

SOIL AND GEOLOGY STUDY

Andon Heights
Currently addressed as: 19225 Elliott View
EPC Schedule No. 3208000002
El Paso County, Colorado

PREPARED FOR:

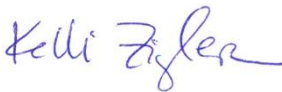
Signature Homes
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JOB NO. 197651

March 27, 2026

Respectfully Submitted,
RMG Engineers

Reviewed by,
RMG Engineers



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1.0 GENERAL SITE AND PROJECT DESCRIPTION

The project lies in the SW¼ of Section 08, Township 12 South, Range 63 West of the 6th Principal Meridian in El Paso County, Colorado. The site is generally located east and south of the intersection of Peyton Highway and Elliott View. The approximate location of the site is shown on the Site Vicinity Map, Figure 1.

1.1 Existing and Proposed Land Use

The site currently consists of one parcel per the El Paso County Assessor's website. The parcel included in this study is:

- **EPC Schedule No. 3208000002**, currently addressed as 19225 Elliott View, which consists of 38.77 acres and is zoned A-35.

1.2 Project Description

It is our understanding the 38.77-acre parcel is to be subdivided into seven (7) lots. The lot sizes are to range between 5.21 and 6.49 acres per lot.

The subdivision is to be accessed from one new road extending south from Elliott View. Each lot is to be serviced by an individual wastewater treatment system and well. Preliminary grading plans 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.

1.3 Previous Investigations

Reports of previous geotechnical engineering/geologic investigations for this site were not available for our review.

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 25 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, P.E. is a licensed professional engineer with over 25 years of experience in the construction engineering (residential) field. Mr. Munger holds a B.S. in Architectural Engineering from the University of Wyoming

3.0 STUDY OVERVIEW

The purpose of this investigation is to characterize the general geotechnical, geologic site conditions and present our opinions of the potential effect of these conditions on the proposed development near Peyton within El Paso County, Colorado. 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.

Revisions to the conclusions presented in this report may be issued based upon submission of the Development Plan. 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 El Paso County Engineering Criteria Manual (ECM), specifically Appendix C last updated July 9, 2019.

3.1 Scope and Objective

The scope of this study is to include 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.

The objectives of our study are to:

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

This report presents the findings of the study performed by RMG-Rocky Mountain Group 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 several sources, including:

- Field reconnaissance
- Geologic and topographic maps
- Review of selected publicly available, pertinent engineering reports
- Available aerial photographs
- Subsurface exploration
- Geologic research and analysis

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 not considered applicable for the scope of this report.

3.3 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 site is currently vacant undeveloped land. The site is generally located south and east of the intersection of Peyton Highway and Elliott View, within El Paso County, Colorado. The site is bound to the north by Elliott View, to the west by developed 10-acre residential lots, and to the east and south by developed 35-acre residential lots. The surrounding parcels contain existing single family residences, wells and septic systems.

4.2 Topography

Based on our site reconnaissance on March 9, 2026 and review of the USGS 2022 topographic map of the Peyton Quadrangle, the site does not contain drainageways but does contain low-lying areas. Three manmade ponds also exist on the site. The ponds were dry at the time of our site visit, but do appear to collect surface water during heavy precipitation events.

4.3 Vegetation

The site vegetation primarily consists of tall native grasses, weeds, cattails, and other prairie-type vegetation. Deciduous trees were not located on the property.

4.4 Aerial Photographs and Remote-Sensing Imagery

Personnel of RMG reviewed aerial photos available through Google Earth Pro dating back to 1985, Colorado Geological Survey (CGS) surficial geologic mapping, and historical photos by historicaerials.com dating back to 1947. It appears the manmade ponds have been onsite since prior to 1955. After 1955, the ponds are visible and contain water in the majority of the photos. Other than the fluctuations of surface water indicated by the dark green in the photos, the site has remained relatively unchanged to the present.

5.0 FIELD INVESTIGATION AND LABORATORY TESTING

The subsurface conditions were explored by drilling three (3) exploratory borings on February 12, 2026, extending to depths of approximately 20 to 35 feet below the existing ground surface. Two (2) test pits to depths of 8 feet were observed on March 9, 2026. The test borings and test pits were spaced to provide preliminary soil information across the site for future residential foundations and on-site wastewater treatment systems. The Test Boring/Test Pit Location Plan is presented in 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. The test pits were performed with a mini-excavator, provided by others, and observed by RMG at the time of excavation. An Explanation of Test Boring Logs and the Test Boring Logs are presented in Figures 4 through 6.

5.1 Laboratory Testing

Soil laboratory testing was performed as part of this investigation. The laboratory tests included moisture content, grain-size analyses, Atterberg Limit tests and two swell tests. A Summary of Laboratory Test Results is presented in Figure 7. Soils Classification Data is presented in Figure 8. The Swell/Consolidation Test Results are presented in Figure 9.

6.0 SOIL, GEOLOGY, AND ENGINEERING GEOLOGY

The site is located within the central portion of the Great Plains Physiographic Province. The site exists within the southern portion of a large structural feature known as the Denver Basin. In general, the geology at the site consists of eolian (loess) deposits overlying sandstone and claystone of the Dawson Formation.

6.1 Subsurface Soil Conditions

The subsurface materials encountered in the test borings were classified visually in the field and within the laboratory using the Unified Soil Classification System (USCS). The materials were identified and classified in the laboratory as well graded to silty sand (SW-SM), sandy clay/claystone (CL), and silty to clayey sandstone (SM, SM-SC).

Additional descriptions and the interpreted distribution (approximate depths) of the subsurface materials are presented on the Test Boring Logs. The classifications shown on the logs are based upon the engineer's classification of the samples at the depths indicated. Stratification lines shown on the logs represent the approximate boundaries between material types and the actual transitions may be gradual and vary with location.

6.2 Bedrock Conditions

In general, the bedrock (as mapped by Colorado Geologic Survey - CGS) beneath the site is considered to be part of the Dawson Formation. The sandstone and claystone bedrock was encountered in all three of the test borings. Foundation stability within the Dawson sandstone generally is good and permeability is anticipated to be low. If claystone is encountered during construction, it is generally not considered suitable for foundations, and its permeability is anticipated to be very low.

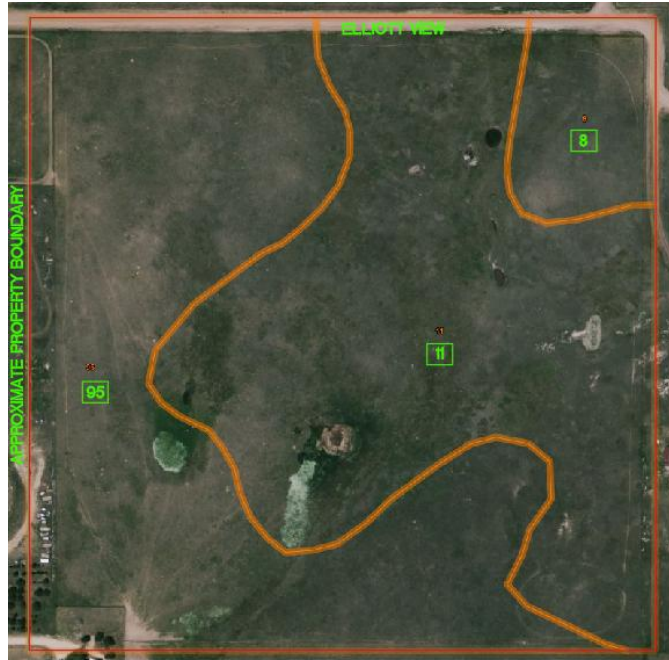
Depending on the final site grading and depth of foundations, bedrock may be encountered in the proposed basement foundation excavations across the entirety of the site. Bedrock may be encountered in the deeper utility trenches for the proposed development. Overall, the Dawson sandstone and claystone can readily be excavated with standard construction equipment such as a front-end loader or excavator.

6.3 U.S. Soil Conservation Service

The USDA/NRCS soil survey identifies the site soils as:

- **Blakeland loamy sand** (Map Unit 8) with 1 to 9 percent slopes. The Blakeland loamy sand was mapped by the USDA to encompass a small portion of the northeast corner of the property. Properties of the loamy sand include somewhat excessively drained soils, depth of the water table is anticipated to be greater than 80 inches (6.5 feet), runoff is anticipated to be low, frequency of flooding and/or ponding is none, and landforms include hills and flats;
- **Bresser sandy loam, cool, 0 to 3 percent slopes** (Map Unit 11). The Bresser sandy loam was mapped by the USDA to encompass the majority of the central portion of the property. Properties of the sandy loam include well drained soils, depth of the water table is anticipated to be greater than 80 inches (6.5 feet), runoff is anticipated to be low, frequency of flooding and/or ponding is none, and landforms include broad and flat interfluves.
- **Truckton loamy sand** (Map Unit 95) was mapped to encompass the majority of the western and southern portion of the property. Properties of the Truckton loamy sand include well drained soils, depth of the water table is anticipated to be greater than 80 inches (6.5 feet), runoff is anticipated to be low, frequency of flooding and/or ponding is none, and landforms include interfluves and fan remnants.

The USDA Soil Survey Map is presented below.



6.4 General Geologic Conditions

Based on our field observations and review of relevant geologic maps, we identified the geologic conditions (listed below) affecting the development, as shown on the Engineering and Geology Map, Figure 10.

The site generally consists of eolian (loess) deposits overlying sandstone and claystone of the Dawson Formation. The geologic units mapped at the site as:

- ***Qes – Eolian sand (Holocene and Pleistocene)*** – windblown sand that was deposited primarily in sheets rather than dunes. Typically, 1 to 10 feet thick.
- ***Tkda₃ – Dawson Formation Facies 3*** (Paleocene) – Moderately well sorted arkosic sandstone with interbedded seams of sandy claystone. Claystone contained in this unit may be prone to swelling when wet. This formation lies beneath the entire site at various depths.
- ***psw – potential seasonally wet*** - areas that have historically collected surface water during high moisture events. These areas can be avoided with proper planning prior to development.
- ***Af – Artificial Fill*** – fill remaining from the original excavation of the two ponds onsite. The ponds lie within the mapped *psw* areas. These areas should be avoided with the placement of residences and OWTS.

6.5 Engineering Geology

The engineering geology unit mapped at the site is:

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

The map unit description for the above units were provided by Charles Robinson and Associates (1977).

6.6 Structural Features

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

6.7 Surficial (Unconsolidated) Deposits

Lake and pond sediments, swamp accumulations, sand dunes, marine terrace deposits, talus accumulations, and creep was not observed on the site. Slump and slide debris were also not observed on the site.

6.8 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 study site or surrounding areas.

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

6.9 Groundwater and Drainage of Surface Water

The overall topography of the site slopes down from the northwest to the southeast. Groundwater was encountered at the time of drilling on February 12, 2026 in two of the test borings at depths ranging from 4 to 25 feet, respectively. Groundwater was also observed in follow-up groundwater checks performed on March 9, 2026 in the same two borings at depths ranging from 3.5 to 23.5 feet.

It should be noted that in granular soils and bedrock, some subsurface water conditions might be encountered due to the variability of the soil profile. Isolated sand and gravel layers within the soil, even those of limited thickness and width, can convey subsurface water. Subsurface water may also flow atop the interface between the upper soils and the underlying bedrock. While not indicative of a "groundwater" condition, these occurrences of subsurface water migration can (especially in times of heavy rainfall or snowmelt) result in water migration into the excavation or (once construction is complete) the building envelope. Builders and planners should be cognizant

of the potential for the occurrence of subsurface water conditions during on-site construction, and be prepared to evaluate and mitigate each individual occurrence as necessary.

Based on our knowledge of the area and engineering design and construction techniques commonly employed in the El Paso County area at this time, it is our opinion that basements should be restricted in areas where groundwater was encountered at 15 feet or shallower. Shallow groundwater conditions are anticipated to be found at the time of the site-specific subsurface soil investigations.

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.

6.10 Flooding and Surface Drainage

No natural drainageways exist on the site. Brackett Creek lies approximately 900 feet north of the site. Two manmade ponds were observed onsite. The ponds were dry at the time of our site visit.

