

Eagle Forest PUD OWTS Report Excerpt (Pages 6 and7)

Legend and Explanation of Figure 4/Sewage Disposal Characteristics Map

Site Conditions

Based upon the geologic characteristics and constraints as observed, profile holes, and experience, sewage disposal characteristics and limitations have been evaluated. These various areas are shown on Figure 4 and a discussion of these follows.

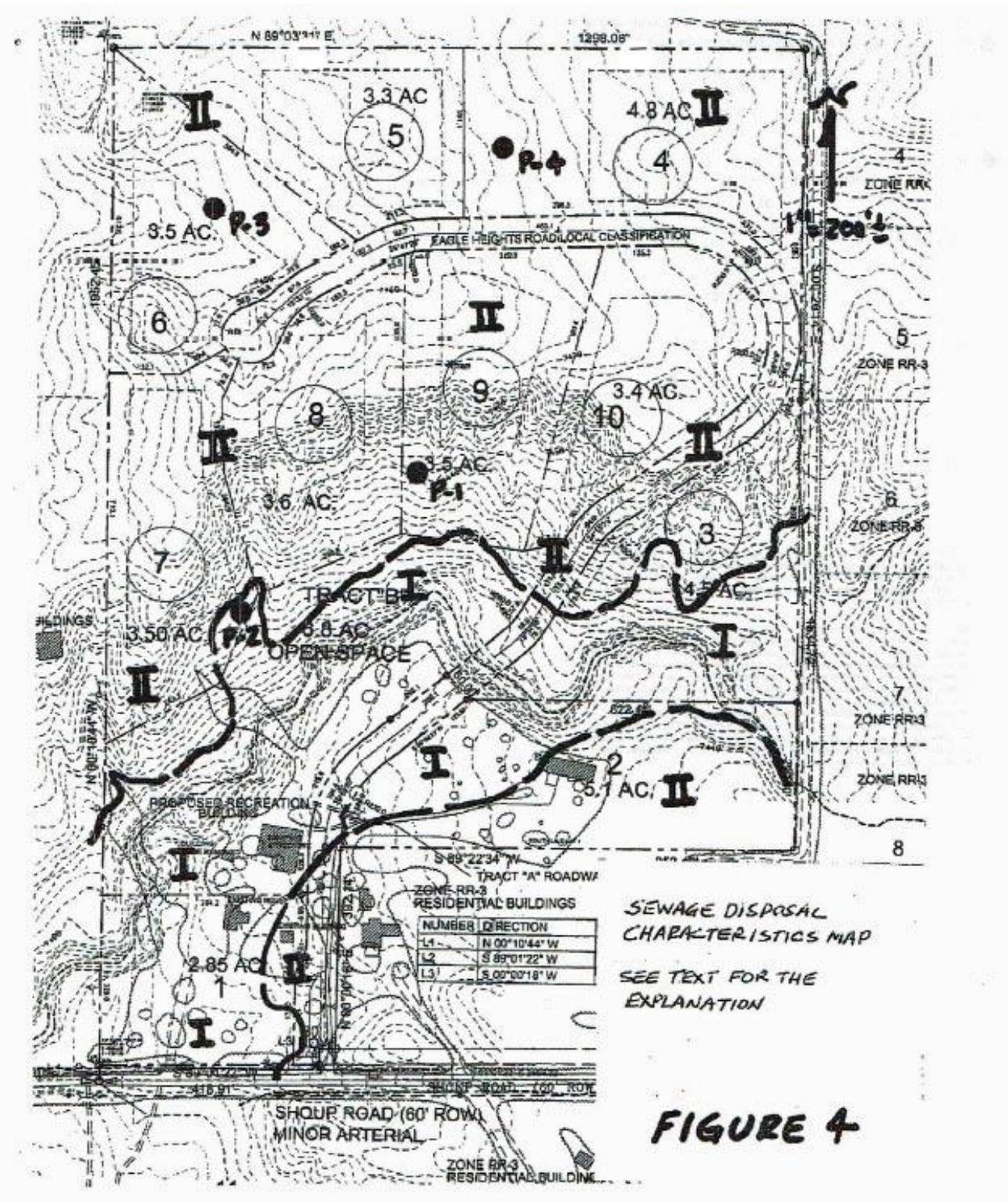
Area I: Area I consists of that portion of the site characterized by thin to thicker surficial deposits and generally acceptable percolation rates. These areas are characterized by colluvial and older alluvial soils over the Dawson Arkose and is located mostly south of Burgess Creek. With some exploration, it is felt that in many (if not most) cases it will be possible to locate a 'standard' septic and soil absorption system in Area I, although local shallow soils (shallow, dense bedrock) may be encountered in these areas and thus will require some form of alternate system. Engineered designed systems are recommended in this area.

Area II: Area II consists of that portion of the site interpreted as underlain by shallow soils, over shallow to moderately deep residually weathered bedrock, over dense bedrock. In most of this area it is felt that dense bedrock will be too shallow and/or too impermeable for conventional soil absorption systems, and alternate engineered designed systems may be required.

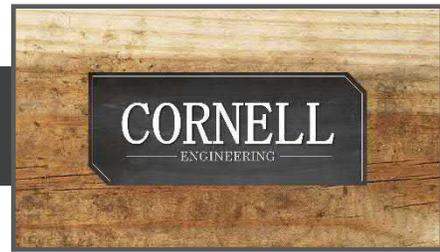
Evaluation

Figure 4 is a Sewage Disposal Characteristics Map plotted on a copy of the Preliminary Plan of the subdivision. Preliminary Plan review was conducted to ensure each lot has an acceptable area for a house, well, and **two** areas (primary and 'replacement') for individual disposal systems utilizing soil absorption. The evaluation considered the lot size, location relative to identified constraints (percolation rate, shallow-dense bedrock, Burgess Creek, and slope), and required setbacks from wells, occupied structures and other setback requirements as contained in the El Paso County Individual Sewage Disposal System Regulations (October 11, 1996).

It was assumed as part of this evaluation that each house would have a footprint of about 2,800 square feet (40'x70'), include 4 bedrooms (resulting in a discharge of about 600 gallons per day), and the percolation rate would be 40 minutes per inch (the slowest rate measured in the percolation tests performed on the site was 32 minutes per inch). Based on these assumptions, our calculations indicate an absorption area of about 1,821 square feet would be required. Using absorption trenches, this translates to about 5,000 square feet for each absorption area. **Two** areas or sites (primary and 'replacement') for soil absorption purposes were located on each lot, again considering the above assumptions, constraints and required setbacks.



Note that Figure 4 considers all the items required to be mapped in LDC Section 8.4.8.



June 15, 2020

Project 200606

Kevin Bristow & Ty Klikus
102 S Tejon Street, Suite 100
Colorado Springs, CO 80903

Re: Performance Report/Sewage Disposal Evaluation Update
Eagle Forest Subdivision
El Paso County, CO 80908

Reference 1: The Original *Performance Report/Sewage Disposal Evaluation (Chapter V-Section 51.7)* for Eagle Heights Subdivision, El Paso County, Colorado, by Front Range Geotechnical, Inc, Job No. 13470, dated January 24, 2005.

Gentlemen:

As requested, personnel of Cornell Engineering, LLC have visited the site and reviewed the original onsite water treatment system report (OWTS) referenced above. Our site visit was conducted on June 1, 2020.

Purpose

The purpose of our visit was to observe the current site conditions and verify any changes to the native grades, topography, and vegetation.

Background

The original OWTS report referenced above was conducted prior to the June 2013, Black Forest wildfire. The 2013 wildfire originated near State Highway 83 and Shoup Road approximately five miles west of the subject property. Over the course of approximately nine days the fire burned more than 14,280 acres and destroyed over 500 homes. The subject site was heavily treed prior to 2013 with native ponderosa pines. Following the 2013 wildfire, however, all the vegetation and pine trees north of Burgess creek were consumed in the fire.

Observations

The general topography and underlying subsurface soils/geology were unaffected by the 2013 wildfire. Whereas the site drainage was affected by the loss of the trees north of Burgess Creek. At the time of our site visit, the affected trees had been completely removed from the site and native grasses had been reestablished. Grasses were patchy and provided moderate surface coverage for the underlying subgrade. Removal of burned trees on the adjacent lots to the east had not yet occurred.

Analysis/Discussion

The change in tree coverage across much of the subject site and neighboring lots has dramatically changed the overall drainage of the site and neighboring lots. Fewer obstructions generally correspond to increased surface flows. However, native grasses had been established

across the site which were not as prevalent or thick prior to 2013 because the pine needles would have limited their growth and abundance. The well-established native grasses will help to decrease the overall net change in surface drainage for the site between 2005 and 2020. Increased surface flows, particularly along the north rim of the Burgess Creek drainage basin flowing into the channel below where slopes are much steeper, can be expected. Surface vegetation was also less in this area because of the steeper slopes and increased surface erosion. Consequently, flooding and erosion hazards will be of greater concern.

Where cover/fill is required for engineered OWTS such as mounded systems, the cover materials will have to be occasionally inspected to verify proper coverage still exists due to the increased susceptibility of surface erosion. One way to limit such erosion, is to maintain proper vegetation and avoid any disturbance of the OWTS areas.

All other recommendations in the original OWTS report remain valid. Given the shallow occurring bedrock materials present at the subject site it is very likely every lot will require an engineered system.

Individual profile pits and reports conforming to the health department's current OWTS standards for the region will be required for each lot prior to the time of construction. For the purposes of overall site planning/development, however, the original OWTS report referenced above provides sufficient findings and recommendations.

Conclusions

Based on visual observations made of the subject site on the date referenced above, review of the original *Performance Report/Sewage Disposal Evaluation* report by Front Range Geotechnical, and a review of the site using pre 2013 satellite imagery, the following conclusions have been drawn.

- The Original *Performance Report/Sewage Disposal Evaluation* for the Eagle Heights Subdivision, El Paso County, Colorado, by Front Range Geotechnical, Job No. 13470, dated January 24, 2005, coupled with any recommendations herein is still valid and provides sufficient findings and recommendations for the planning/development of the Eagle Forest Subdivision in Black Forest (El Paso County), Colorado.
- The original report does not conform to current, site specific OWTS evaluation guidelines (percolation tests versus profile pits). Therefore, site specific investigations and designs (as necessary) will be required for each lot prior to construction of each proposed single-family residence.

Closing

The opinions expressed in this letter are based on observable conditions present at the time of our site visit and a previous OWTS investigation completed by others. Material and construction defects, errors and/or omissions in the original *Performance Report/Sewage Disposal Evaluation*, and other adverse conditions may exist which were not discoverable while performing the specified scope of work. Therefore, this report is only valid for the information and assumptions presented herein. All reviewed information above indicates items that were not observed but presented in the referenced report. If any of the referenced information is found incorrect it is the responsibility of the developer to notify personnel of Cornell Engineering, LLC

immediately for possible revisions to this OWTS report update. Cornell Engineering, LLC does not accept liability for incorrectly reported information if the errors are not brought to the attention of Cornell Engineering, LLC personnel.

