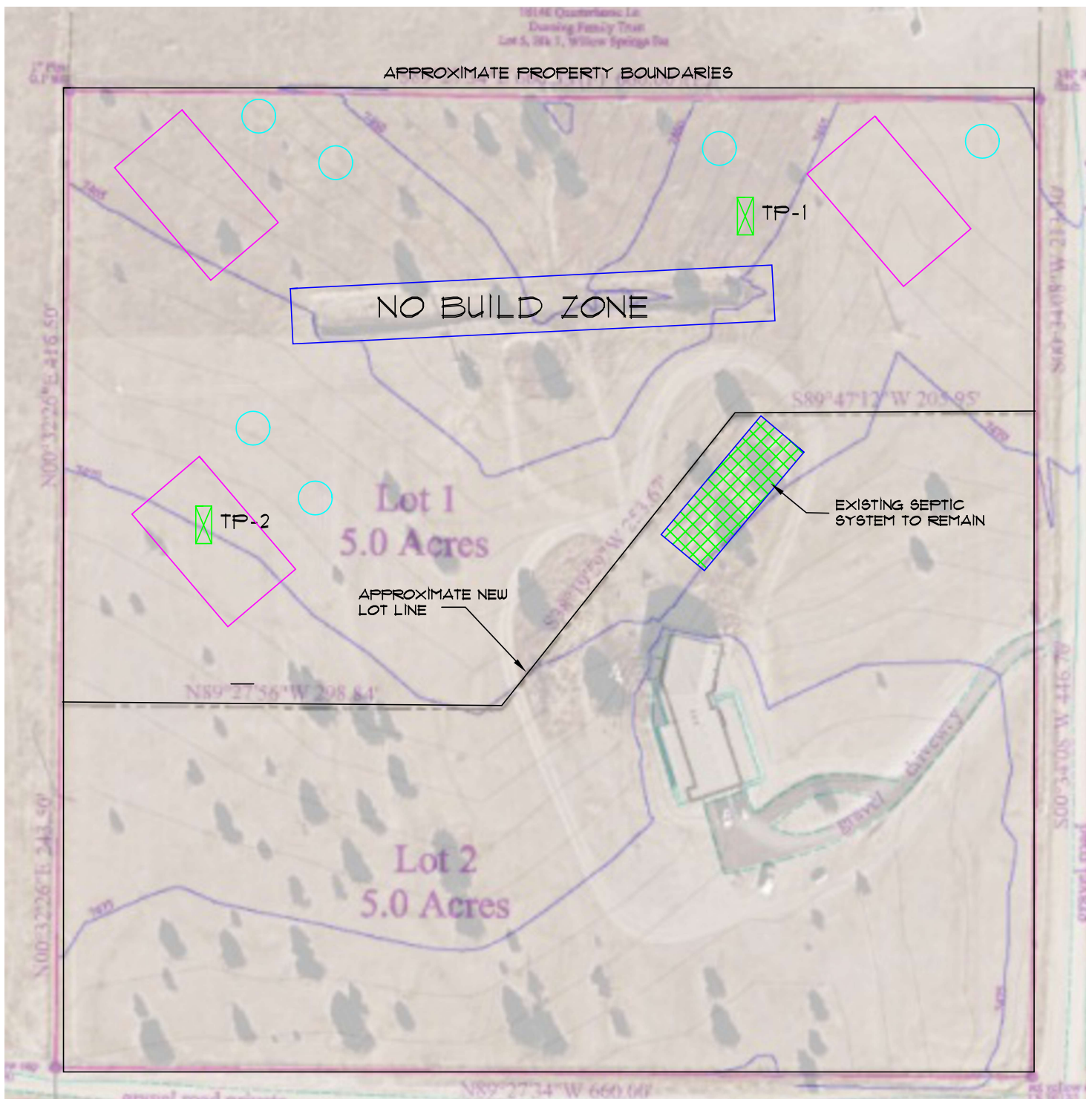
Geotechnical
Materials Testing

TEST BORING LOG

JOB No. 201954

FIGURE No. 4

DATE Jun/08/2026



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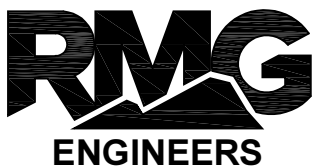


DENOTES POSSIBLE LOCATIONS FOR NEW RESIDENCE



DENOTES POSSIBLE LOCATIONS FOR NEW OWTS

Structural
Geotechnical



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SEPTIC SUITABILITY MAP

Currently Addressed as: 18050
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FIG No. 5

DATE 6-8-2026