Based on our review of the Federal Emergency Management Agency (FEMA) Community Panel No. 08041C0375G and the online ArcGIS El Paso County Risk Map, the majority of the site lies outside of a 100-year floodplain. The site is within the boundaries of Zone X.

Zone X is defined by FEMA as an area of minimal flood hazard that is determined to be outside the Special Flood Hazard Area and higher than the elevation of the 0.2-percent-annual-chance (or 500-year) flood. 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 2* indicates the site is identified as Upland Deposits. The deposits are composed of sand, gravel with silt and clay. These deposits are remnants of older streams deposited on topographic highs or bench like features. The site is underlain primarily by the Dawson Formation, a sedimentary formation of Tertiary age related to uplift and erosion of the Front Range.

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, the tract identifier is 41-02. However, the area of the site has been mapped "Poor" for coal resources. In this part of the Denver coal region, coal resources are locally present within the lower part of the Laramie Formation of Upper Cretaceous age. The area contains strata that may contain coal. This area is not prospective for metallic mineral resources. No oil and gas wells are drilled in the area, or within two miles of it. Alluvial deposits are commonly mined in the region for sand and gravel. There are no active or inactive gravel pits in the area.

8.0 IDENTIFICATION AND MITIGATION OF POTENTIAL GEOLOGIC CONDITIONS

The El Paso County Engineering Criteria Manual recognizes and delineates the difference between geologic 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 anticipated to pose a significant risk to the proposed development:

- Avalanches
- Debris Flow-Fans/Mudslides
- Flood Prone Areas
- Ground Subsidence and Abandoned Mining Activity
- Landslides
- Rockfall
- Steeply Dipping Bedrock
- History of Landfill
- Downhill/Down-slope Creep
- Soil Slumps and Undercutting
- Scour, Erosion, Accelerated Erosion Along Creek Banks and Drainageways
- Corrosive Minerals

The following sections present the geologic conditions that have been identified on (or anticipated to be on) the property:

8.1 Expansive Soils

Based on the test borings performed for this investigation and our experience with similar soils in the area, the sandy clay and claystone bedrock generally possess low to high swell potential. It is anticipated expansive clay soils or claystone bedrock will be encountered at the time of the site-specific subsurface soil investigations, and that final mitigations and construction recommendations will be provided at that time. These materials are readily mitigated with typical construction practices common to this region of El Paso County, Colorado.

Mitigation

Sporadic areas of expansive soils and bedrock are anticipated. If expansive soils or bedrock are encountered beneath the foundations, mitigation will be required. Due to the variability of the soil/bedrock conditions across the site and the anticipated lot sizes in excess of 5 acres each, “mass” subexcavation during land development is currently not proposed, nor are we proposing it at this time.

Localized overexcavation below the proposed foundations and replacement with structural fill is anticipated to be the preferred mitigation. Overexcavation is anticipated for more than half of the lots. Overexcavation depths of 3 to 4 feet are anticipated. Replacement with granular, non-expansive structural fill is typically utilized for similar sites, but moisture-conditioning and recompacting the on-site clays (if desired) may also be considered for mitigation of expansive materials. However, using moisture-conditioned clay soils as structural fill may result in differing overexcavation depths and foundation design parameters. Floor slabs bearing directly on expansive material should be expected to experience a higher degree of movement. Overexcavation and replacement below the floor slabs has been successful in reducing slab movement.

The final determination of mitigation alternatives and foundation design criteria for each individual residence are to be determined in site-specific subsurface soil investigations. Based on the limited boring data provided to determine preliminary recommendations. 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 structures.

8.2 Compressible Soils

Based on the test borings performed for this investigation, the silty to clayey sands will be encountered within some of the building excavations. In some cases, loose sands may be encountered in the excavations. These materials are readily mitigated with typical construction practices common to this region of El Paso County, Colorado.

Mitigation

Sporadic areas of loose soils may be encountered. If loose soils are encountered beneath the foundations, mitigation will be required. Due to the variability of the soil/bedrock conditions across the site and the anticipated lot sizes in excess of 5 acres each, “mass” subexcavation during land development is currently not proposed, nor are we proposing it at this time.

Localized overexcavation below the proposed foundations and replacement with structural fill is anticipated to be the preferred mitigation. Localized overexcavation below the proposed foundations and replacement with structural fill is anticipated to be the preferred mitigation. If loose soils are encountered during the open excavation observation, they may require additional compaction to achieve the allowable bearing pressure indicated in this report. Fluctuations in material density may occur. In some cases, removal and recompaction of loose soil may be required. The use of track-mounted excavation equipment, or other low ground pressure equipment, is recommended on loose soils to reduce the likelihood of loss of stability during excavation.

The final determination of mitigation alternatives and foundation design criteria are to be determined in site-specific subsurface soil investigations for each lot. Provided that appropriate mitigations and/or foundation design adjustments are implemented, the potential presence of loose soils is not considered to pose a risk to the proposed structures.

8.3 Ponding Water, Springs and Groundwater

Based on the site observations, review of USGS topographic maps dating back to 1952, and review of Google Earth images dating back to September 1999, springs do not appear to originate on the subject site. However, ponding water and areas of seasonal shallow groundwater were encountered during our investigation. In these areas, we would anticipate the potential for periodically high subsurface moisture conditions and frost heave potential. These areas lie within low-lying portions of the site.

Ponding surface water is likely to be encountered in the low lying drainageways. These areas are denoted as *psw* – *potential seasonally wet* areas on the Engineering and Geology Map, Figure 10.

Drilling occurred in February, generally when seasonal groundwater levels are considered lower in the winter months (November through February). The presence of groundwater was observed in two (2) of the test borings. Groundwater measurements are limited to the time of years measured and are considered snapshots only. Groundwater and/or perched water should be anticipated on the majority of lots within the subdivision.

Fluctuations in groundwater and subsurface moisture conditions may occur due to variations in rainfall and other factors not readily apparent at this time. Groundwater information obtained at the time of the preliminary investigations performed prior to the land development phase may or may not be representative of the conditions present at the time of construction. Furthermore, the development processes (reshaping of the ground surface, installation of buried utilities, installation of an underdrain below the roadways, etc.) can significantly alter the depth and flow paths of the subsurface water. The construction of surrounding lots can also alter the amount and depth of

subsurface groundwater below a given lot. The potential exists for high groundwater levels during high moisture periods and should structures encroach on these areas, the following mitigations should be followed.

Mitigation

The feasibility of basement construction should be evaluated prior to the site-specific Subsurface Soil Investigation for each lot. Seasonal variations in underground water conditions are expected due to the unnamed drainageway. If shallow underground water conditions are encountered during the site-specific Subsurface Soil Investigations and/or Open Excavation Observations, mitigations may include restricting basement construction, raising the grade of the residence and/or a combination of surface and subsurface drainage systems, vertical drainboard, etc.

To date, RMG has not been provided with a cut/fill plan or a site grading plan. Grading plans are expected to be completed prior to construction of each individual residence. Currently, groundwater is anticipated to be within 15 feet of the proposed ground surface on 2 to 3 lots within the subdivision based off the limited boring and test pit information. Therefore, basement construction should be restricted except where one of the following conditions apply:

- A year-long groundwater monitoring study is undertaken, and the results indicate that groundwater is sufficiently deep to allow basement construction;
- The proposed construction will result in at least 15 feet of separation between the proposed ground surface and the groundwater elevation. Where groundwater encroaches shallower than 15 feet, the ground surface may be modified (raised) to increase the separation to meet these criteria.

Foundations must have a minimum 30-inch depth for frost protection. Perimeter drains are recommended around portions of the structures which will have habitable or storage space located below the finished ground surface. This includes crawlspace areas but not the walkout trench, if applicable. Perimeter drains help prevent the intrusion of water into areas below grade. A typical perimeter drain detail is presented in Figure 11.

If groundwater is encountered at the time of the site-specific subsurface soil investigations within 4 to 6 feet of the proposed basement slab elevation, an underslab drain would be considered in conjunction with the perimeter drain. It must be understood that subsurface drains are designed to intercept some types of subsurface moisture and not others. Therefore, the drain(s) could operate properly and not mitigate all moisture problems relating to foundation performance or moisture intrusion into the basement area. A typical underslab drain detail is presented in Figure 12.

The RR-5 lots should have sufficient prairie and grass land to absorb the stormwater prior to reaching other residences and/or exiting the site. Erosion control should be placed during and after construction to reduce sheetwashing and erosion during heavy precipitation events prior to the final landscaping of each lot.

8.4 Uncontrolled/Undocumented Fill Placement

Fill soils resulting from the original land shaping are expected in the area of the ponds. The ponds lie within the areas that have historically contained surface water, these areas are indicated by *psw* – *potentially seasonally wet* areas on the Engineering and Geology Map, Figure 10.

Mitigation

Fill was not encountered at the time of drilling. It does not appear fill placement extended outside of the pond areas. However, if unsuitable fill soils are encountered below the proposed foundation components at the time of the open excavation observation, they will require mitigation. Mitigation should consist of the complete removal (overexcavation) of the fill material below the proposed structures and replacement with newly placed and compacted structural fill. The zone of overexcavation shall extend to the bottom of the unsuitable fill zone and shall extend at least that same distance beyond the building perimeter (or lateral extent of the fill, if encountered first).

8.5 Faults and Seismicity

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 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 located near the Ute Pass Fault, which is greater than 10 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 0.185g for a short period (S_s) and 0.059g 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 B, with average shear wave velocities ranging from 2,500 to 5,000 feet per second for the materials in the upper 100 feet.

8.6 Radon

"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".

Northern El Paso County and the 80831 zip code in which the site is located, has an EPA assigned Radon Zone of 1. A radon Zone of 1 predicts an average indoor radon screening level greater than 0.4 pCi/L (picocuries per liter), which is above the recommended levels assigned by the EPA. *The EPA recommends [corrective measures](#) to reduce exposure to radon gas.*

All of the State of Colorado is considered EPA Zone 1 based on the information provided at https://county-radon.info/CO/El_Paso.html. Elevated hazardous levels of radon from naturally occurring sources are not anticipated 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 WASTEWATER TREATMENT SYSTEMS

It is our understanding that individual On-site Wastewater Treatment Systems (OWTS) are proposed for the subdivision. The site was evaluated in general accordance with the El Paso Land Development Code, specifically sections 8.4.8. Two (2) test pits to 8 feet were performed across the site to obtain a general understanding of the soil and bedrock conditions. The Test Pit Logs are presented in the Wastewater Study, Appendix B.

As discussed in section 6.3, the USDA soil types consisted of sandy loam and loamy sand. A limiting layers was encountered in one of the test pits, consisting of signs of seasonal groundwater fluctuations (redox) at a depth of 4 feet. The long term acceptance rates (LTAR) associated with the soils observed in the test pits range from 0.15 to 0.60 gallons per day per square foot (soil types Types 2 to 4A).

Contamination of surface and subsurface water resources should not occur provided the OWTS sites are evaluated and installed according to the El Paso County Board of Health Guidelines and property maintained.

Treatment areas at a minimum, must achieve the following:

- 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, most recently amended May 23, 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;
- Each lot shall be designed to ensure that a minimum of 2 sites are appropriate for a OWTS and do not fall within the restricted areas, potentially seasonally wet and floodplain, as identified on the Engineering and Geology Map, Figure 10.

It is our opinion that if the EPCDHE physical setback requirements (both horizontal and vertical) are met for each lot, there are no restrictions on the placement of the individual On-site Wastewater Treatment Systems.

Soil and groundwater conditions at the site are suitable for individual treatment systems with planning and proper placement. The LTAR values ranged between 0.15 and 0.6 for the on-site 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 will likely change throughout the site. If an LTAR value of less than 0.35 (soil types 3 to 5) or greater than 0.80 (soil type R-0) is encountered at the time of the site specific OWTS evaluation, an "engineered system" will be required.

10.0 BEARING OF GEOLOGIC CONDITIONS UPON PROPOSED DEVELOPMENT

Geologic hazards (as described in section 8 of this report) found to be present at this site include faults, seismicity and radon. Geologic conditions (as described in section 8 of this report) found to be present at this site include potentially expansive and compressible soils, seasonally wet areas, shallow fluctuating groundwater, and uncontrolled/undocumented fill. It is our opinion that the existing geologic and engineering conditions can be satisfactorily mitigated through proper engineering, design, and construction practices.