Subsequent owners including owners of each individual lot of the proposed subdivision should be apprised of the information and findings reported in this letter and the original *Performance Report/Sewage Disposal Evaluation* report.

We trust this letter has provided you with the information you required. If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully submitted,
CORNELL ENGINEERING, LLC



Duncan Cornell,
PE #52416



6/15/2020

Appendices

- Appendix A: Original *Performance Report/Sewage Disposal Evaluation*
- Appendix B: Proposed PUD for the Eagle Forest Subdivision (4/10/2020)
- Appendix C: 2005 and 2020 Google Earth Imagery of Subject Site

Appendix A

Original Preliminary Geology and Surface Soils Evaluation



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January 24, 2005

Subject: Performance Report/Sewage Disposal Evaluation (Chapter V-Section 51.7)
Eagle Heights Subdivision
El Paso County, Colorado

INTRODUCTION

The following report presents the results of a Performance Report/Sewage Disposal Evaluation for the proposed Eagle Heights subdivision in El Paso County, Colorado. The report is provided to address requirements of the El Paso County Code (Chapter V-Section 51.7) for geologic hazard, soil, and other conditions related to sewage disposal on lots between 2.5 and 5.0 acres. Front Range performed 3 percolation tests and drilled one additional profile hole on the site. These test locations were based on the geologic conditions mapped and discussed by Himmelreich & Associates (see Preliminary Geology and Surface Soils Evaluation by John Himmelreich & Associates). Additionally we reviewed the Preliminary Plan as part of this evaluation. The following sections (Proposed Development, Site Description, and Site Geology) along with Figures 1, 2 and 3 are taken from the Himmelreich report. Conditions disclosed by additional surface, subsurface investigations and/or laboratory analysis might make revisions of the conclusions of this report appropriate.

PROPOSED DEVELOPMENT

The site is proposed for development of a residential subdivision, with 10 residential lots with sizes ranging from 2.85 to 5.1 acres (see Figure 2). Additionally, a recreation building is planned on a 6.8-acre Open Space tract. The residential lots and recreation building will be served by individual sewage disposal systems and individual wells.

SITE DESCRIPTION

The proposed Eagle Heights subdivision is located north of Shoup Road between Black Forest and Herring Roads (see Figure 1). The site is located in the SE1/4 of Section 8, Township 12 South, Range 65 West of the Sixth Principal Meridian, and contains 50 acres. Surrounding properties are rural residential.

Topographically the site is divided by Burgess Creek, located in the southern part of the site. South of Burgess Creek, the site consists of relatively gently sloping terrain. A prominent ridge dominates the central part of the site with slopes south of the ridge moderately steep (up to about 25%) and slopes north of the ridge relatively gentle (typically less than 10%), see Figure 2. Small areas of 30% slope or greater are located along Burgess Creek in the slopes descending to the drainage (see Figure 2). These steeper slope areas along Burgess Creek are mostly within the Open Space tract, and not proposed for development. One small 'pond' was located in the Burgess Creek drainage; however, the 'dam' has been breached and is no longer functional (see Figure 2). Surface drainage from the central and south part of the site is tributary to Burgess Creek, and the north part of the site is tributary to Kettle Creek.

The site was characterized by grassland and mostly scattered ponderosa pine south of Burgess Creek and ponderosa pine forest north of Burgess Creek.

Existing residences were located on Lots 1 and 2 (proposed to remain). An existing masonry structure (proposed for the recreation building) was located on the proposed Open Space tract.

SITE GEOLOGY

The site is underlain by bedrock consisting of the upper unit of the Dawson Formation, commonly called the Dawson Arkose (Tda on Figure 2). This formation consists primarily of discontinuous and lenticular beds of arkosic sandstone and some claystone. No exposures of the Dawson were observed. The four profile holes drilled by Front Range (see Figure 2 for locations) indicate the sandstone bedrock encountered is non-cemented, is typically moderately dense, becoming denser

with depth. The regional dip of the strata is very gentle northerly. Our experience and observations in this area indicates the rocks are not highly fractured.

Overlying the bedrock are residual soils (weathered in-place), colluvium (slope wash), and alluvium (water transported materials). The residual and colluvial soils are mapped as Qcr on Figure 2. Recent alluvial deposits (a narrow 'ribbon'-not mapped) are located in the bottom of the of Burgess Creek drainage. Older alluvial terraces (the Piney Creek-Qp on Figure 2) are located along Burgess Creek. The alluvium, residual soils, and colluvium consist of poorly sorted silty to clayey sand with some gravel. Based on our observations and the profile hole logs, the surface soil deposits range from a few feet to about 10 feet thick on the site. Most of the area north of Burgess Creek is dominated by colluvial soils and residual soils resulting from the in-place weathering of the bedrock overlying denser bedrock.

The site is located in the Dawson Arkose (bedrock aquifer) in the Denver groundwater basin. This aquifer serves as the water supply for the wells in the immediate area. A perched water table also may be encountered in the recent alluvial deposits in the drainage of Burgess Creek, at least on a seasonal basis. The Soil Conservation Service (SCS) indicates that one soil type is present on the subject site (Mapping Units 40 and 41-Kettle gravelly loamy sand [3 to 8 percent slopes and 8 to 40 percent slopes]). The SCS map is included as Figure 3 and the SCS soil descriptions as Figures 3a-3b.

GEOLOGIC HAZARDS AND CONSTRAINTS RELATED TO SEWAGE DISPOSAL

Geologic characteristics and constraints that will influence the location and design of individual sewage disposal systems include percolation rate, shallow bedrock, and slope. These constraints can be mitigated with engineered designed systems.

It is planned to use individual treatment systems for sewage disposal on the lots on this site. In areas that are unacceptable for 'standard' soil absorption systems, alternate (engineered-designed) systems such as self contained systems, raised systems, or mounded systems may be used. Based on our

evaluation, there don't appear to be situations where an alternate disposal system cannot be utilized for lot sizes and lot locations for those proposed for this subdivision. It must be noted that the groundwater augmentation plan for the development requires that non-evaporative type wastewater disposal systems be used.

Percolation Testing

In order to evaluate site characteristics, we reviewed the geologic mapping by Himmelreich and Front Range performed 3 percolation tests (27% of the 11 proposed systems) and drilled one additional profile hole to further evaluation subsurface conditions. Profile Hole and percolation test locations were based on the geologic conditions mapped and discussed by Himmelreich and are shown on the attached Figures 2 and 4. Visual logs of the profile holes, a summary of percolation test results, and soil laboratory testing data can be found in Appendix A. The procedure for percolation testing for each location was to drill one four inch diameter profile hole to a depth of at least 10 feet, and to drill an adjacent hole to a depth of approximately 30 inches for percolation testing. Holes were drilled by a power driven auger drill rig. Visual logs of soil and bedrock profiles were obtained from drill cuttings, and Standard Penetration Tests (ASTM D-1586) were performed to obtain samples, for visual examination, and to verify bedrock depths. Selected samples were also tested in the laboratory (see Gradation Test Results with the Drill Logs, Appendix A).

The percolation test holes were filled with water and saturated prior to testing. The test procedure consisted of filling the hole with approximately six inches of water and measuring the drop in water level and corresponding time interval until the percolation rate stabilized. This type of percolation test is for the purpose of defining the overall general, but typical, percolation characteristics. **Site-specific tests (typically three-hole tests) must be made on each lot prior to construction of the individual sewage disposal systems.**

Percolation rates are controlled by soil characteristics that include grain size and gradation, amount of silt and clay, and density. Coarse, clean soils with little or no fine particles have fast percolation rates. Clayey sands, clays, silts and dense materials such as bedrock commonly have slower percolation rates.

The percolation rate measurements and depth to weathered bedrock are summarized on Table I (below). The results of the profile holes are also summarized below. No ground water was encountered in any of the profile holes.

TABLE I

Percolation Test Number	Percolation Rate	Depth to Dense Bedrock
P-1	32 minutes per inch	2.5 feet
P-2	Profile Hole only	8 feet
P-3	12.3 minutes per inch	8 feet
P-4	23.2 minutes per inch	1 feet

All percolation rates are in the acceptable range. The subsurface materials encountered in the profile holes consisted of shallow to moderately deep surficial sandy soils and shallow to moderately deep residually weathered sandy bedrock. Dense sandstone bedrock was encountered from 1 to 8 feet deep. Soil, residually weathered bedrock, and denser bedrock material consisted of silty to clayey sands and sandstones. P-1 encountered intermittent zones of clay within the dense bedrock. No groundwater was encountered in any of the profile holes.

Slopes

Slopes in excess of 30% are limited to small areas along the banks of Burgess Creek and are to be avoided by development. Proper performance of conventional soil absorption systems requires that they be constructed on relatively shallow slopes. The El Paso County Health Department "Individual Sewage Disposal System Regulations" (1996) consider that on slopes in excess of 30%, soil absorption systems require special design in order to take into account the effect of the steeper topography. The El Paso County Subdivision Regulations (Interim Performance Guidelines) classify slopes in excess of 10% as being unique topographic conditions.

Regulations

The Health Department regulations indicate that certain conditions must be satisfied for installation of soil absorption systems without special design. These are:

- The minimum depth allowed by the El Paso County Health Department is 21 inches from the ground surface to the bottom of a seepage bed or absorption trench. Bedrock or water tables must be at least four feet deeper. Therefore, bedrock or groundwater within approximately six feet of the surface constitutes unacceptable conditions for a standard absorption system.
- Unless designed by a Registered Professional Engineer and approved by the Health Department, no soil absorption system is permitted where the ground slope is in excess of 30%.
- Colorado State and El Paso County Health Department Regulations indicate that percolation rates faster than five minutes per inch or slower than sixty minutes per inch are unacceptable for soil absorption systems without special design.

Site Conditions

Based upon the geologic characteristics and constraints as observed, profile holes, and experience, sewage disposal characteristics and limitations have been evaluated. These various areas are shown on Figure 4 and a discussion of these follows.

Area I: Area I consists of that portion of the site characterized by thin to thicker surficial deposits and generally acceptable percolation rates. These areas are characterized by colluvial and older alluvial soils over the Dawson Arkose and is located mostly south of Burgess Creek. With some exploration, it is felt that in many (if not most) cases it will be possible to locate a 'standard' septic and soil absorption system in Area I, although local shallow soils (shallow, dense bedrock) may be encountered in these areas and thus will require some form of alternate system. Engineered designed systems are recommended in this area.