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, test pits, laboratory test results, conclusions and recommendations presented in this report are not intended for use for design and construction. ***A site-specific subsurface soil investigation will be required for all proposed structures including (but not limited to) residences, detached structures, and any proposed retaining walls, etc.***

To develop recommendations for construction of the proposed roadways, a pavement design investigation should be performed. This investigation should consist of additional test borings, soil laboratory testing and specific recommendations for the design and construction of roadway pavement sections.

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 are considered typical 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 suitable construction practices.

Basement construction should be restricted except where one of the following conditions apply:

- A year-long groundwater monitoring study is undertaken, and the results indicate that groundwater is sufficiently deep to allow basement construction;
- The proposed construction will result in at least 15 feet of separation between the proposed ground surface and the groundwater elevation. Where groundwater encroaches shallower than 15 feet, the ground surface may be modified (raised) to increase the separation to meet this criteria.

In addition to the previously identified mitigation alternatives, surface and subsurface drainage systems should be considered. 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 contractor should provide safely sloped excavations or an appropriately designed and constructed braced-shoring system, in compliance with Occupational Safety and Health Administration (OSHA, 2005) guidelines, for employees working in an excavation that may expose employees to the danger of moving ground.

In our opinion, the clay soils should generally be considered a Type "B" soil when applying the OSHA guidelines. For these soil conditions, OSHA recommends a temporary slope inclination of 1H:1V or flatter for excavations 20 feet or less in depth.

In our opinion, the sand soils should generally be considered a Type "C" soil when applying the OSHA guidelines. For these soil conditions, OSHA recommends a temporary slope inclination of 1 1/2H:1V or flatter for excavations 20 feet or less in depth. In some cases (particularly "clean" sand soils with very few "fines", excavation cuts may be unstable at much shallower slopes. Excavations in sand soils should be carefully evaluated for stability, particular when in close proximity to existing structures, fences, etc.

Some surface sloughing may occur on the slope face at the slopes noted above. Steeper cut slopes may be utilized for excavations less than 4 feet deep depending on the strength, moisture content, and homogeneity of the soils as observed in the field. **Appropriate slope inclinations should be evaluated in the field by an OSHA-qualified "Competent Person"** (provided by the contractor) based on the actual conditions encountered. It is the responsibility of the contractor to confirm and implement the appropriate slopes required.

Excavations for the project may not encounter sandstone/claystone bedrock. The sandstone materials should generally be considered "Stable Rock" when applying the OSHA guidelines. For these conditions, OSHA indicates that temporary vertical excavations should remain intact while exposed. The claystone materials, if encountered

Some surface sloughing may occur on the slope face at the slopes noted above. Steeper cut slopes may be utilized for excavations less than 4 feet deep depending on the strength, moisture content, and homogeneity of the soils as observed in the field. Appropriate slope inclinations should be evaluated in the field by an OSHA-qualified "Competent Person" (provided by the contractor) based on the actual conditions encountered. It is the responsibility of the contractor to confirm and implement the appropriate slopes required.

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 each lot read and understand this report, and to carefully 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

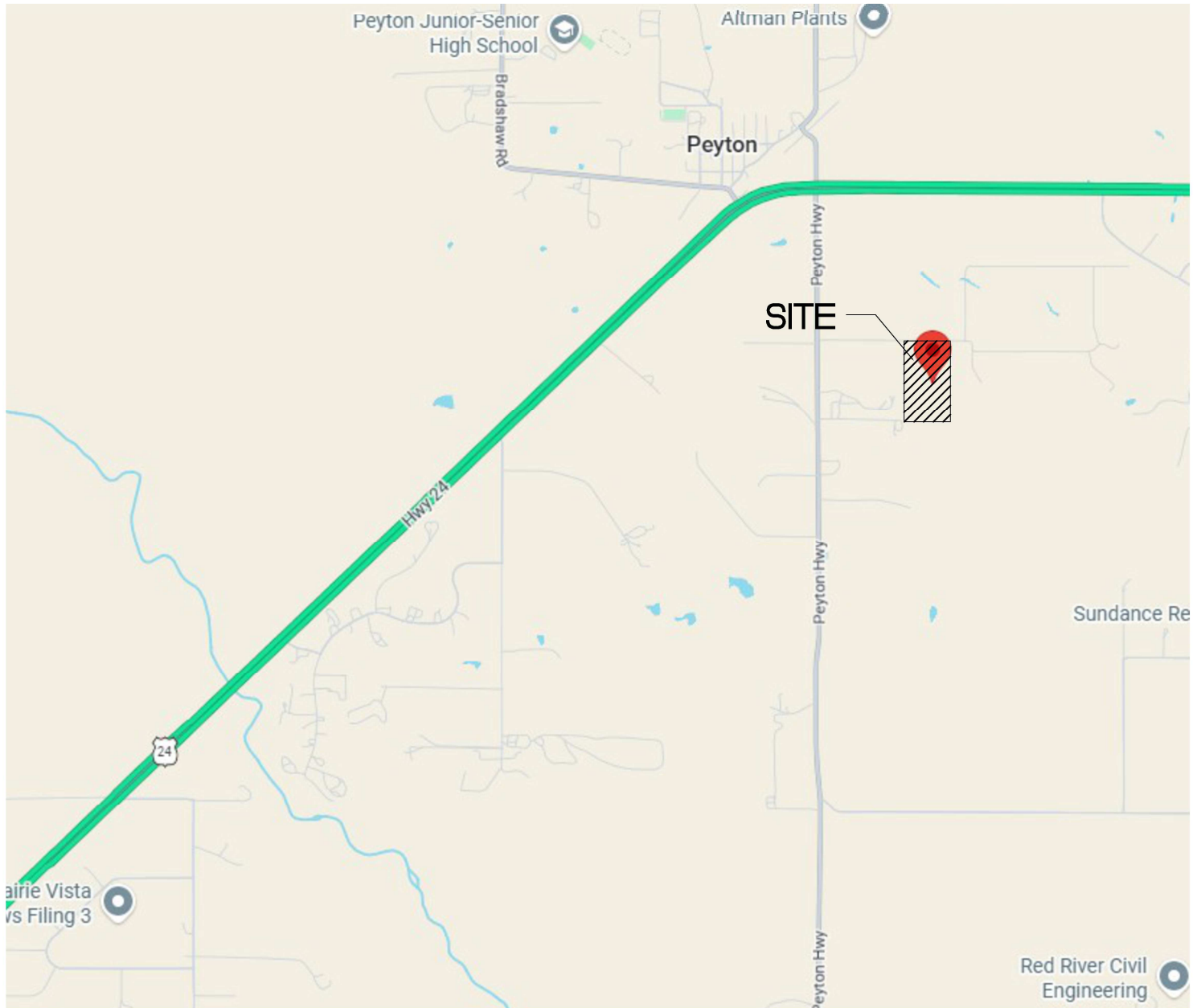
This report is for the exclusive purpose of providing geologic hazards information and preliminary geotechnical engineering recommendations. The scope of services did not include, either specifically or by implication, evaluation of wild fire hazards, environmental assessment of the site, or identification 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 **Signature Homes** 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 this report or analysis of the proposed development, from a geotechnical engineering point-of-view, please feel free to contact us.

FIGURES



NOT TO SCALE

Structural
Geotechnical



Materials Testing
Forensics

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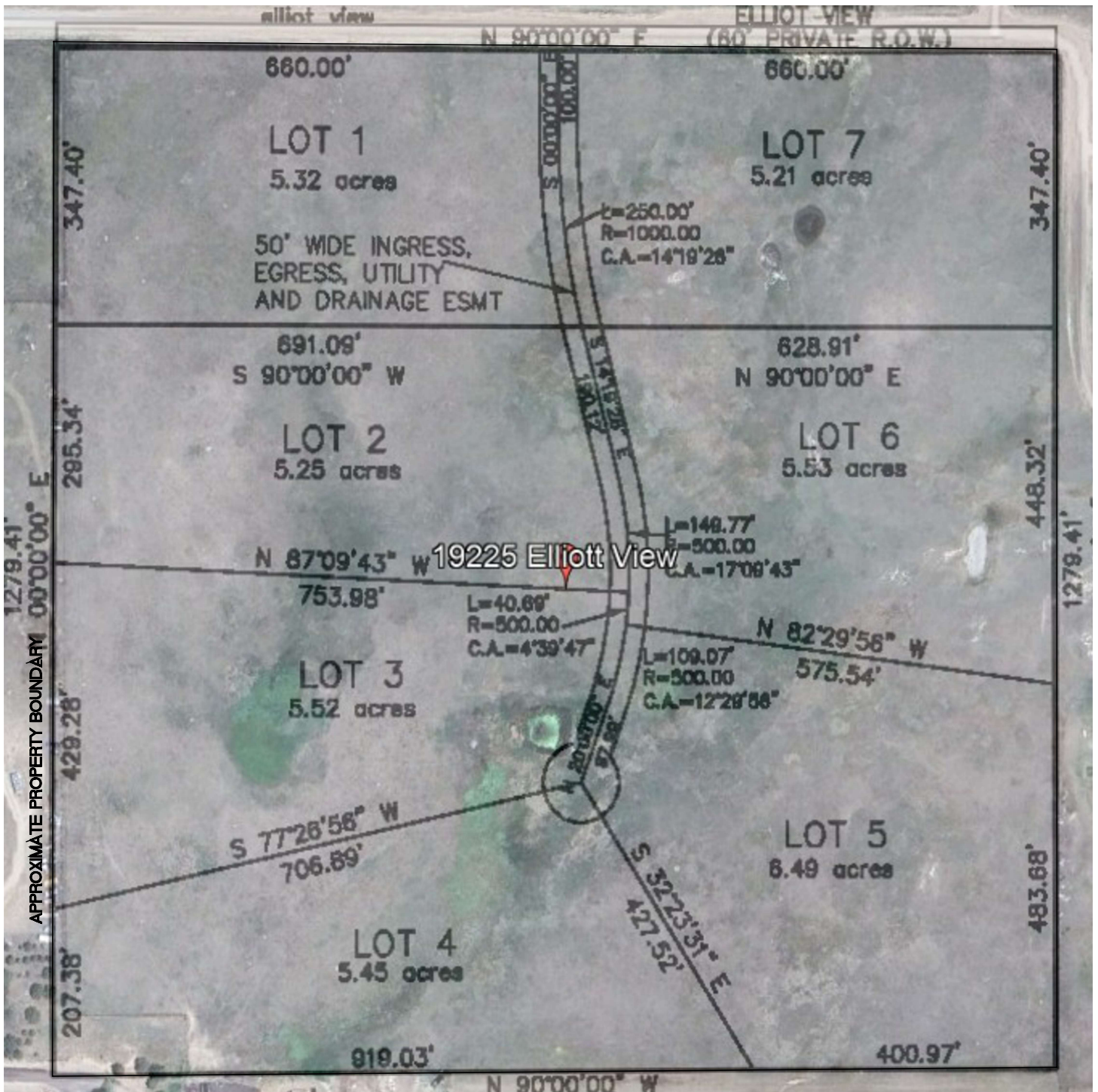
SITE VICINITY MAP

ANDON HEIGHTS
Currently Addressed: 19225 ELLIOTT VIEW
SCHEDULE NO. 3208000002
EL PASO COUNTY, COLORADO
SIGNATURE HOMES

JOB No. 197651

FIG No. 1

DATE 3-27-2026



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Materials Testing
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PROPOSED LOT LAYOUT