Area II: Area II consists of that portion of the site interpreted as underlain by shallow soils, over shallow to moderately deep residually weathered bedrock, over dense bedrock. In most of this area it is felt that dense bedrock will be too shallow and/or too impermeable for conventional soil absorption systems, and alternate engineered designed systems may be required.

Evaluation

Figure 4 is a Sewage Disposal Characteristics Map plotted on a copy of the Preliminary Plan of the subdivision. Preliminary Plan review was conducted to ensure each lot has an acceptable area for a house, well, and **two** areas (primary and 'replacement') for individual disposal systems utilizing soil absorption. The evaluation considered the lot size, location relative to identified constraints (percolation rate, shallow-dense bedrock, Burgess Creek, and slope), and required setbacks from wells, occupied structures and other setback requirements as contained in the El Paso County Individual Sewage Disposal System Regulations (October 11, 1996).

It was assumed as part of this evaluation that each house would have a footprint of about 2,800 square feet (40'x70'), include 4 bedrooms (resulting in a discharge of about 600 gallons per day), and the percolation rate would be 40 minutes per inch (the slowest rate measured in the percolation tests performed on the site was 32 minutes per inch). Based on these assumptions, our calculations indicate an absorption area of about 1,821 square feet would be required. Using absorption trenches, this translates to about 5,000 square feet for each absorption area. **Two areas** or sites (primary and 'replacement') for soil absorption purposes were located on each lot, again considering the above assumptions, constraints and required setbacks.

Relationship to Surrounding Areas

The site's relationship to surrounding areas is shown on Figure 1. Burgess Creek (normally dry) is located in the southern part of the site. No functional ponds are located on the site. Rural residential development surrounds the site. Streams, lakes and other features in the region of the site are shown on Figure 1.

Lots 1 and 2 contain existing structures with individual wells and septic systems and our evaluation indicates an adequate area for a 'replacement' field exists for each of these lots, located at least 100 feet from structures on adjacent lots. On the lots proposed for new residences, the closest existing or proposed residence to the site on adjacent subdivisions will likely be a single family dwelling approximately 100 feet (or more) away. Potential soil absorption systems (such as 'leach fields')

across The Eagle Heights subdivision would be located no closer than 100 feet from proposed wells and would maintain other required setbacks from proposed residences and other features (such as property lines) or existing residences:

Since the buried topography underlying the surficial deposits is likely controlled by the bedrock, wastewater effluent is likely to flow in the subsurface toward the swales and drainages, then off site in the subsurface soils. The individual sewage disposal systems constructed on the site will add wastewater effluent ('water') to the shallow subsurface. This shallow subsurface water is considered to be 'surface water' and tributary to surface streams (ultimately Monument Creek). Seasonally wet areas (especially in the drainages) are likely to increase in extent and duration on and down gradient from the site.

We obtained a list of well permit applications from Environmental Data Resources, Inc. (EDR) within about one mile of the site. The locations of the EDR listed permit applications in the search radius are shown on Figure 5. Many of the permit applications reported by EDR (total of 455) are denied permits, expired permits, abandoned wells, or applications for record changes for existing wells. Most of the permitted/existing wells within the search radius are located to the north, east, or southeast of the site. Review of the EDR reported data for the permitted/existing wells located west and southwest of the site (considered to be down-gradient for tributary water) indicates that they likely withdraw water from the Dawson bedrock aquifer.

Our experience indicates the Dawson bedrock aquifer is not recharged by 'surface water' (like wastewater effluent). As long as adequate surface seals are (were) provided during well design and construction to prevent surface water from impacting the bedrock aquifer, and required setbacks are maintained, it appears that the potential for wastewater effluent to contaminate the bedrock aquifer is low.

Wastewater effluent is likely to impact 'surface water' and/or shallow groundwater. The recharge (augmentation) provided by the wastewater effluent might impact the quality of the alluvial aquifer

water down gradient (such as increased nitrates and phosphates); however, our review of the EDR reported data for the permitted/existing wells located west and southwest of the site (considered to be down-gradient for tributary water) indicates that they likely withdraw water from the Dawson bedrock aquifer.

Relationship to On-site Wells

Two existing wells are reported on the site and individual wells are proposed for each new lot and the recreation building. The on-site wells will obtain water from the Dawson Aquifer. The EDR provided summary of the data for the existing on-site wells is provided in Appendix B. This data indicates the depth of the wells is 120 and 200 feet but the depth to static water level is not reported. Based on the depth of the wells and the geologic setting (relatively shallow bedrock) the water source for these wells is likely the Dawson Aquifer. Our experience indicates the Dawson Aquifer (and deeper bedrock aquifers) is not recharged by surface or tributary water (like wastewater effluent). As long as adequate surface seals were (are) provided during well design and construction to prevent surface water from impacting the bedrock aquifer, and required setbacks are maintained, it appears that the potential for sewage effluent to contaminate the bedrock aquifer is low. Since the on-site wells were reportedly constructed in the late 1950's or early 1960's, construction details should be obtained (if available). Consideration should be given to testing the water quality in these wells (especially for possible contaminants related to septic effluent).

Availability of a Central System

Our research indicates the proposed subdivision is not within one (1) mile of a central sewage system, and is not within an organized sewage district or municipal service area. It does not appear feasible to be included into a central system.

Discussion

At the time of house and well placement on each individual lot, it is extremely important that the engineers designing the site plans and performing the percolation tests properly identifies all the geologic/soil related (percolation rate, depth to bedrock, and depth to groundwater) and other design factors (slopes, setbacks, etc.) that influence the location and type of sewage disposal system. It is

the combination of factors that determines the location and general type of individual sewage disposal system best suited for the site. It is also the responsibility of the engineer performing the percolation testing to evaluate soil properties and continuity of the materials for the total depth of the profile hole (and within the area of the proposed system).

Sandstone bedrock encountered in the profile holes was weathered and contained low to no cementation. Under these conditions, it is uncommon for open fractures to develop in bedrock of this type. Observed excavations in bedrock in other areas of the Black Forest confirm this.

In the context of this report, the term "weathered bedrock" denotes that this material has been derived from the in-place weathering (residual weathering) of the underlying 'denser' Dawson bedrock formation, thus forming residual soil/'bedrock'. That is, the materials have not been transported to their position by geologically recent erosional and depositional processes like the other surface soil deposits have. Although soil-like in appearance and commonly possessing acceptable percolation rates, from the standpoint of sewage disposal characteristics, the 'weathered bedrock' is different than the surface soil deposits because it is commonly found at a higher in-place density. Although drillable with commonly used drilling equipment, this higher density sometimes results in slower percolation rates than the overlying soil deposits. Cemented bedrock (the type of bedrock that would contain open fractures, and hence, not treat the effluent) was not encountered in any of the profile holes drilled on-site. Percolation tests P-3 and P-4 were both performed in 'weathered bedrock' with acceptable percolation rates of 12.3 and 23.2 minutes per inch at a depth of 2.5 feet. Since the 'weathered bedrock' is soil-like in terms of most of its physical properties, it is judged to be a suitable stratum for disposal of sewage effluent (assuming it exhibits acceptable percolation rates).

The El Paso County Regulations do not specifically prohibit absorption systems in weathered bedrock (assuming all other conditions are acceptable) and historically the Health Department has permitted absorption systems under these conditions.

Our experience has shown that unless a) one is very familiar with the geologic units; b) utilizes and analyzes fugitive drilling information (ease of drilling, etc.); c) observes and analyzes color and other physical material changes during drilling; d) verifies interpretations with standard penetration or other types of tests; and/or e) performs deeper percolation tests; the presence, position, and sewage disposal characteristics of 'weathered bedrock' can be misinterpreted. This misinterpretation could have a significant impact on the sewage disposal system designed and ultimately, the performance.

As part of the individual house percolation testing (as with all other tests in other subdivisions), the testing engineer needs to provide an evaluation of the weathered bedrock's acceptability for sewage disposal. Acceptable percolation rates in 'weathered bedrock' materials have been observed on the Eagle Heights subdivision (P-3 and P-4) and in similar geologic settings. Interpreted depth to dense bedrock has been indicated on Table 1 (above).

Sewage Disposal Conclusions

We believe all the lots within the proposed development are suitable for installation of some type of on-site wastewater disposal system utilizing soil absorption. The groundwater augmentation plan for the development requires that non-evaporative type wastewater disposal systems be used.

Because of areas of potential shallow dense bedrock that may be encountered and other constraints, we believe all lots require engineer-designed systems. **Additionally, strategic placement of the house and well locations (including the recreation building) will be necessary so that required setbacks are maintained and adequate area is made available for the primary and 'replacement' soil absorption areas.** Xeriscape type landscaping is recommended on the lots that possess significant area with limitations and constraints.

Based upon our experience in the area, it is our opinion that the Eagle Heights property is similar to and typical of many developed subdivision regions in the area. The task of the engineers and builders in the region has become one of matching the disposal process and approved systems with prevalent field conditions and site constraints. With knowledgeable builders, proper site planning

(house, well, and septic site placement), proper testing techniques, and some exploration on each lot, it is believed that on all lots two disposal fields can be located and will be able to utilize soil absorption type systems for individual sewage disposal in this subdivision. In all cases methods are available for an individual sewage disposal system on each and every lot in the subdivision. **It should be emphasized that due to the geologic characteristics and other constraints on this site all systems should consist of an engineer-designed system.**

Potential buyers and builders of lots within the subdivision should be provided with a copy of this report so that they can be apprised of site conditions, constraints and recommendations.

LIMITATIONS

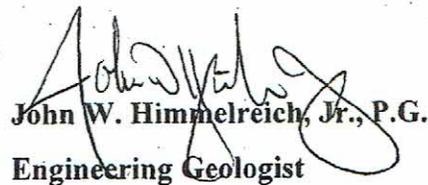
The opinions presented in this report were developed from review of geologic conditions and mapping by others, evaluation of profile holes, percolation tests, and laboratory test data, and our experience. Should additional surface or subsurface data become available, the conclusions and recommendations contained in this report shall not be considered valid unless the data are reviewed and the conclusions of this report are modified or approved in writing. If you have questions or require additional information, please contact us.

Respectfully,

FRONT RANGE GEOTECHNICAL, INC. &
JOHN HIMMELREICH & ASSOCIATES



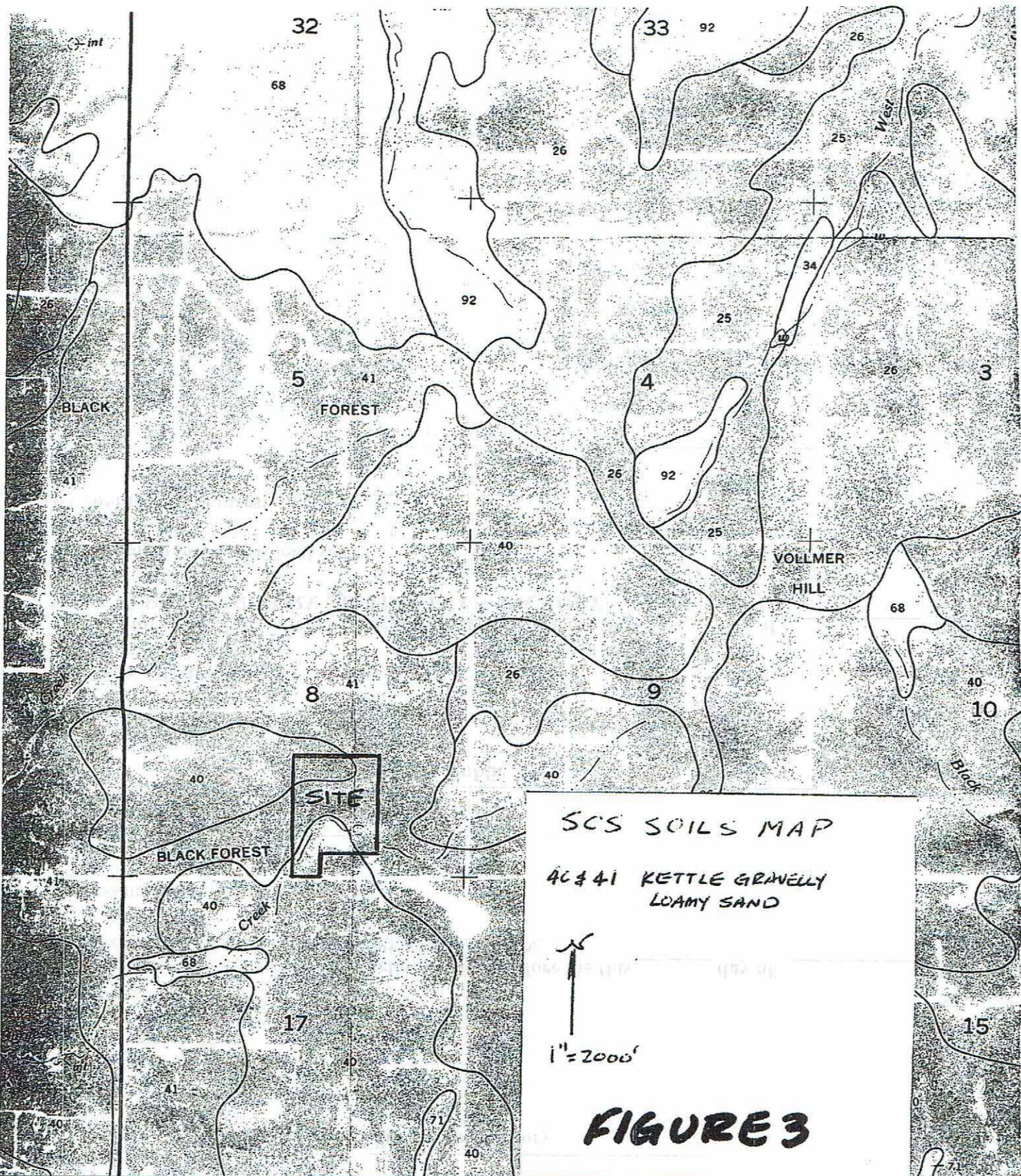
Jeff Houchin
Geologist



John W. Himmelreich, Jr., P.G.
Engineering Geologist



Michael F. Reynolds, P.E.
Civil Engineer



(Joins sheet 9)

2 240 000 FEET

40—Kettle gravelly loamy sand, 3 to 8 percent slopes. This deep, well drained soil formed in sandy arkosic deposits on uplands. Elevation ranges from 7,000 to 7,700 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 120 days.

Typically, the surface layer is gray gravelly loamy sand about 3 inches thick. The subsurface layer is light gray gravelly loamy sand about 13 inches thick. The subsoil is very pale brown gravelly sandy loam about 24 inches thick. It consists of a matrix of loamy coarse sand that has thin bands of coarse sandy loam or sandy clay loam. The substratum to a depth of 60 inches or more is light yellowish brown extremely gravelly loamy sand.

Included with this soil in mapping are small areas of Alamosa loam, 1 to 3 percent slopes; Elbeth sandy loam, 3 to 8 percent slopes; Pring coarse sandy loam, 3 to 8 percent slopes; Tomah-Crowfoot loamy sands, 3 to 8 percent slopes; and a few rock outcrops.

Permeability of this Kettle soil is rapid. Effective rooting depth is 60 inches or more. Available water capacity is low to moderate. Surface runoff is slow, and the hazard of erosion is slight to moderate. A few gullies have formed in drainageways.

This soil is used for woodland, livestock grazing, wildlife habitat, recreation, and homesites.

This soil is suited to the production of ponderosa pine. It is capable of producing about 2,240 cubic feet or 4,900 board feet (International rule), of merchantable timber per acre from a fully stocked, even-aged stand of 80-year-old trees. The main limitation for the production or harvesting of timber is the low available water capacity. The low available water capacity also influences seedling survival, especially in areas where understory plants are plentiful. Erosion must be kept to a minimum when harvesting timber.

This soil has good potential for mule deer, tree squirrels, cottontail rabbit, and wild turkey. These animals obtain their food and shelter from pine trees, shrubs, and ground cover, which provide browse, forbs, fruit, and seeds. The presence of ponderosa pine and Gambel oak should encourage wild turkey populations; however, where water is not naturally present, wildlife watering facilities must be provided to attract and maintain wild turkey and other wildlife species. Livestock grazing management is vital on this soil if wildlife populations are to be maintained.

This soil has good potential for use as homesites. Plans for homesite development on this soil should provide for the preservation of as many trees as possible in order to maintain the esthetic value of the sites. During seasons of low precipitation, fire may become a hazard to homesites. This hazard can be minimized by installing firebreaks and reducing the amount of litter on the forest floor. Capability subclass VIe.

41—Kettle gravelly loamy sand, 8 to 40 percent slopes. This deep, well drained soil formed in sandy arkosic deposits on uplands. Elevation ranges from 7,000 to 7,700 feet. The average annual precipitation is about 18 inches, the average annual air temperature is about 43 degrees F, and the average frost-free period is about 120 days.

Typically, the surface layer is gray gravelly loamy sand about 3 inches thick. The subsurface layer is light gray gravelly loamy sand about 13 inches thick. The subsoil is very pale brown gravelly sandy loam about 24 inches thick. It consists of a matrix of loamy coarse sand that has thin bands of coarse sandy loam or sandy clay loam. The substratum to a depth of 60 inches or more is light yellowish brown extremely gravelly loamy sand.

Included with this soil in mapping are small areas of Elbeth sandy loam, 8 to 15 percent slopes; Pring coarse sandy loam, 8 to 15 percent slopes; Tomah-Crowfoot loamy sands, 8 to 15 percent slopes; and a few rock outcrops.

Permeability of this Kettle soil is rapid. Effective rooting depth is 60 inches or more. Available water capacity is low to moderate. Surface runoff is medium, and the hazard of erosion is moderate. Some gullies have formed in drainageways.

The soil is used for woodland, livestock grazing, wildlife habitat, recreation, and homesites.

This soil is suited to the production of ponderosa pine. It is capable of producing 2,240 cubic feet, or 4,900 board feet (International rule), of merchantable timber per acre from a fully stocked, even-aged stand of 80-year-old trees. The main limitation for this use is the moderate hazard of erosion. Measures must be taken to reduce erosion when harvesting timber, especially on the steeper slopes. The low to moderate available water capacity also influences seedling survival, especially in areas where understory plants are plentiful.

This soil has good potential for mule deer, tree squirrel, cottontail, and wild turkey. These animals obtain their food and shelter from pine trees, shrubs, and ground cover, which provide browse, forbs, fruit, and seeds. The presence of ponderosa pine and Gambel oak should encourage wild turkey populations; however, where water is not naturally present, wildlife watering facilities must be provided to attract and maintain wild turkey and other wildlife species. Livestock grazing management is vital on this soil if wildlife populations are to be maintained.

The moderately sloping to steep slopes limit the suitability of this soil for homesites. Special practices must be provided to minimize surface runoff and thus keep erosion to a minimum. This soil requires special site or building designs because of the slope. Deep cuts, to provide essentially level building sites, may expose bedrock. Access roads must be designed to provide adequate cut-slope grade, and drains must be used to control surface runoff and keep soil losses to a minimum. During seasons of low precipitation, fire may become a hazard to homesites. This hazard can be minimized by installing firebreaks and reducing the amount of litter on the forest floor. Capability subclass VIe.