ANDON HEIGHTS

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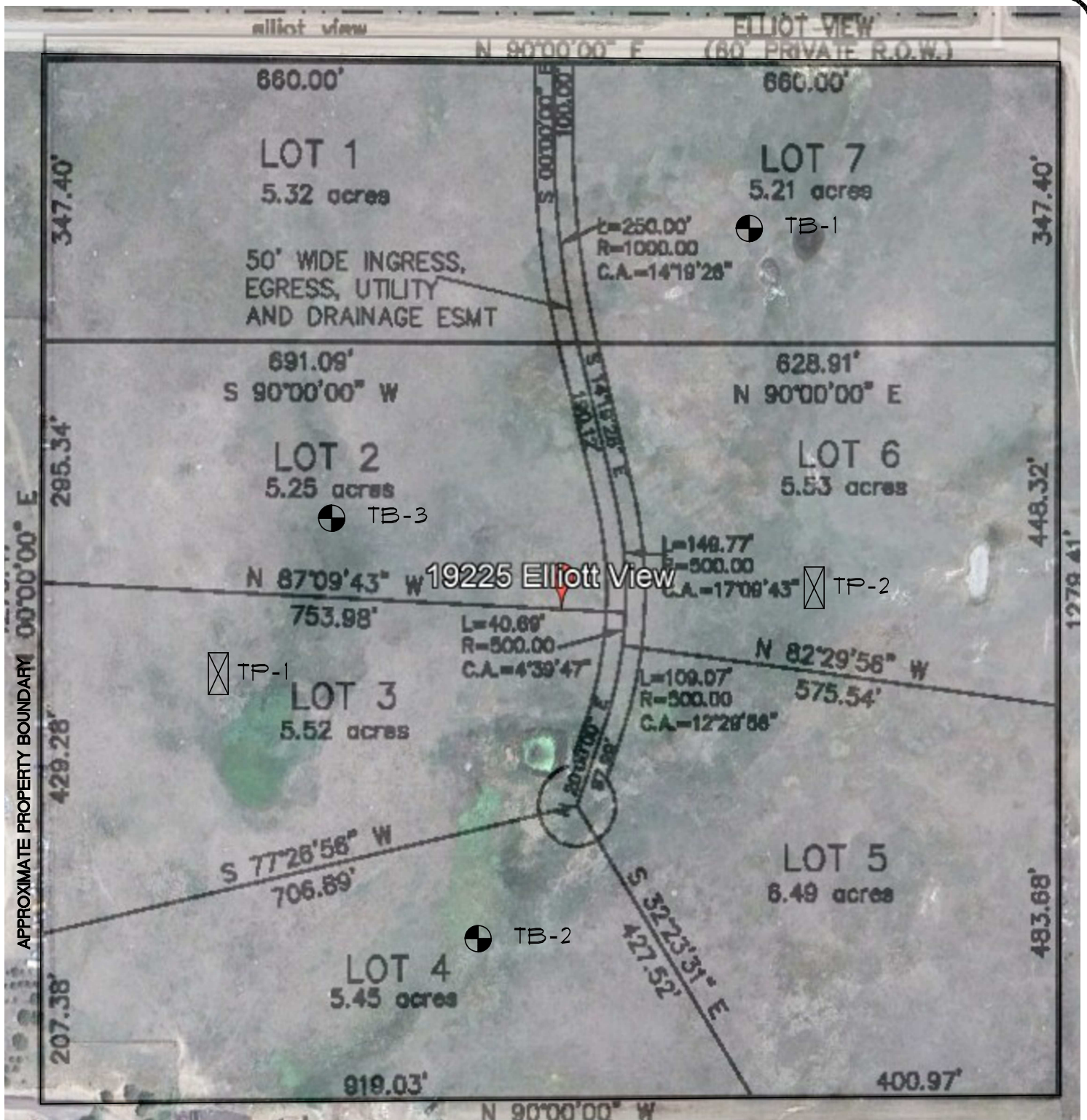
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FIG No. 2

DATE 3-27-2026



NOT TO SCALE



DENOTES APPROXIMATE
LOCATION OF TEST BORINGS



DENOTES APPROXIMATE
LOCATION OF TEST PITS

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TEST BORING/TEST PIT LOCATION PLAN

ANDON HEIGHTS

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FIG No. 3

DATE 3-27-2026

SOILS DESCRIPTION



CLAYSTONE



SANDSTONE



SANDY CLAY



SILTY SAND

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 (%)

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Geotechnical
Materials Testing

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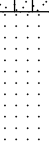
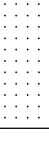
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EXPLANATION OF TEST BORING LOGS

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FIGURE No. 4

DATE Mar/27/2026

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: 2/12/26 GROUNDWATER @ 3.5 ' 3/9/26						DATE DRILLED: 2/12/26 GROUNDWATER @ 23.5 ' 3/9/26					
SAND, SILTY, grey, loose to medium dense, moist to wet	5			11	20.7	SAND, SILTY, light brown, loose, moist	5			9	1.7
	10			43	13.9	CLAY, SANDY, light brown, stiff to hard, moist	10			11	11.2
SANDSTONE, CLAYEY, dark grey, very hard, moist to wet	15			50/6"	16.9		15			18	18.8
	20			50/7"	16.6		20			44	21.0
						SANDSTONE, SILTY, dark grey, medium hard to very hard, moist to wet	25			50/8"	19.4
							30				
							35			50/6"	22.5

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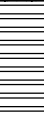
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TEST BORING LOG

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FIGURE No. 5

DATE Mar/27/2026

TEST BORING: 3 DATE DRILLED: 2/12/26 NO GROUNDWATER ON 3/9/26	DEPTH (FT)	SYMBOL	SAMPLES	BLOWS PER FT.	WATER CONTENT %	
CLAY, SANDY, light brown, stiff to hard, moist	5			9	18.6	
CLAYSTONE, SANDY, brown, medium hard, moist	10			44	14.4	
	15			50/8"	14.4	
	20			40	15.2	

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TEST BORING LOG

JOB No. 197651

FIGURE No. 6

DATE Mar/27/2026

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	20.7				0.4	17.1			
1	9.0	13.9		NP	NP	1.5	8.7			SW-SM
1	14.0	16.9								
1	19.0	16.6								
2	2.0	1.7		NP	NP		7.7			
2	7.0	11.2		34	20		64.2			CL
2	14.0	18.8	107.8					1,000	0.1	
2	19.0	21.0								
2	24.0	19.4								
2	34.0	22.5								
3	4.0	18.6								
3	9.0	14.4	115.2	36	19			1,000	2.0	
3	14.0	14.4								
3	19.0	15.2								

ROCKY MOUNTAIN GROUP

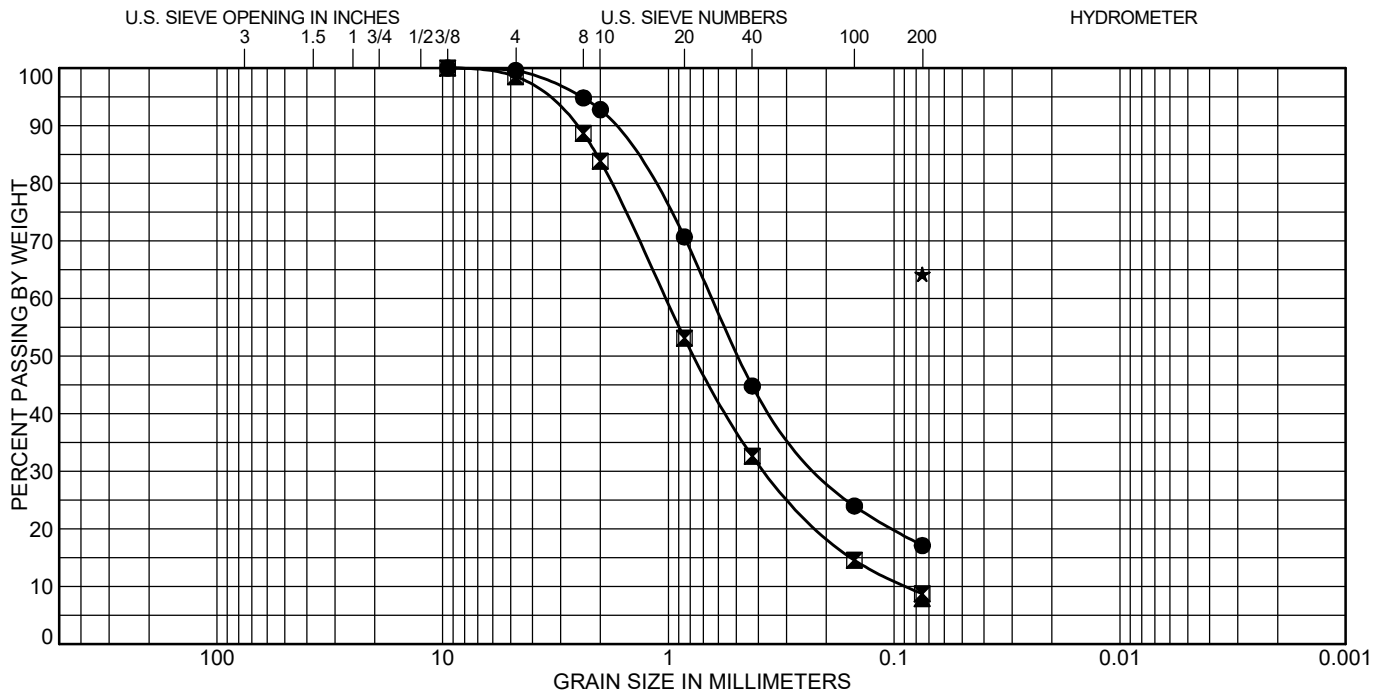
Structural
Forensics



Geotechnical
Materials Testing

SUMMARY OF LABORATORY TEST RESULTS

JOB No. 197651
FIGURE No. 7
PAGE 1 OF 1
DATE Mar/27/2026



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Test Boring	Depth (ft)	Classification	LL	PL	PI
● 1	4.0				
☒ 1	9.0	WELL-GRADED SAND with SILT(SW-SM)	NP	NP	NP
▲ 2	2.0		NP	NP	NP
★ 2	7.0	SANDY LEAN CLAY(CL)	34	14	20

Test Boring	Depth (ft)	%Gravel	%Sand	%Silt	%Clay
● 1	4.0	0.4	82.5	17.1	
☒ 1	9.0	1.5	89.8	8.7	
▲ 2	2.0			7.7	
★ 2	7.0			64.2	

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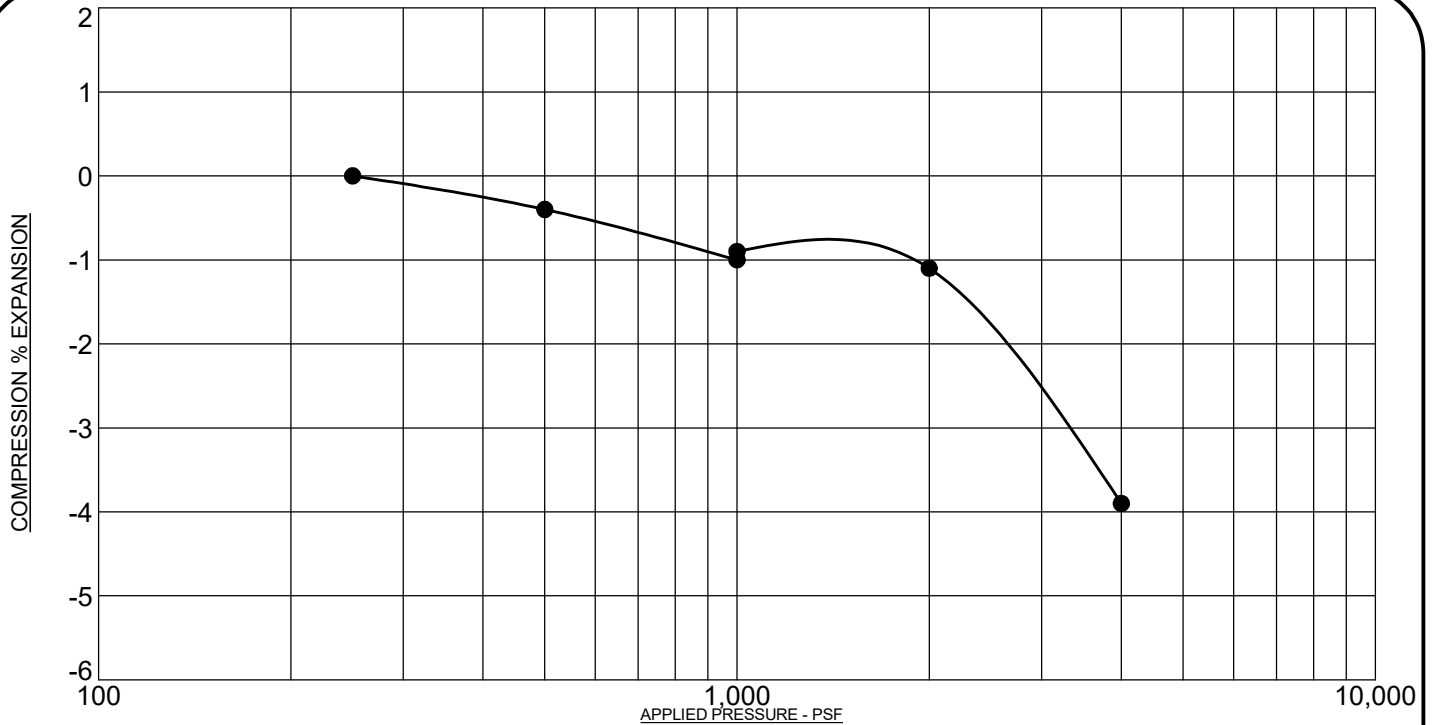
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SOIL CLASSIFICATION DATA

JOB No. 197651

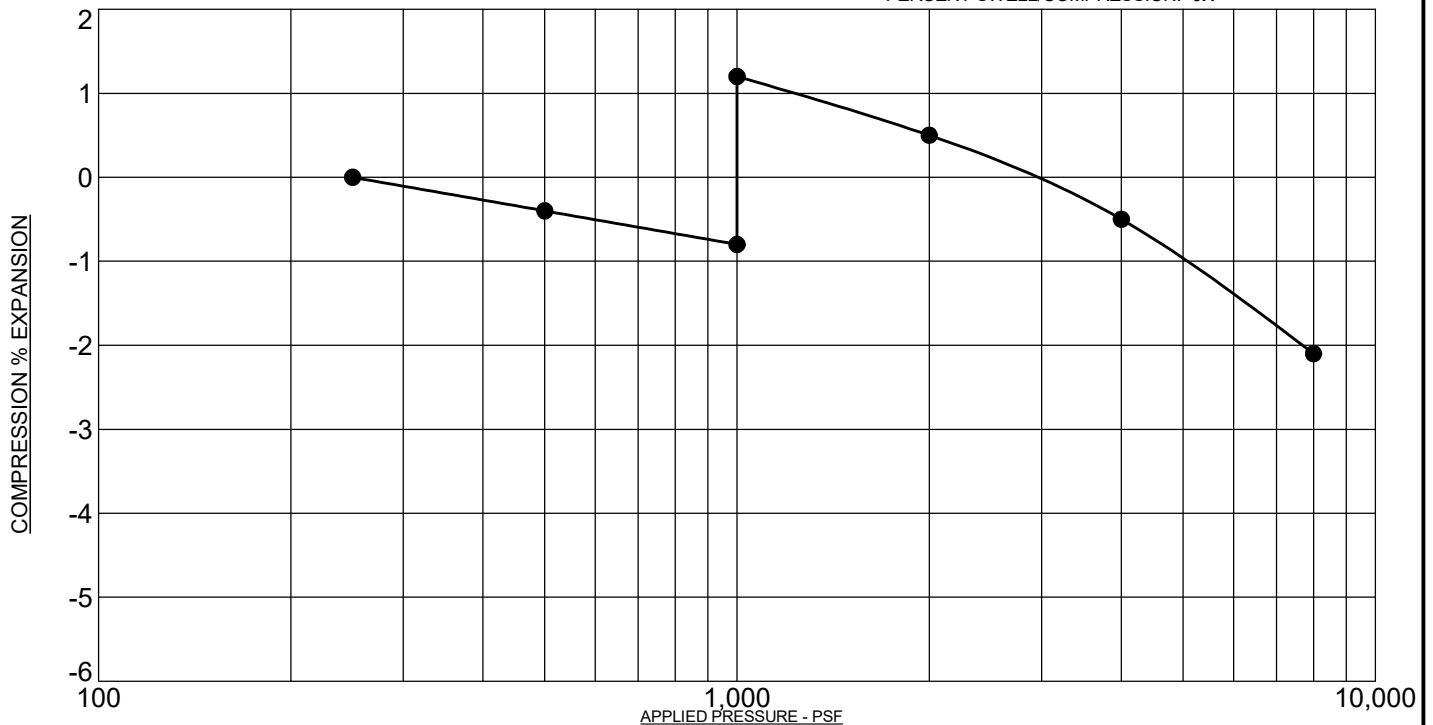
FIGURE No. 8

DATE Mar/27/2026



PROJECT: Andon Heights El Paso County, Colorado
 SAMPLE DESCRIPTION: Clay, sandy
 NOTE: SAMPLE WAS INUNDATED WITH WATER AT 1,000 PSF

SAMPLE LOCATION: 2 @ 14 FT
 NATURAL DRY UNIT WEIGHT: 107.8 PCF
 NATURAL MOISTURE CONTENT: 18.8%
 PERCENT SWELL/COMPRESSION: 0.1



PROJECT: Andon Heights El Paso County, Colorado
 SAMPLE DESCRIPTION: Clay, sandy
 NOTE: SAMPLE WAS INUNDATED WITH WATER AT 1,000 PSF

SAMPLE LOCATION: 3 @ 9 FT
 NATURAL DRY UNIT WEIGHT: 115.2 PCF
 NATURAL MOISTURE CONTENT: 13.9%
 PERCENT SWELL/COMPRESSION: 2.0

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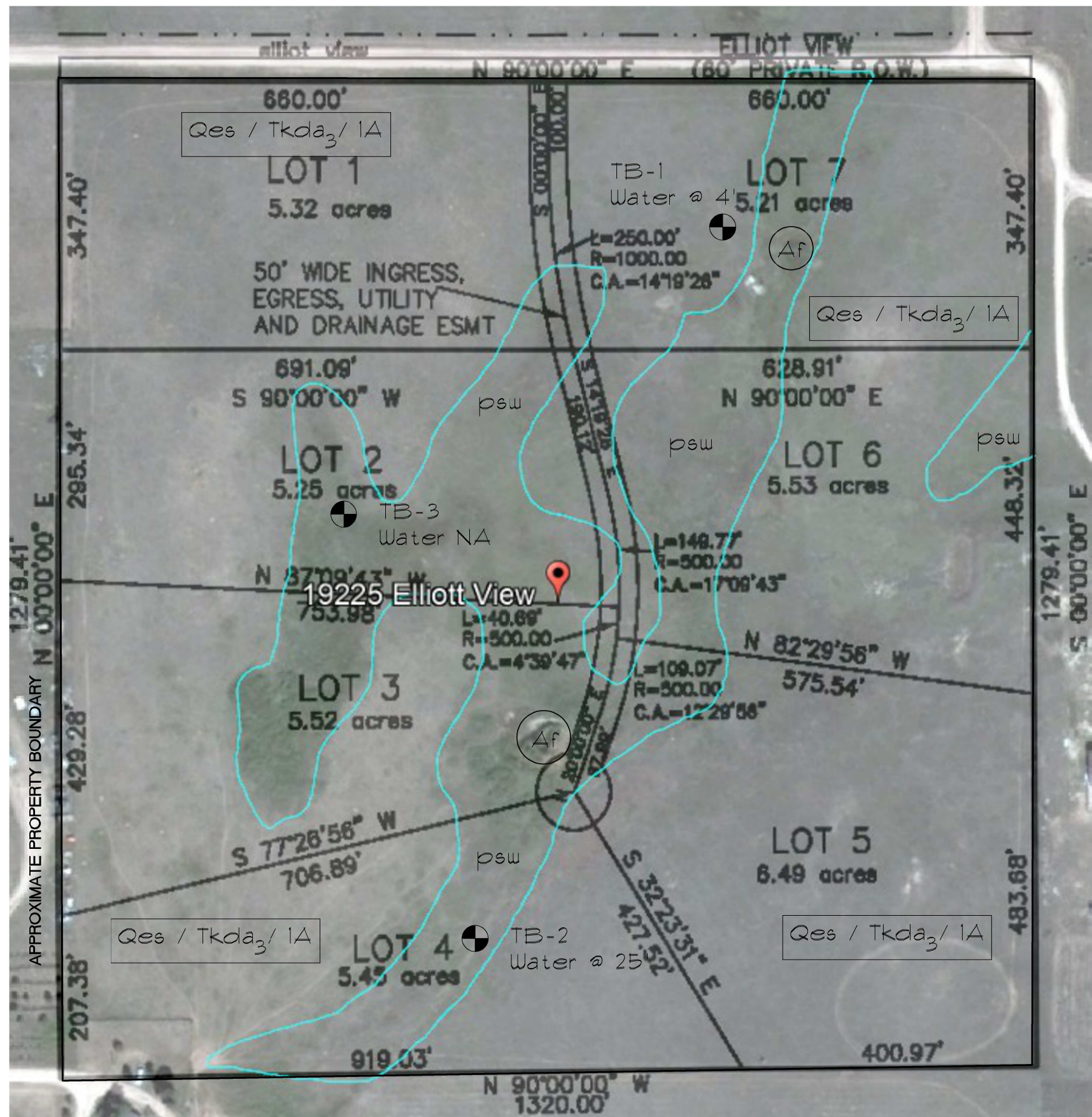
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SWELL/CONSOLIDATION TEST RESULTS

JOB No. 197651

FIGURE No. 9

DATE Mar/27/2026



GENERAL GEOLOGY

Qes - Eolian sand (Holocene and Pleistocene) - windblown sand that was deposited primarily in sheets rather than dunes. Typically, 1 to 10 feet thick.

Tkda₃ - Dawson Formation Facies 3 (Paleocene) - Moderately well sorted arkosic sandstone with interbedded seams of sandy claystone. Claystone contained in this unit may be prone to swelling when wet. This formation lies beneath the entire site at various depths.

psw - potential seasonally wet - areas that have historically collected surface water during high moisture events. These areas can be avoided with proper planning prior to development.

Af - Artificial Fill - fill remaining from the original excavation of the two ponds onsite. The ponds lie within the mapped *psw* areas. These areas should be avoided with the placement of residences and OWTS.

ENGINEERING GEOLOGY

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

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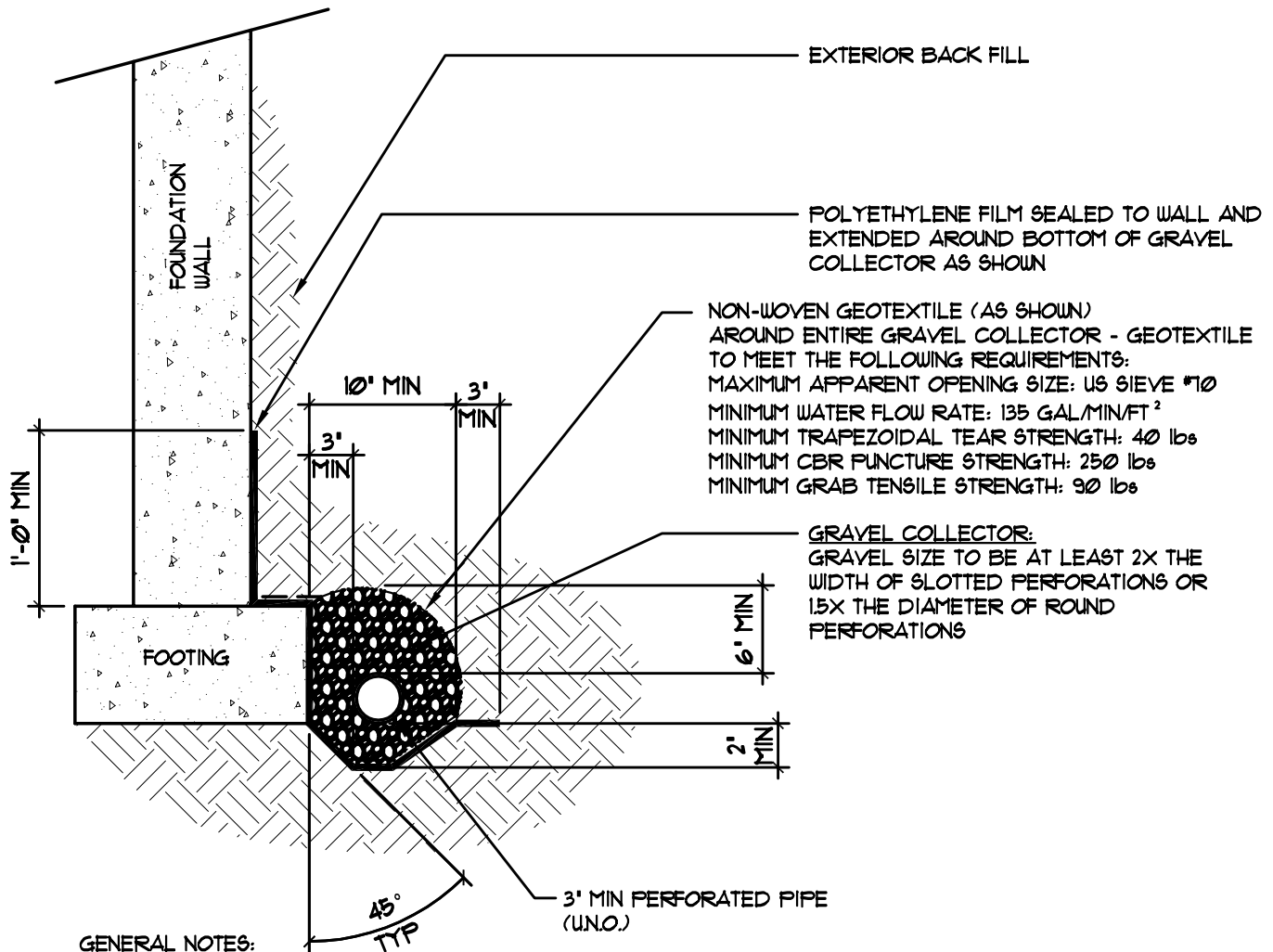
ANDON HEIGHTS
Currently Addressed:
19225 ELLIOTT VIEW
EPC SCHEDULE NO. 3208000002