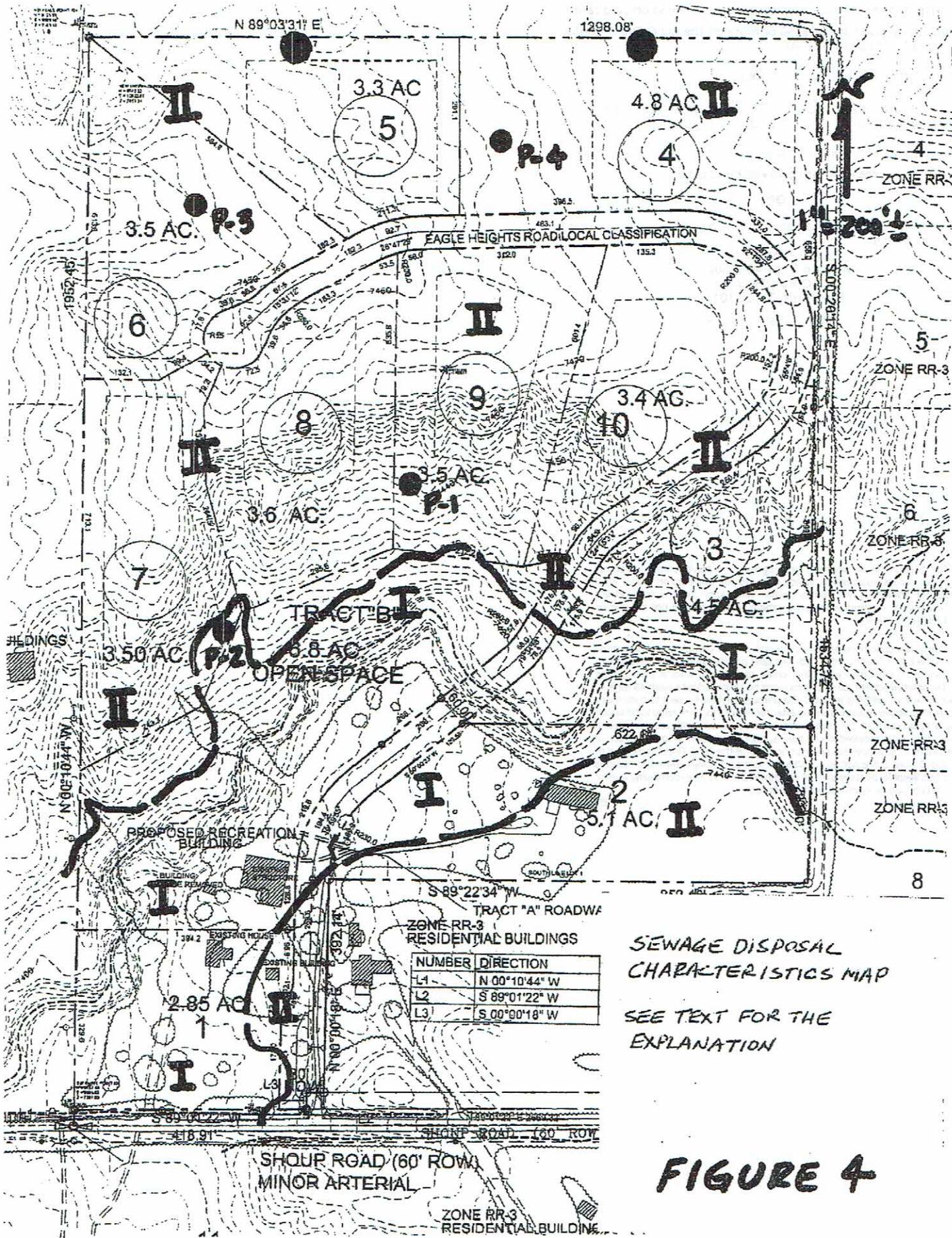
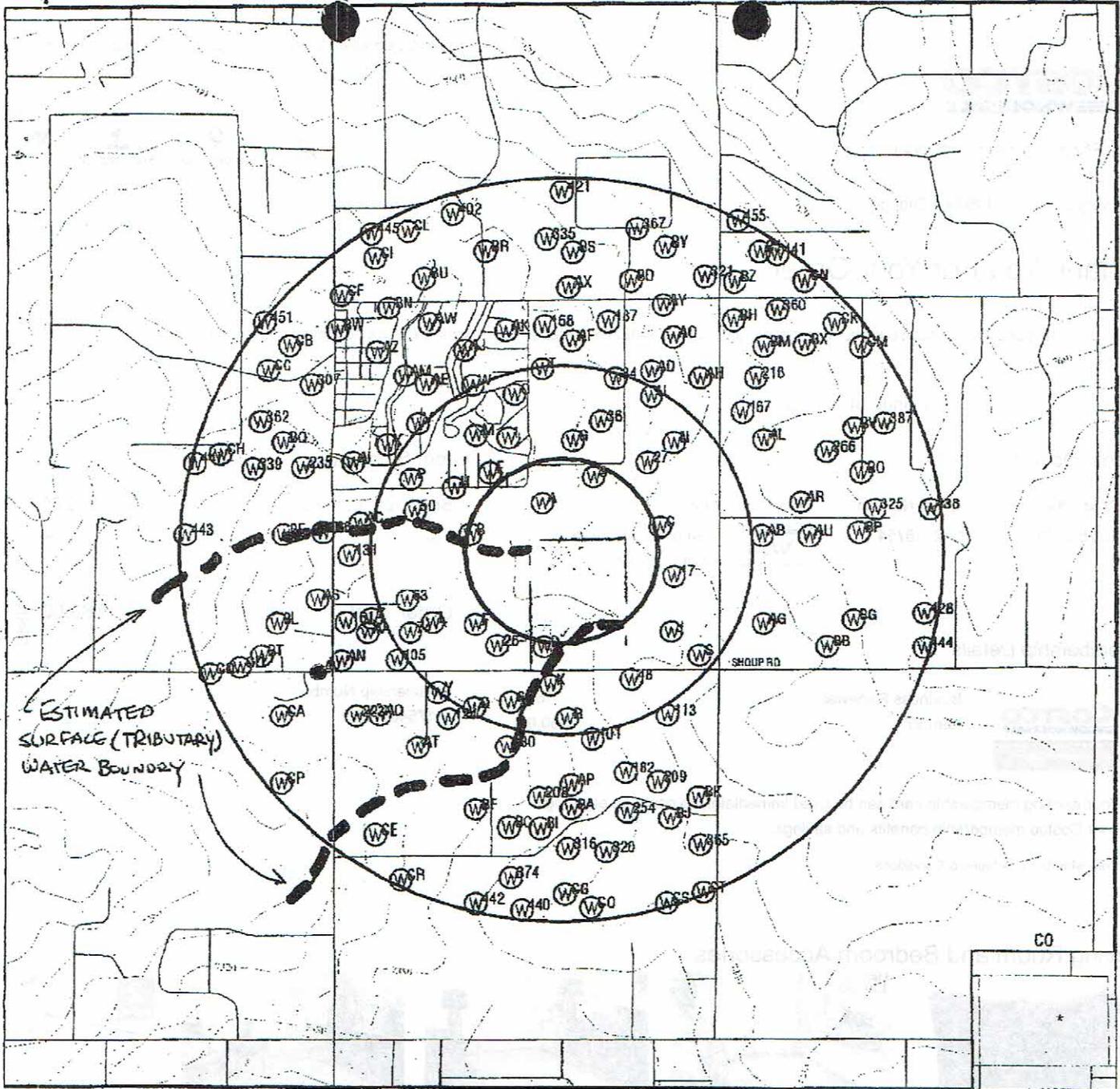


FIGURE 4

PHYSICAL SETTING SOURCE MAP - 01342877.1r



- N County Boundary
- Major Roads
- Contour Lines
- ⊙ Earthquake epicenter, Richter 5 or greater
- ⊙ Water Wells
- ⊙ Public Water Supply Wells
- Cluster of Multiple Icons

- ↑ Groundwater Flow Direction
- (G) Indeterminate Groundwater Flow at Location
- (V) Groundwater Flow Varies at Location
- Oil, gas or related wells

**PERMITTED WELL
LOCATIONS
FIGURE 5**

TARGET PROPERTY: Shoup Road Parcel
 ADDRESS: 7360 Shoup Road
 CITY/STATE/ZIP: Colorado Springs CO 80908
 LAT/LONG: 39.0176 / 104.6894

CUSTOMER: John Himmelreich & Associates
 CONTACT: John Himmelreich
 INQUIRY #: 01342877.1r
 DATE: January 14, 2005 8:31 pm



**FRONT RANGE
GEOTECHNICAL
INC.**

DRILL LOGS

JOB#: 13470

TEST BORING
NO.: P-1

DATE: 1/11/2005

DEPTH (in ft.)	SYMBOL	SAMPLES	BLOW COUNT	WATER %	SOIL TYPE
0-2"	TOPSOIL				
2"-30"	SAND				
2					
4			32	6.9	SC
6					
8					
10					
12			39		
14					
16					
18					
20					

0-2" TOPSOIL

2"-30" SAND

fine-medium grained

high density

moderate moisture
content

moderate clay content

moderate plasticity

buff color

30"-15' SANDSTONE

fine-medium grained

high density

low-mod. moisture
content

low clay content

low plasticity

buff color

INTERMITTENT ZONES
OF OXIDIZED CLAY

percolation rate
at the depth of 30"
is 1" in 32 minutes

JOB#: 13470

TEST BORING
NO.: P-2

DATE: 1/11/2005

DEPTH (in ft.)	SYMBOL	SAMPLES	BLOW COUNT	WATER %	SOIL TYPE
0-2"	TOPSOIL				
2"-8"	SAND				
2					
4			31	4.1	SM
6					
8					
10					
12			29		
14					
16					
18					
20					

0-2" TOPSOIL

2"-8" SAND

fine-coarse grained

moderate density

low-mod. moisture
content

low clay content

non-plastic

buff color

8'-12' SANDSTONE

fine-coarse grained

high density

moderate moisture
content

low clay content

low plasticity

buff color

APPENDIX A1



FRONT RANGE
GEOTECHNICAL
INC.

DRILL LOGS

JOB#: 13470

TEST BORING
NO.: P-3

DATE: 1/11/2005

DEPTH (in ft.)	SYMBOL	SAMPLES	BLOW COUNT	WATER %	SOIL TYPE
0-2"	XXXX				
2"-8'			29 12"	3.6	SM
8'-15'			42 6"		

0-2" TOPSOIL

2"-8' SANDSTONE

fine-medium grained

mod.-high density

low moisture
content

low clay content

non-plastic

buff color

8'-15' SANDSTONE

fine-medium grained

very-high density

moderate moisture
content

moderate clay content

moderate plasticity

buff color

percolation rate
at the depth of 30"
is 1" in 12.3 minutes

JOB#: 13470

TEST BORING
NO.: P-4

DATE: 1/11/2005

DEPTH (in ft.)	SYMBOL	SAMPLES	BLOW COUNT	WATER %	SOIL TYPE
0-2"	XXXX				
2"-12"			36 6"	6.2	SM
12"-15'			28 3"		