EL PASO COUNTY, COLORADO
SIGNATURE HOMES

ENGINEER:	TM
DRAWN BY:	BG
CHECKED BY:	TM
ISSUED:	3-23-2026

ENGINEERING AND GEOLOGY MAP

SHEET No.
FIG-10



1. BOTTOM OF DRAIN PIPE SHALL BE AT OR BELOW BOTTOM OF FOOTING AT ALL LOCATIONS
2. ALL DRAIN PIPE SHALL BE PERFORATED PLASTIC, WITH THE EXCEPTION OF THE DISCHARGE PORTION WHICH SHALL BE SOLID, NON-PERFORATED PIPE.
3. DRAIN PIPE SHALL HAVE POSITIVE FALL THROUGHOUT.
4. DRAIN PIPE SHALL BE PROVIDED WITH A FREE GRAVITY OUTFALL, IF POSSIBLE. IF A GRAVITY OUTFALL CANNOT BE ACHIEVED, THEN A SUMP PIT AND PUMP SHALL BE USED. THE OUTFALL SHOULD EXTEND PAST BACKFILL ZONES AND DISCHARGE TO A LOCATION THAT IS GRADED TO DIRECT WATER OFF-SITE.
5. ALL DRAIN COMPONENTS SHALL BE RATED/APPROVED BY THE MANUFACTURER FOR THE INSTALLED DEPTH AND APPLICATION
6. DRAIN SYSTEM, INCLUDING THE OUTFALL OF THE DRAIN, SHALL BE OBSERVED BY QUALIFIED PERSONNEL PRIOR TO BACKFILLING TO VERIFY INSTALLATION.
7. A VERTICAL SEGMENT OF PERFORATED DRAIN PIPE, CAPPED AT THE TOP, SHALL EXTEND TO FINISH GRADE WITHIN ALL WINDOW WELLS.

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Engineers / Architects

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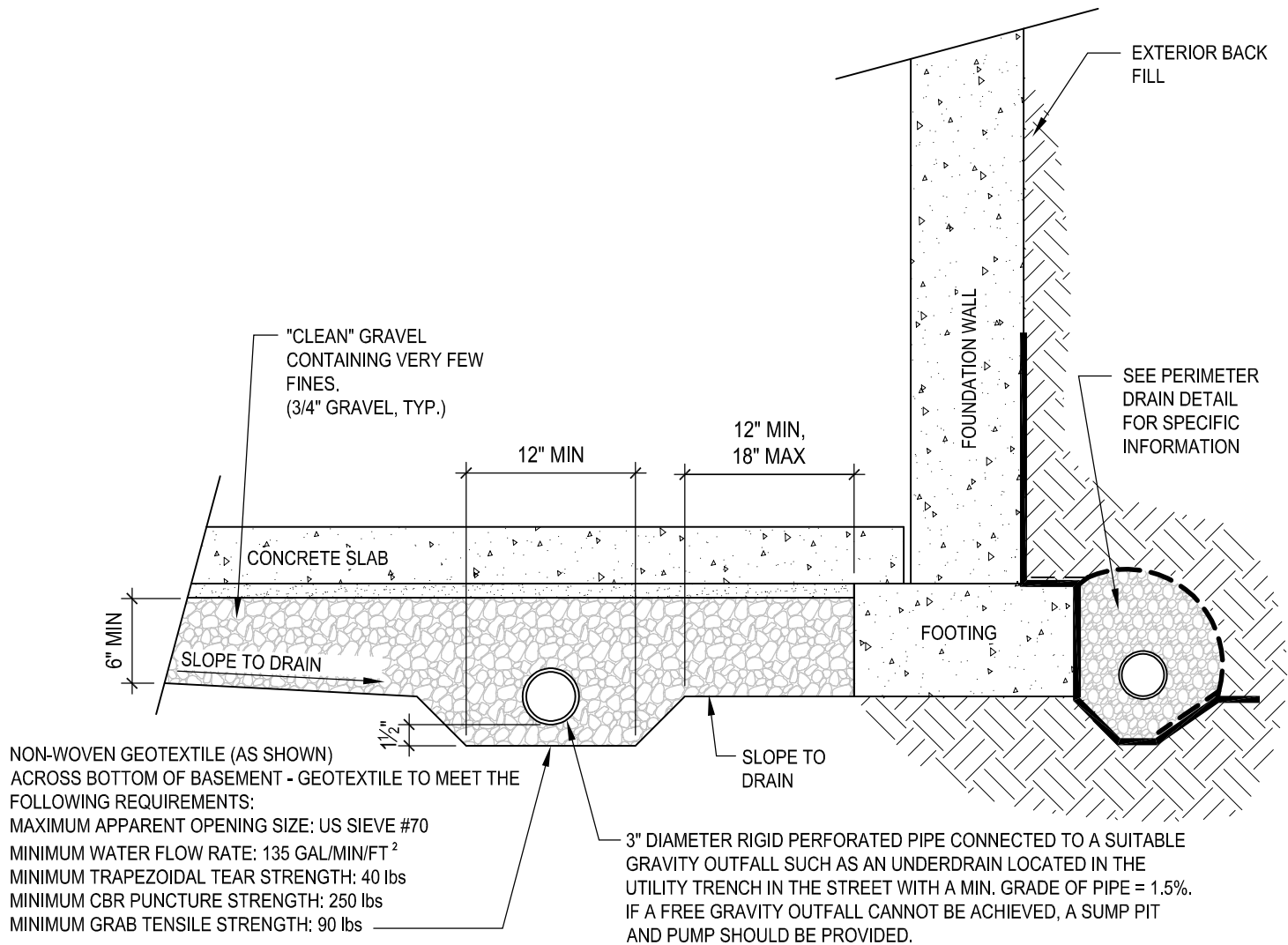
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Materials Testing
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PERIMETER DRAIN

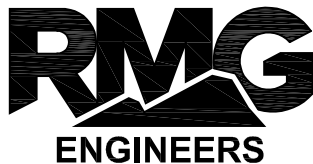
FIG No. 11



GENERAL NOTES:

1. ALL DRAIN PIPE SHALL BE PERFORATED PLASTIC, WITH THE EXCEPTION OF THE DISCHARGE PORTION WHICH SHALL BE SOLID, NON-PERFORATED PIPE.
2. DRAIN PIPE SHALL HAVE POSITIVE FALL THROUGHOUT.
3. DRAIN PIPE SHALL BE PROVIDED WITH A FREE GRAVITY OUTFALL, IF POSSIBLE. IF A GRAVITY OUTFALL CANNOT BE ACHIEVED, THEN A SUMP PIT AND PUMP SHALL BE USED. THE OUTFALL SHOULD EXTEND PAST BACKFILL ZONES AND DISCHARGE TO A LOCATION THAT IS GRADED TO DIRECT WATER OFF-SITE.
4. ALL DRAIN COMPONENTS SHALL BE RATED/APPROVED BY THE MANUFACTURER FOR THE INSTALLED DEPTH AND APPLICATION
5. DRAIN SYSTEM, INCLUDING THE OUTFALL OF THE DRAIN, SHALL BE OBSERVED BY QUALIFIED PERSONNEL PRIOR TO BACKFILLING TO VERIFY INSTALLATION.

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UNDERSLAB DRAIN

FIG No. 12

APPENDIX A

Additional Reference Documents

1. *Andon Heights, El Paso County*, prepared by Rocky Mountain Land Services, dated Noveer 22, 2023.
2. *Flood Insurance Rate Map, El Paso County, Colorado and Unincorporated Areas, Community Panel No. 08041C0376G*, Federal Emergency Management Agency (FEMA), effective December 7, 2018.
3. *Geologic Map of the Quadrangle, El Paso County, Colorado*, Morgan, M.L. and White, J.L, 2012, Colorado Geological Survey Open-File Report OF-12-05.
4. *Falcon Quadrangle, Environmental and Engineering Geologic Map for Land Use*, compiled by Dale M. Cochran, Charles S. Robinson & Associates, Inc., Golden, Colorado, 1977.
5. *Falcon Quadrangle, Map of Potential Geologic Hazards and Surficial Deposits*, compiled by Dale M. Cochran, Charles S. Robinson & Associates, Inc., Golden, Colorado, 1977.
6. Colorado's Decision Support Systems, CWCB, DWR, Well Permits,
7. *El Paso County, Master Plan for Mineral Extraction*, dated February 8, 1996.
8. *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.
9. *Pikes Peak Regional Building Department*: <https://www.pprbd.org/>.
<https://property.spatalest.com/co/elpaso/#/property/3208000002> *Colorado Geological Survey*
10. *USGS Geologic Map Viewer*: <http://coloradogeologicalsurvey.org/geologic-mapping/6347-2/>.
11. *Historical Aerials*: <https://www.historicaerials.com/viewer>, Images dated 1952, 1955, 1968, 1983-1985, 1999, 2005, 2009, 2011, 2013, 2015, 2017, 2019, 2021, and 2023.
12. *USGS Historical Topographic Map Explorer*: <http://historicalmaps.arcgis.com/usgs/> Colorado Springs, Falcon Quadrangle dated 1953, 1960, 1983 and 2022.
13. *Google Earth Pro*, Imagery dated 1999, 2003-2006, 2011, 2015, 2017, 2019, 2022, and 2024.

APPENDIX B

Wastewater Study – prepared by RMG

Job No. 197651

March 27, 2026

Signature Homes
655 S. Pointe Court, Ste. 200
Colorado Springs, CO 80906

Re: Wastewater Study
Andon Heights
Currently addressed as: 19225 Elliott View
EPC Schedule No. 3208000002
El Paso County, Colorado

Dear Mr. Andon:

As requested, personnel of RMG Engineers (RMG) 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. 3208000002**, currently addressed as 19225 Elliott View, which consists of 38.77 acres and is zoned A-35.

It is our understanding the 38.77-acre parcel is to be subdivided into seven (7) lots. The lot sizes are to range between 5.21 and 6.49 acre lots. The approximate location of the site is shown on the Site Vicinity Map, Figure 1.

The subdivision is to be accessed from one new road extending south from Elliott View. Each lot is to be serviced by an individual wastewater treatment system and well. Preliminary grading plans 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

Reports of previous geotechnical engineering/geologic investigations for this site were not available for our review. RMG completed a geologic investigation in conjunction with this study and it is listed below:

1. *Soil and Geology Study, Andon Heights, 19225 Elliott View, El Paso County, Colorado*, prepared by RMG Engineers, Job No. 197651, dated March 27, 2026.

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

SITE CONDITIONS

Personnel of RMG performed a reconnaissance visit on March 9, 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) 8-foot deep test pits were performed on proposed Lots 3 and 6, 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 and weeds across the majority of the site. Taller grasses and cattails were observed near the three man-made ponds. The man-made ponds were dry. No deciduous trees are located on the property.

The following conditions were observed with regard to the 38.77-acre parcel:

- A well currently **does not** exist on the existing 38.77-acre site;
- No runoff or irrigation features anticipated to cause deleterious effects to treatment systems on the site were observed. However, areas that may be prone to fluctuating seasonal surface water were observed;
- 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 residences 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 the proposed subdivision. 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. 08041C0375G, effective December 7, 2018 indicates that the proposed treatment areas are not located within an identified floodplain.

SOIL EVALUATION

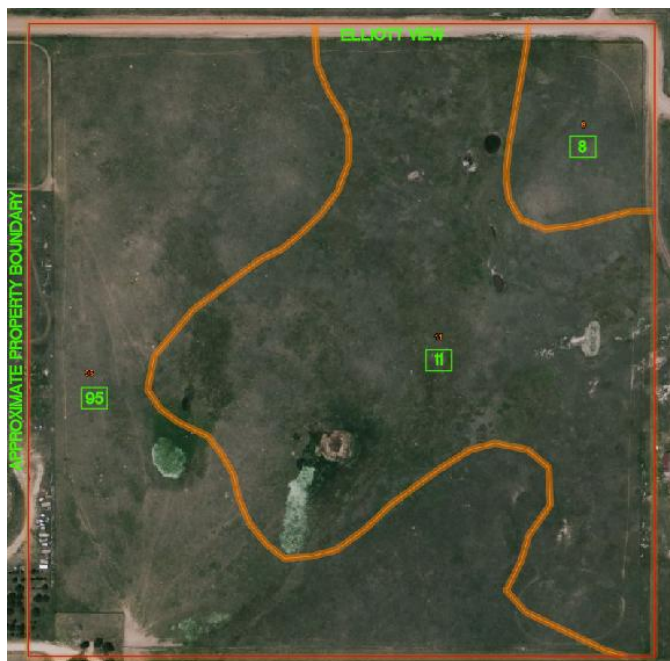
Personnel of RMG performed a soil evaluation to include two (2) 8-foot deep test pits, on March 9, 2026 (Test Pit TP-1 and TP-2), utilizing the visual and tactile method for the evaluation of the site soils. The test pits were excavated in areas that appeared most likely to determine if shallow groundwater was encountered. 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:

- **Blakeland loamy sand** (Map Unit 8) with 1 to 9 percent slopes. The Blakeland loamy sand was mapped by the USDA to encompass a small portion of the northeast corner of the property. Properties of the loamy sand include somewhat excessively drained soils, depth of the water table is anticipated to be greater than 80 inches (6.5 feet), runoff is anticipated to be low, frequency of flooding and/or ponding is none, and landforms include hills and flats;
- **Bresser sandy loam, cool, 0 to 3 percent slopes** (Map Unit 11). The Bresser sandy loam was mapped by the USDA to encompass the majority of the central portion of the property. Properties of the sandy loam include well drained soils, depth of the water table is anticipated to be greater than 80 inches (6.5 feet), runoff is anticipated to be low, frequency of flooding and/or ponding is none, and landforms include broad and flat interfluvies.

- **Truckton loamy sand** (Map Unit 95) was mapped to encompass the majority of the western and southern portion of the property. Properties of the Truckton loamy sand include well drained soils, depth of the water table is anticipated to be greater than 80 inches (6.5 feet), runoff is anticipated to be low, frequency of flooding and/or ponding is none, and landforms include interfluves and fan remnants.

The USDA Soil Survey Map is presented below:



Groundwater and bedrock were not encountered in the test pits observed 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 surface water levels were observed in test pit TP-1 at a depth of approximately 4 feet. Redoximorphic features were not observed in TP-2, but the soils were moist to the touch.

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 with planning and proper placement. The LTAR values ranged between 0.15 and 0.60 for the on-site

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 will likely 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 R-0) is encountered at the time of the site specific OWTS evaluation, an "engineered system" will be required.

Additionally, based on the depth of the limiting layer (evidence of seasonally fluctuating surface water) encountered at a depth of 4 feet below the existing ground surface on Lot 7, the maximum depth of the OWTS components may be limited, or mound systems (above finished ground surface) may be required.

LIMITATIONS

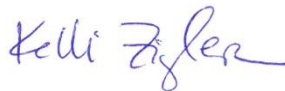
The information provided in this report is based upon the subsurface conditions observed in the profile pit excavations and accepted engineering procedures. The subsurface conditions encountered in the excavation for the treatment area may vary from those encountered in the test pit excavations. Therefore, 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



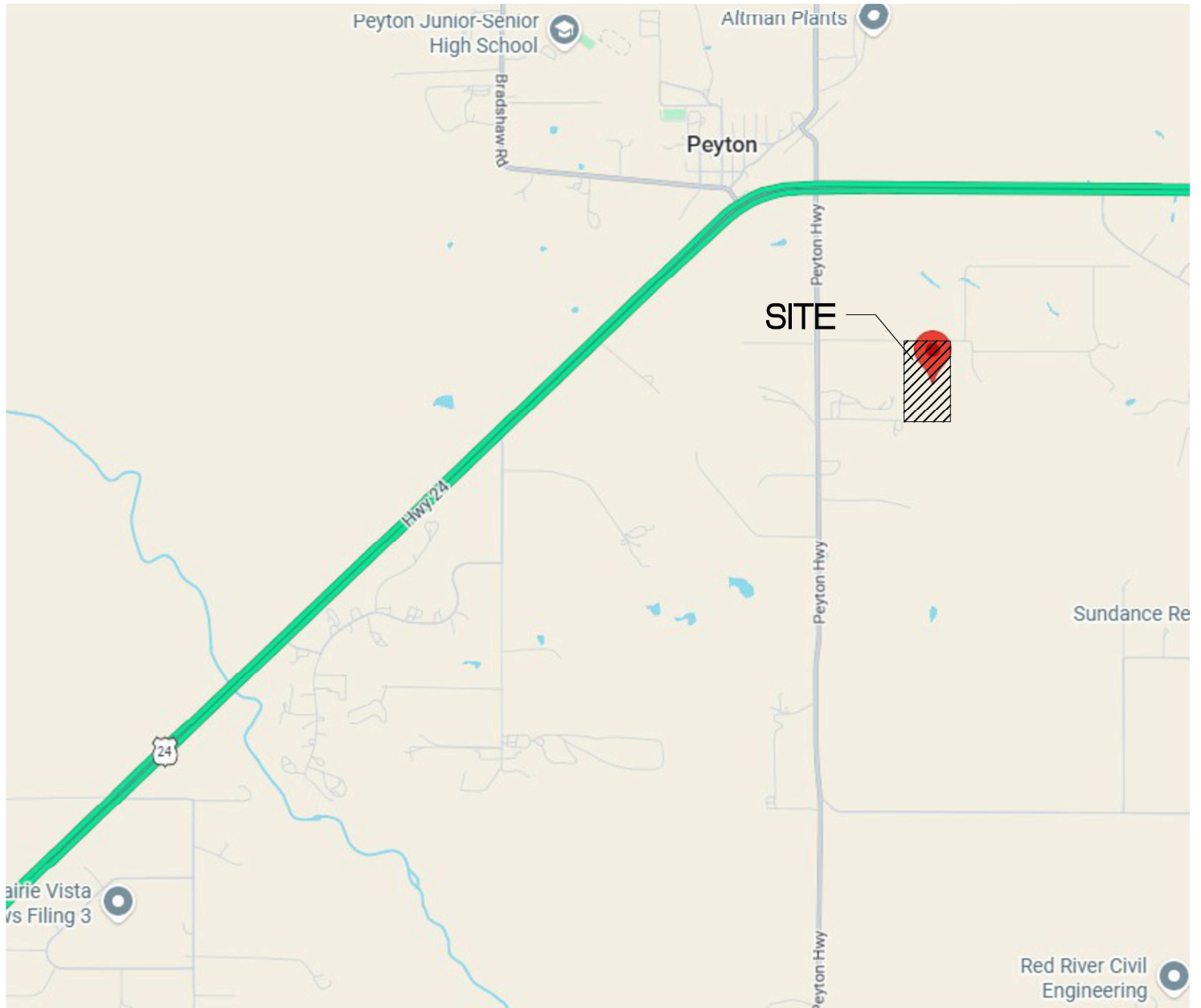
Kelli Zigler
Geotechnical Group Director

Reviewed by,

RMG Engineers

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





NOT TO SCALE

Structural
Geotechnical



Materials Testing
Forensics

SOUTHERN COLORADO OFFICE
5085 LIST DRIVE, SUITE 200, COLORADO SPRINGS, CO 80919
(719) 548-0600 ~ WWW.RMGENGINEERS.COM
SOUTHERN COLORADO, DENVER METRO, NORTHERN COLORADO

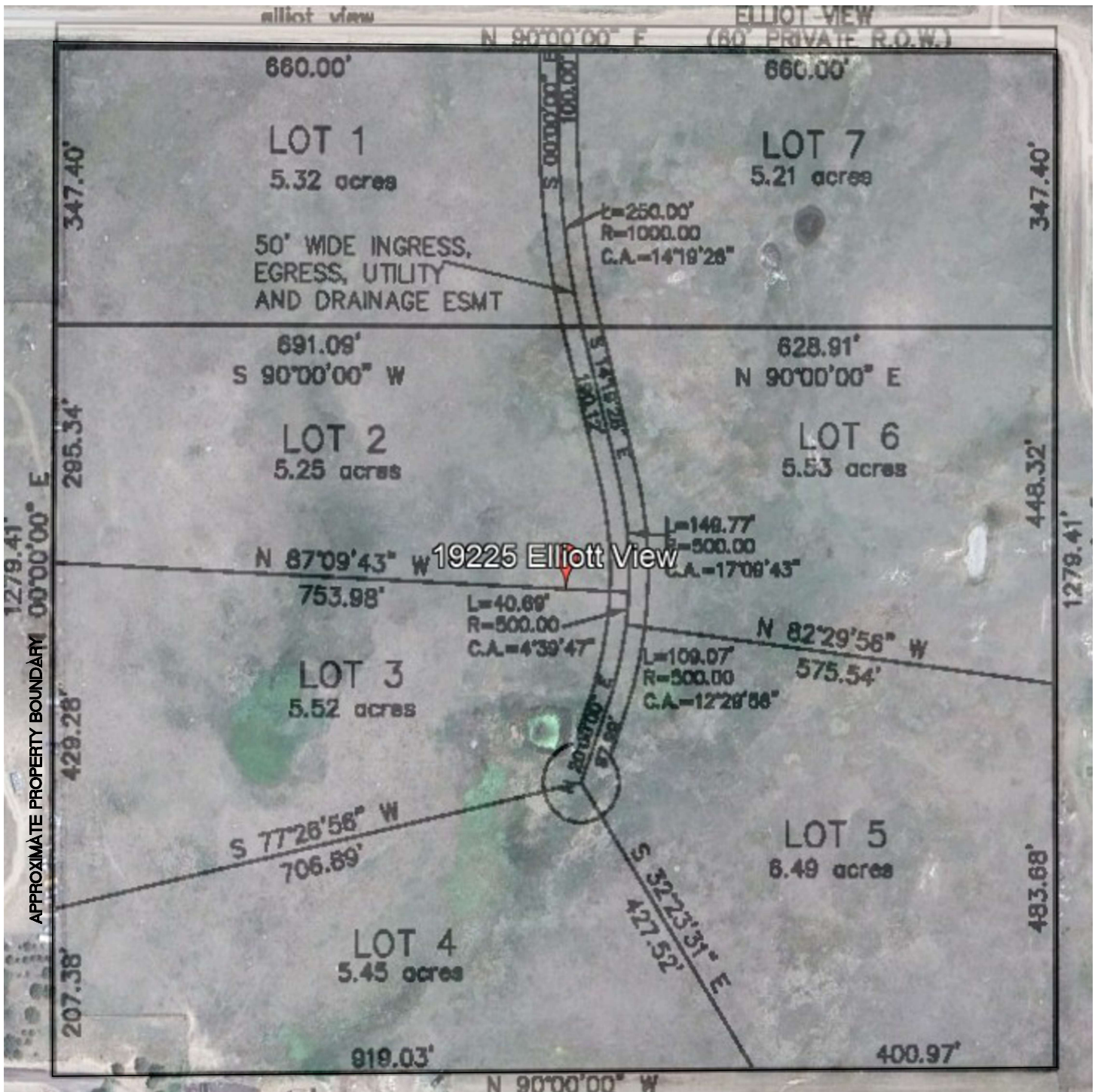
SITE VICINITY MAP

ANDON HEIGHTS
Currently Addressed: 19225 ELLIOTT VIEW
SCHEDULE NO. 3208000002
EL PASO COUNTY, COLORADO
SIGNATURE HOMES

JOB No. 197651

FIG No. 1

DATE 3-27-2026



NOT TO SCALE

Architecture
Structural
Geotechnical



Engineers / Architects

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Materials Testing
Forensics
Civil / Planning