0-2" TOPSOIL

2"-12" SAND

fine grained

low density

moderate moisture
content

moderate clay content

moderate plasticity

buff color

12"-15' SANDSTONE

fine-medium grained

very-high density

moderate moisture
content

moderate clay content

moderate plasticity

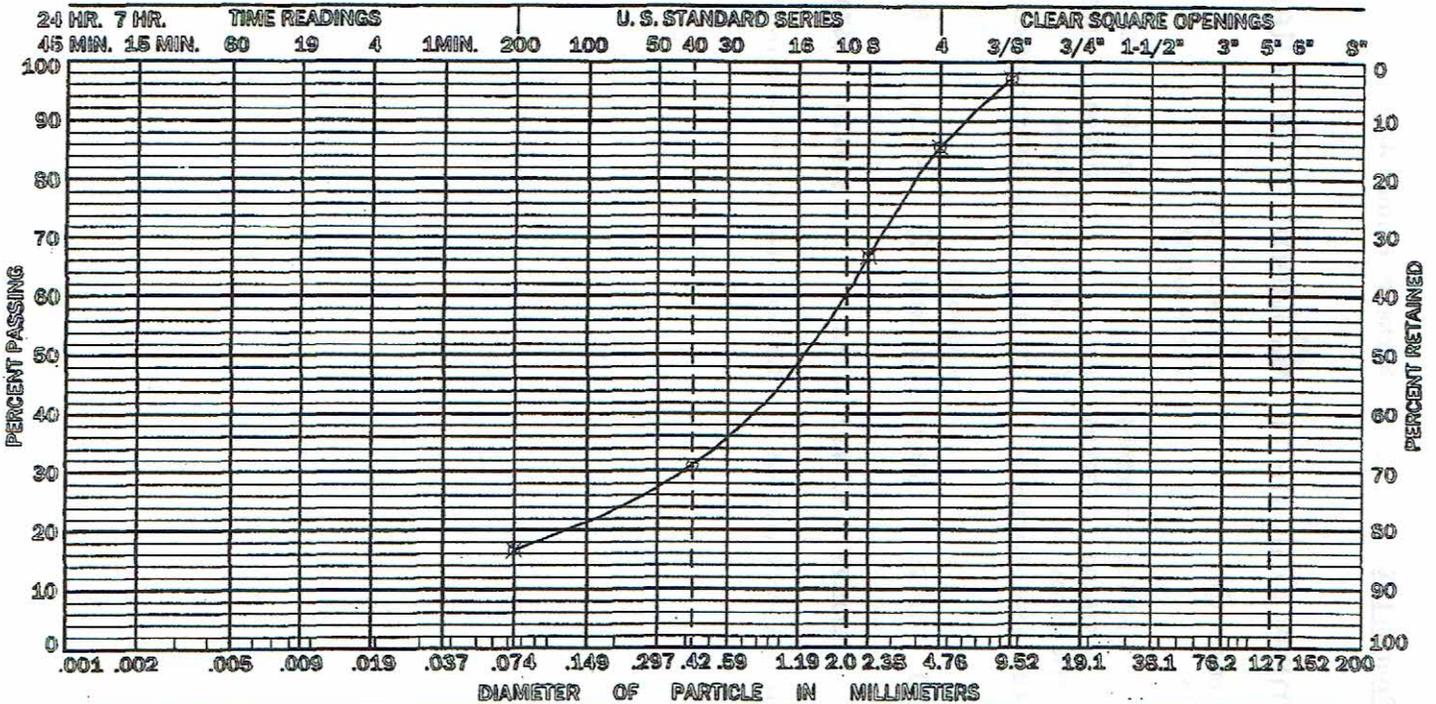
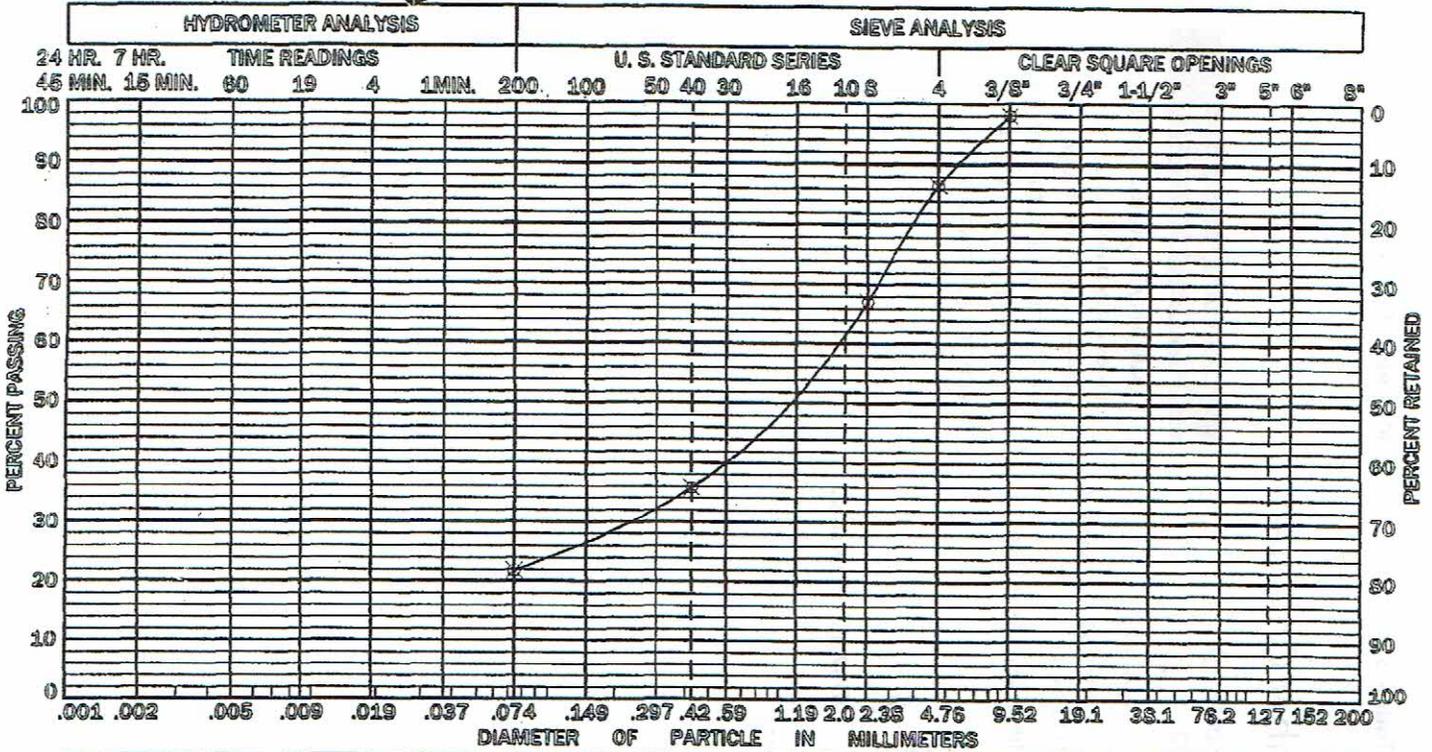
buff color

percolation rate
at the depth of 30"
is 1" in 23.2 minutes



FRONT RANGE GEOTECHNICAL INC.

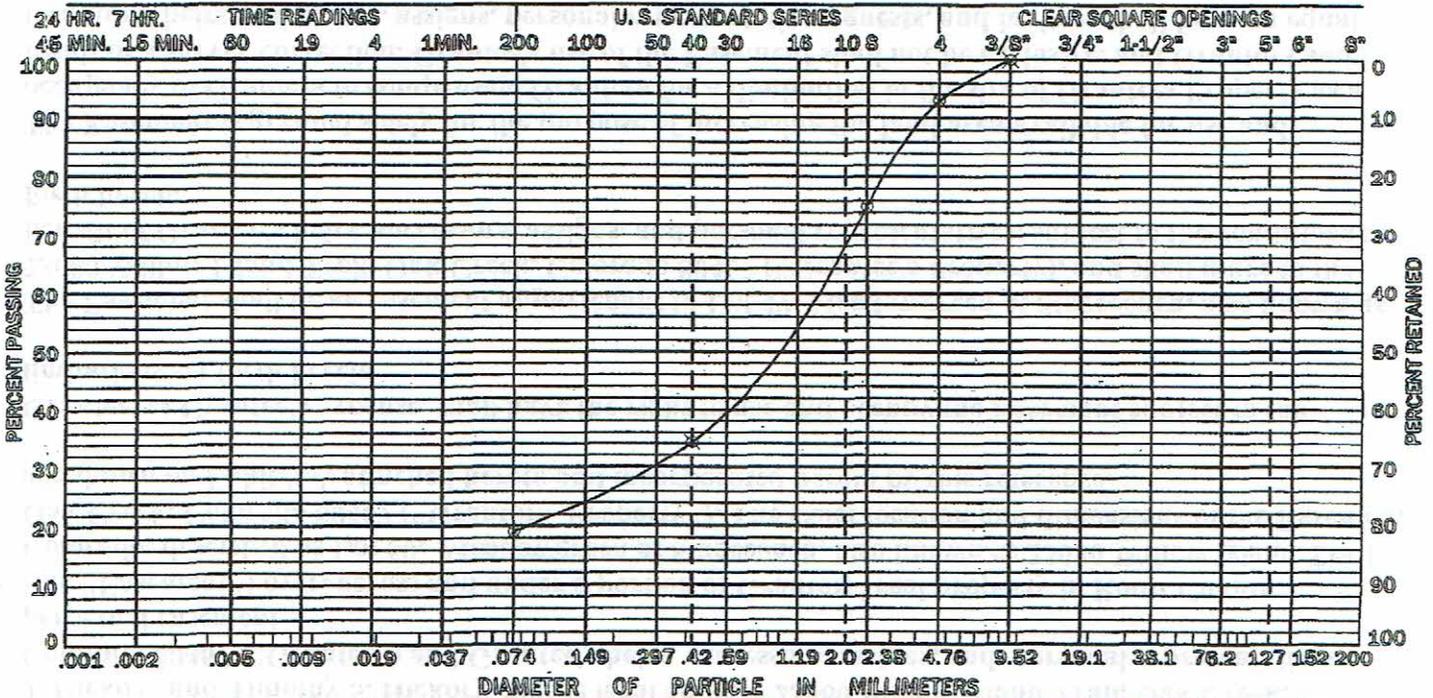
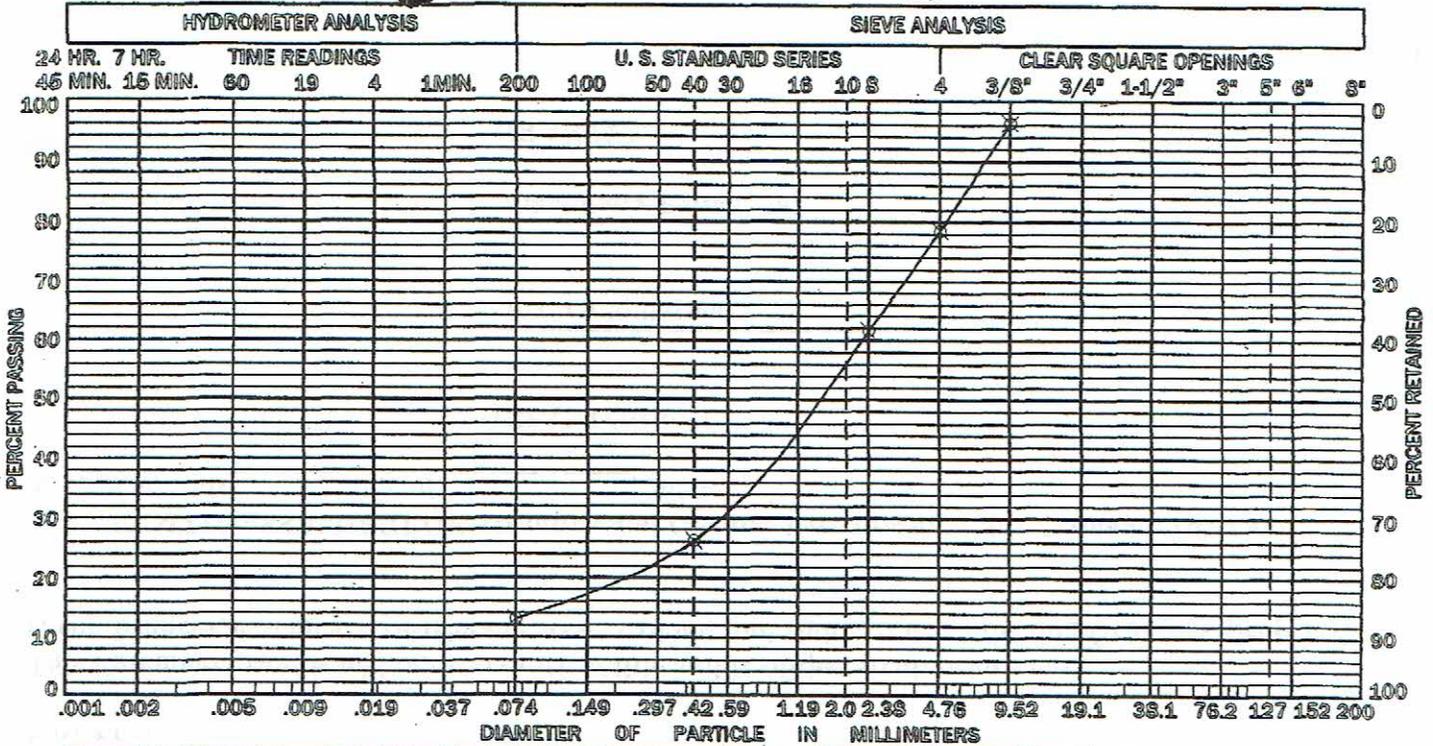
GRADATION TEST RESULTS





FRONT RANGE GEOTECHNICAL INC.

GRADATION TEST RESULTS



CLASSIFICATION	SM	SAND			GRAVEL		COBBLES
		FINE	MEDIUM	COARSE	FINE	COARSE	
GRAVEL	7.0 %						
SAND	73.7 %						
FINES	19.3 %						

NOTES: 6.2 % Moisture content
LL = 34.1 %
PL = 24.6 %
PI = 9.5 %

SAMPLE# 1 HOLE# P-4 DEPTH 4 FEET

Job #: 13470 By: KO 1/12/2005

4D7
South
1/4 - 1/2 Mile
Lower

CO WELLS COWW141558

Site Name:	HANNASCH E ELINOR		
Mailing Address:	7360 SHOUP		
	COLO SPRGS, CO 80908		
Telephone:	7194952229		
Water Division:	2	County Code:	21
Receipt:	0347699B	Permit Number:	168591
Suffix Code:	Not Reported	Replacement Code:	Not Reported
Parcel:	0		
Application Date:	01/04/1993		
Application Status:	Well permit issued		
Permit Status:	Not Reported		
Permit Stat Date:	Not Reported		
Last Action Updated:	Well permit issued		
Last Action Date:	02/18/1993		
Permit, Denial (AD) or Monitoring Hole Issued:	02/18/1993		
Construction/Test report Received by DWR:	Not Reported		
Well Proposed Yield (Gal/Min):	0		
Well Proposed Depth (Feet):	0		
Proposed Annual Appropriation (Acre Feet):	0		
Well Application Type:	Not reported		
Well Type:	Exempt		
First Beneficial Use Date:	08/01/1960		
Date Statement of Use Received:	Not Reported		
Date Amended to Include Animals:	Not Reported		
Permit Expiration Date:	Not Reported		
Abandonment Report Received:	Not Reported		
Plugged an Abandoned Date:	Not Reported		
Annual Appropriation in Acre Feet:	.75		
Depth to Top of 1st Perforated Casing:	0000		
Depth to Base of Last Perforated Casing:	0000		
Water Court Case Number:	Not Reported		
Yield in Gallons Per Minute:	6		
Total Depth of Well:	120		
Depth to Static Water Level:	0		
Ground Surface Elevation:	0		
Acres Irrigated:	0		
Totaling Flow Meter Req'd., Installed:	N		
Cross Reference to Another Well or Record:	Not Reported		
Notice of Well Completion Recvd. for Non-trib Aquifer:	Not Reported		
Notice of Beneficial Use Recvd. for Non-trib Aquifer:	Not Reported		
Well ID Number:	00000		
Well Construction Completed Date:	Not Reported		
Pump Installation Completed Date:	Not Reported		
Geophysical is Required and Received:	No		
Contractor's License:	LR		
Pump Installer's License:	Not Reported		
Pump Installation Report to DWR:	Not Reported		
Statute Which Permit Issued Under:	6025		
Last Staff Member to Update File:	LMD		
Water District:	10		
Groundwater Basin Numb:	00	Basin Mgmt Dist Numb:	00
Principal Meridian:	S	Dist from Section Line:	363S 2933W
Range:	0650W	Township:	120S
Section:	08	1/4 Section:	SE
1/4 1/4:	SW	1/4 1/4 1/4:	Not Reported
Aquifer:	GW	2nd Aquifer:	Not Reported
Sub Division:	Not Reported	Lot Number:	Not Reported
Block Number:	Not Reported	Filing Number:	Not Reported
Approval Engineer:	JWB	Designation Number:	Not Reported
Comments:	Not Reported		
Utm_x:	526862.625		
Utm_y:	4318159	Loc_source:	CarteView 2/17/2000
Usage:	Domestic		

APPENDIX B1

Direction
Distance
Elevation

Database EDR ID Number

D8
South
1/4 - 1/2 Mile
Lower

CO WELLS COWW141557

Site Name: HANNASCH E ELINOR
Mailing Address: 7360 SHOUP
 COLO SPRGS, CO 80908
Telephone: 7194952229
Water Division: 2 County Code: 21
Receipt: 0347699A Permit Number: 168590
Suffix Code: Not Reported Replacement Code: Not Reported
Parcel: 0
Application Date: 01/04/1993
Application Status: Well permit issued
Permit Status: Application for permit resubmitted to DWR
Permit Stat Date: 02/10/1993
Last Action Updated: Well permit issued
Last Action Date: 02/18/1993
Permit, Denial (AD) or Monitoring Hole Issued: 02/18/1993
Construction/Test report Received by DWR: Not Reported
Well Proposed Yield (Gal/Min): 0
Well Proposed Depth (Feet): 0
Proposed Annual Appropriation (Acre Feet): 0
Well Application Type: Not reported
Well Type: Exempt
First Beneficial Use Date: 06/01/1959
Date Statement of Use Received: Not Reported
Date Amended to Include Animals: Not Reported
Permit Expiration Date: Not Reported
Abandonment Report Received: Not Reported
Plugged an Abandoned Date: Not Reported
Annual Appropriation in Acre Feet: .75
Depth to Top of 1st Perforated Casing: 0000
Depth to Base of Last Perforated Casing: 0000
Water Court Case Number: Not Reported
Yield in Gallons Per Minute: 6
Total Depth of Well: 200
Depth to Static Water Level: 0
Ground Surface Elevation: 0
Acres Irrigated: 0
Totalling Flow Meter Req'd., Installed: N
Cross Reference to Another Well or Record: Not Reported
Notice of Well Completion Recvd. for Non-trib Aquifer: Not Reported
Notice of Beneficial Use Recvd. for Non-trib Aquifer: Not Reported
Well ID Number: 00000
Well Construction Completed Date: Not Reported
Pump Installation Completed Date: Not Reported
Geophysical is Required and Received: No
Contractor's License: LR
Pump Installer's License: Not Reported
Pump Installation Report to DWR: Not Reported
Statute Which Permit Issued Under: 6025
Last Staff Member to Update File: LMD
Water District: 10
Groundwater Basin Numb: 00 Basin Mgmt Dist Numb: 00
Principal Meridian: S Dist from Section Line: 290S 2940W
Range: 0650W Township: 120S
Section: 08 1/4 Section: SE
1/4 1/4: SW 1/4 1/4 1/4: Not Reported
Aquifer: GW 2nd Aquifer: Not Reported
Sub Division: Not Reported Lot Number: Not Reported
Block Number: Not Reported Filing Number: Not Reported
Approval Engineer: JWB Designation Number: Not Reported
Comments: Not Reported
Utm_x: 526864.688
Utm_y: 4318137 Loc_source: CarteView 2/17/2000
Usage: Domestic

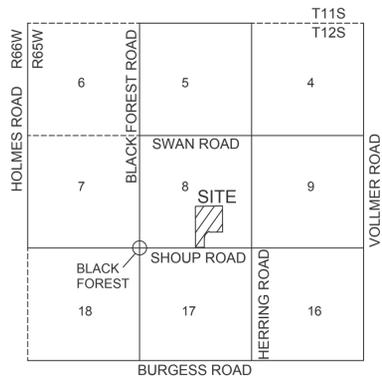
APPENDIX B 2

Appendix B

Proposed PUD for Eagle Forest Subdivision (4/10/2020)

EAGLE FOREST SUBDIVISION PRELIMINARY / P.U.D. DEVELOPMENT PLAN

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 8,
TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M.
EL PASO COUNTY, COLORADO



VICINITY MAP
NTS

PROPERTY DESCRIPTION:

A TRACT OF LAND LOCATED IN THE SOUTHEAST QUARTER OF SECTION 8, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6th P.M., EL PASO COUNTY, COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BASIS OF BEARINGS FOR THIS DESCRIPTION IS THE WEST LINE OF THE SOUTHEAST QUARTER OF SECTION 8, N00°10'49"W - 1982.45 FEET. THE DIRECTION IS BASED ON THE LAND SURVEY PLAT BY UNITED PLANNING AND ENGINEERING, DATED NOVEMBER 23, 2004, DEPOSIT NUMBER 204900192 AND THE LINE IS MONUMENTED BY A 2-1/2" DIAMETER ALUMINUM CAP LS #11624 ON THE SOUTH AND A REBAR AND CAP LS 25629 ON THE NORTH.

COMMENCING AT THE SOUTHWEST CORNER OF SAID SOUTHEAST QUARTER OF SECTION 8; THENCE N00°10'49"W ON THE WEST LINE OF SAID SOUTHEAST QUARTER A DISTANCE OF 30.00 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF SHOUP ROAD AND THE POINT OF BEGINNING OF THE TRACT DESCRIBED HEREIN; THENCE CONTINUE N00°10'49"W ON THE WEST LINE OF SAID SOUTHEAST QUARTER A DISTANCE OF 1952.45 FEET; THENCE N89°03'26"E A DISTANCE OF 1298.11 FEET; THENCE S00°20'14"E A DISTANCE OF 1244.75 FEET TO THE NORTHEAST CORNER OF LOT 1, THE S. HANNASCH SUBDIVISION NO. 1A, AS SHOWN ON THE SUBDIVISION PLAT THEREOF RECORDED UNDER RECEPTION NO. 207712645 OF THE RECORDS OF THE EL PASO COUNTY CLERK AND RECORDER; THENCE S89°22'23"W ON THE NORTH LINE OF SAID LOT 1, A DISTANCE OF 622.03 FEET TO THE MOST EASTERLY CORNER OF TRACT A OF SAID S. HANNASCH SUBDIVISION NO. 1A; THE FOLLOWING FOUR (4) COURSES ARE ALONG THE NORTHERLY AND WESTERLY BOUNDARY OF SAID TRACT;

- 1.) THENCE N39°59'42"W A DISTANCE OF 60.00 FEET;
 - 2.) THENCE S 50°00'18"W A DISTANCE OF 132.81 FEET TO A POINT OF CURVE;
 - 3.) THENCE ON THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 330.00 FEET, THROUGH A CENTRAL ANGLE OF 50°00'00" AN ARC DISTANCE OF 287.98 FEET TO A POINT OF TANGENT;
 - 4.) THENCE S00°00'18"W A DISTANCE OF 362.97 FEET TO THE SOUTHWEST CORNER OF SAID TRACT;
- THENCE CONTINUE S00°00'18"W A DISTANCE OF 60.00 FEET TO A POINT ON THE AFORESAID NORTHERLY RIGHT OF WAY LINE OF SHOUP ROAD; THENCE S89°01'22"W ON SAID NORTHERLY RIGHT OF WAY LINE A DISTANCE OF 418.94 FEET TO THE POINT OF BEGINNING.