PROPOSED LOT LAYOUT

ANDON HEIGHTS

Currently Addressed: 19225 ELLIOTT VIEW

SCHEDULE NO. 3208000002

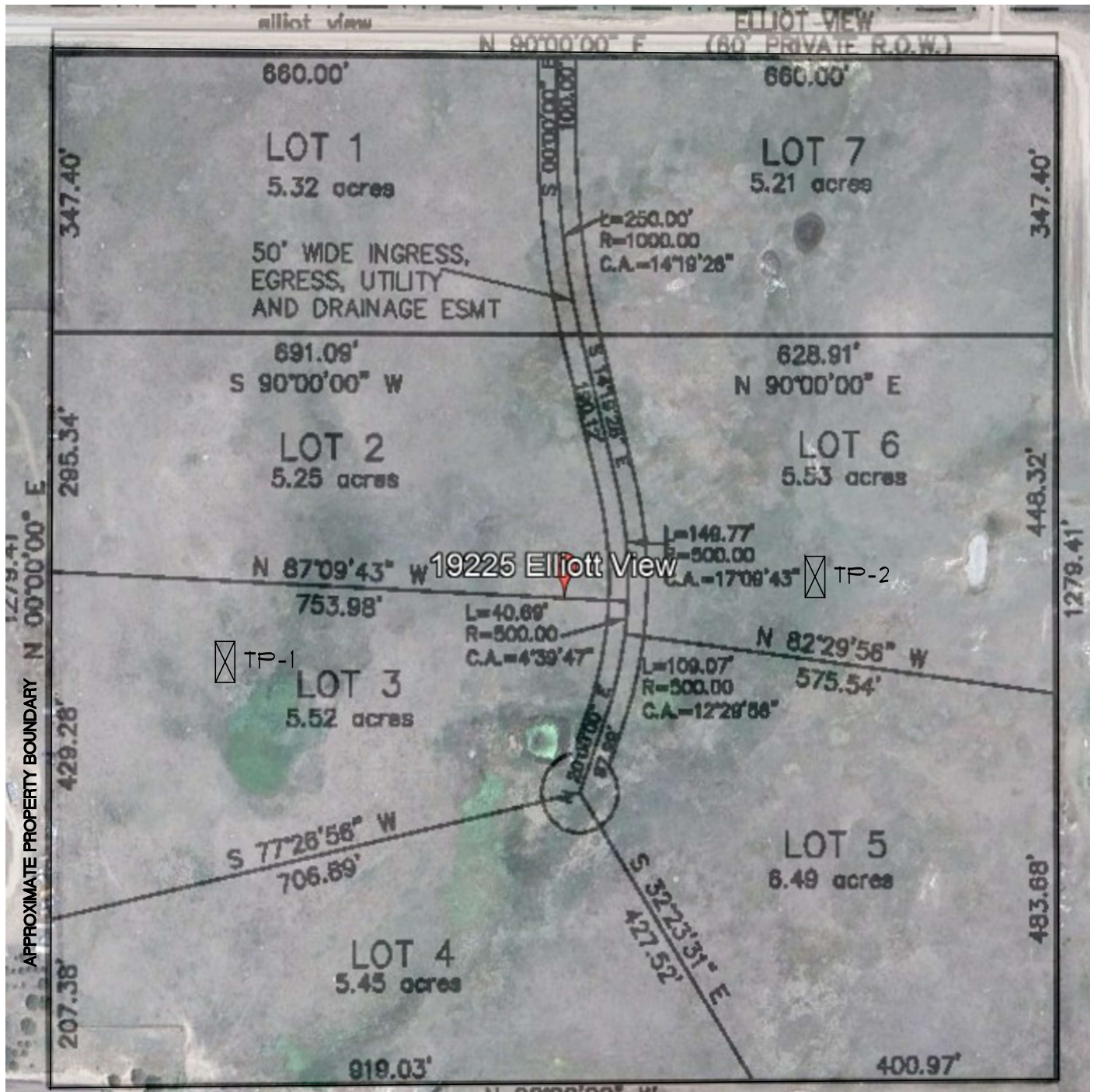
EL PASO COUNTY, COLORADO

SIGNATURE HOMES

JOB No. 197651

FIG No. 2

DATE 3-27-2026



NOT TO SCALE

X DENOTES APPROXIMATE
LOCATION OF TEST PITS

Architecture
Structural
Geotechnical



Engineers / Architects

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Materials Testing
Forensics
Civil / Planning

TEST PIT LOCATION PLAN

ANDON HEIGHTS
Currently Addressed: 19225 ELLIOTT VIEW
SCHEDULE NO. 3208000002
EL PASO COUNTY, COLORADO
SIGNATURE HOMES

JOB No. 197651

FIG No. 3

DATE 3-27-2026

TEST PIT TP-1			
DATE OBSERVED: 3/9/2026			
SOIL DESCRIPTION	DEPTH (FT)	SYMBOL	SOIL TYPE
0 - 1.5 FT SANDY LOAM (SINGLE-GRAIN)			2
1.5 - 8.0 FT SANDY LOAM (BLOCKY, WEAK)	2ft		2A
INDICATIONS OF REDOX	4ft		
	6ft		
	8ft		

TEST PIT TP-2			
DATE OBSERVED: 3/9/2026			
SOIL DESCRIPTION	DEPTH (FT)	SYMBOL	SOIL TYPE
0 - 1.5 FT SANDY LOAM (SINGLE-GRAIN)			2
1.5 FT - 8.0 FT SANDY LOAM (BLOCKY, WEAK)	2ft		2A
	4ft		
	6ft		
	8ft		
@ 8.0 FT SANDY LOAM (GRANULAR, MASSIVE)			4A

SOIL DESCRIPTIONS



SANDY LOAM
(2A)



SANDY LOAM (2)

PROFILE PIT LOGS

ANDON HEIGHTS
Currently Addressed:
19225 ELLIOTT VIEW
EPC SCHEDULE NO. 3208000002

EL PASO COUNTY, COLORADO
SIGNATURE HOMES

JOB No. 197651

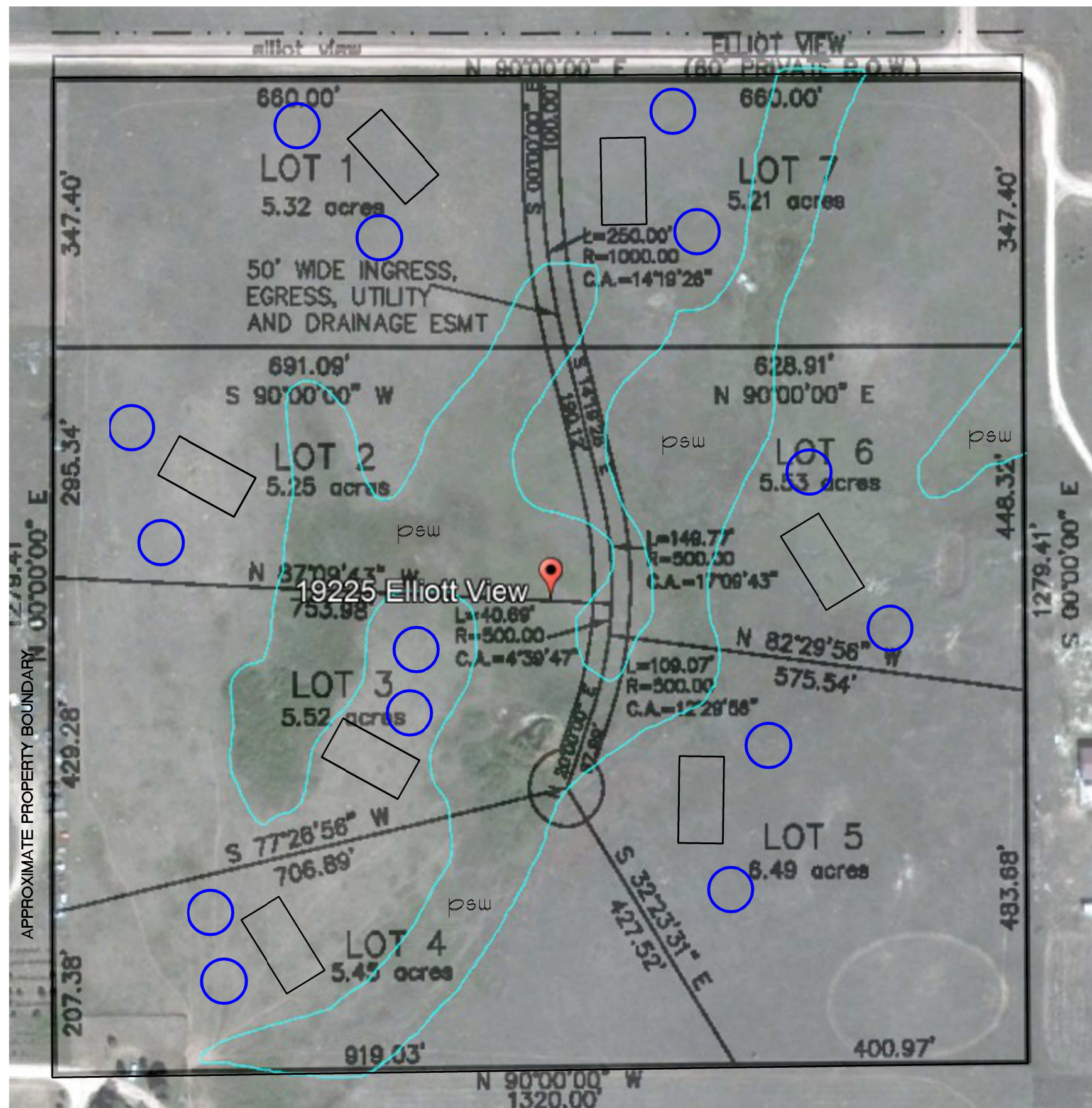
FIG No. 4

DATE 3-27-2026



ROCKY MOUNTAIN GROUP

Southern Office
Colorado Springs, CO
80918
(719) 548-0600
Central Office:
Englewood, CO 80112
(303) 688-9475
Northern Office:
Greeley / Evans, CO 80620
(970) 330-1071



psw - potential seasonally wet - areas that have historically collected surface water during high moisture events. These areas can be avoided with proper planning prior to development.

-  DENOTES POSSIBLE LOCATIONS FOR OWTS
-  DENOTES POSSIBLE LOCATION FOR RESIDENCES

JOB No. 197651

Materials Testing
Forensics

RMG
ENGINEERS

Structural
Geotechnical

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ANDON HEIGHTS

Currently Addressed:

19225 ELLIOTT VIEW

EPC SCHEDULE NO. 3208000002

EL PASO COUNTY, COLORADO

SIGNATURE HOMES

ENGINEER: TM
DRAWN BY: KZ
CHECKED BY: TM

ISSUED: 3-21-2026

SEPTIC SUITABILITY
MAP

SHEET No.

FIG-5