THE DESCRIBED TRACT CONTAINS 44.193 ACRES, MORE OR LESS.

OWNER:

EAGLE FOREST DEVELOPMENT, LLC HAS EXECUTED THIS INSTRUMENT THIS _____ DAY OF _____ 2020.

EAGLE FOREST DEVELOPMENT, LLC

NOTARIAL:

STATE OF COLORADO) SS
COUNTY OF EL PASO)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____ 2020 BY EAGLE FOREST DEVELOPMENT, LLC

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC

OWNERSHIP CERTIFICATION:

I/WE _____ A (ONE OF THE FOLLOWING: TITLE COMPANY, TITLE ATTORNEY, ATTORNEY AT LAW) DULY QUALIFIED, INSURED, OR LICENSED BY THE STATE OF COLORADO, DO HEREBY CERTIFY THAT I/WE HAVE EXAMINED THE TITLE OF ALL LANDS DEPICTED AND DESCRIBED HEREON AND THAT TITLE TO SUCH LAND IS FEE SIMPLE BY _____ AT THE TIME OF THIS APPLICATION. NOTARIZED SIGNATURE

NOTARIAL:

STATE OF COLORADO) SS
COUNTY OF EL PASO)

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____ 2020 BY _____

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC

COUNTY APPROVALS:

THIS PRELIMINARY / PUD DEVELOPMENT PLAN HAS BEEN REVIEWED AND FOUND TO BE COMPLETE AND IN ACCORDANCE WITH THE (BOARD RESOLUTION OR MOTION # AND DATE) APPROVING THE PUD AND ALL APPLICABLE EL PASO COUNTY REGULATIONS.

BOARD OF COUNTY COMMISSIONERS DATE DIRECTOR OF DEVELOPMENT SERVICES DATE

RECORDING:

STATE OF COLORADO) SS
COUNTY OF EL PASO)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD AT MY OFFICE AT _____ O'CLOCK ___ M., THIS _____ DAY OF _____, 2020, AND IS DULY RECORDED AT RECEPTION NO. _____ OF THE RECORDS OF EL PASO COUNTY, COLORADO.

CHUCK BROERMAN

BY: _____ COUNTY CLERK AND RECORDER

FEE: _____

SURCHARGE: _____

"NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON."

GENERAL PROVISIONS:

- A STATEMENT ESTABLISHING THE PURPOSE AND INTENT OF THE PUD ZONING DISTRICT
- AUTHORITY

THIS PUD IS AUTHORIZED BY CHAPTER 4 OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, ADOPTED PURSUANT TO THE COLORADO PLANNED UNIT DEVELOPMENT ACT OF 1972, AS AMENDED.

- APPLICABILITY

THE PROVISIONS OF THIS PUD SHALL RUN WITH THE LAND. THE LANDOWNERS, THEIR SUCCESSORS, HEIRS, OR ASSIGNS SHALL BE BOUND BY THIS DEVELOPMENT PLAN, AS AMENDED AND APPROVED BY THE PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT DIRECTOR OR BOARD OF COUNTY COMMISSIONERS.

- ADOPTION

THE ADOPTION OF THIS DEVELOPMENT PLAN SHALL EVIDENCE THE FINDINGS AND DECISIONS OF THE EL PASO COUNTY BOARD OF COUNTY COMMISSIONERS THAT THIS DEVELOPMENT PLAN FOR EAGLE FOREST PUD IS IN GENERAL CONFORMITY WITH THE EL PASO COUNTY MASTER PLAN, EL PASO COUNTY POLICY PLAN AND APPLICABLE SMALL AREA PLAN(S); IS AUTHORIZED UNDER THE PROVISION OF THE EL PASO COUNTY LAND DEVELOPMENT CODE; AND THAT THE EL PASO COUNTY LAND DEVELOPMENT CODE AND THIS DEVELOPMENT PLAN COMPLIES WITH THE COLORADO PLANNED UNIT DEVELOPMENT ACT OF 1972, AS AMENDED.

- RELATIONSHIP TO COUNTY REGULATIONS

THE PROVISIONS OF THIS DEVELOPMENT PLAN SHALL PREVAIL AND GOVERN THE DEVELOPMENT OF EAGLE FOREST PUD, PROVIDED, HOWEVER, THAT WHERE THE PROVISIONS OF THIS DEVELOPMENT PLAN DO NOT ADDRESS A PARTICULAR SUBJECT, THE RELEVANT PROVISIONS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, AS AMENDED AND IN EFFECT AT THE TIME OF THE PUD PLAN APPROVAL (OR OWNER ACKNOWLEDGE THE PUD CHANGES WITH THE CODE), OR ANY OTHER APPLICABLE RESOLUTIONS OR REGULATIONS OF EL PASO COUNTY, SHALL BE APPLICABLE.

- ENFORCEMENT

TO FURTHER THE MUTUAL INTEREST OF THE RESIDENTS, OCCUPANTS, AND OWNERS OF THE PUD AND OF THE PUBLIC IN THE PRESERVATION OF THE INTEGRITY OF THIS DEVELOPMENT PLAN, THE PROVISIONS OF THIS PLAN RELATING TO THE USE OF LAND AND THE LOCATION OF COMMON OPEN SPACE SHALL RUN IN FAVOR OF EL PASO COUNTY AND SHALL BE ENFORCEABLE AT LAW OR IN EQUITY BY THE COUNTY WITHOUT LIMITATION ON ANY POWER OR REGULATION OTHERWISE GRANTED BY LAW.

- CONFLICT

WHERE THERE IS MORE THAN ONE PROVISION WITHIN THE DEVELOPMENT PLAN THAT COVERS THE SAME SUBJECT MATTER, THE PROVISION WHICH IS MOST RESTRICTIVE OR IMPOSES HIGHER STANDARDS OR REQUIREMENTS SHALL GOVERN.

- MAXIMUM LEVEL OF DEVELOPMENT

THE TOTAL NUMBER OF DWELLINGS OR THE TOTAL COMMERCIAL, BUSINESS, OR INDUSTRIAL INTENSITY SHOWN ON THE DEVELOPMENT PLAN FOR DEVELOPMENT WITHIN THE SPECIFIED PLANNING AREAS IS THE MAXIMUM DEVELOPMENT REQUESTED FOR PLATTING OR CONSTRUCTION (PLUS ANY APPROVED DENSITY TRANSFERS). THE ACTUAL NUMBER OF DWELLINGS OR LEVEL OF DEVELOPMENT MAY BE LESS DUE TO SUBDIVISION OR SITE DEVELOPMENT PLAN REQUIREMENTS, LAND CARRYING CAPACITY, OR OTHER REQUIREMENTS OF THE BOARD OF COUNTY COMMISSIONERS.

- PROJECT TRACKING

AT THE TIME OF ANY FINAL PLAT APPLICATION, THE APPLICANT SHALL PROVIDE A SUMMARY OF THE DEVELOPMENT, TO DATE, TO DEVELOPMENT SERVICES DEPARTMENT, IN ORDER TO ASSURE MAXIMUM DEVELOPMENT LIMITS ARE NOT EXCEEDED.

GENERAL NOTES:

1. ALL STREETS SHALL BE CONSTRUCTED TO EL PASO COUNTY STANDARDS, DEDICATED TO EL PASO COUNTY FOR AND UPON ACCEPTANCE BY EL PASO COUNTY SHALL BE MAINTAINED BY EL PASO COUNTY DEPARTMENT OF TRANSPORTATION.
2. CONTOUR INTERVALS SHOWN ON PLAN ARE 2'.
3. PUBLIC UTILITY/DRAINAGE EASEMENTS ARE PROPOSED TO BE PROVIDED ON ALL LOTS AS FOLLOWS:
 - a. FRONT: TWENTY (20) FEET
 - b. SIDE: FIFTEEN (15) FEET
 - c. REAR: TWENTY (20) FEET
 - d. STREETS: FIVE (5) FEET EASEMENT
 - e. SUBDIVISION PERIMETER: TWENTY (20) FEET
4. BUILDING ENVELOPES HAVE BEEN ESTABLISHED FOR EACH LOT AS SHOWN ON SHEET 2 AND BUILDING SETBACKS FOUND IN DESIGN STANDARDS SECTION H(2).
5. MAXIMUM DENSITY ON THIS SITE SHALL BE LIMITED TO 9 LOTS.
6. WITHOUT REQUIRING A MAJOR OR MINOR PUD PLAN AMENDMENT, LIMITED REDESIGN FLEXIBILITY IS ALLOWED IN THE PLATTING STAGE, AND LOT LINES MAY BE MOVED UP TO 20 FEET FROM THE CURRENTLY SHOWN LOCATIONS, IN CASES WHERE THE LOT LINES ARE MOVED, IN ORDER TO MAINTAIN AN EQUIVALENT SIZE BUILDING AREA, THE DEVELOPMENT SERVICES DEPARTMENT DIRECTOR MAY AUTHORIZE SETBACK CHANGES AS INDICATED IN THE DESIGN STANDARDS.
7. LOT 1 WILL ACCESS EAGLE FOREST DRIVE UPON FINAL CONSTRUCTION OF THE ROADWAY. NO ACCESS TO SHOUP ROAD WILL BE ALLOWED.

PUD MODIFICATIONS / DEVIATIONS

SITE DATA:

OWNER / APPLICANT:	EAGLE FOREST DEVELOPMENT, LLC 4920 NORTH PARK LOOP COLORADO SPRINGS, CO 80918
TAX SCHEDULE NUMBER:	52080-00-071
PARCEL SIZE:	44.2 ACRES
CURRENT AND PROPOSED ZONE:	P.U.D.
CURRENT USE:	ONE SINGLE FAMILY HOME
PROPOSED LAND USE:	SINGLE FAMILY RESIDENTIAL
NUMBER OF LOTS:	9
TOTAL LOT AREA:	34.2 ACRES
GROSS DENSITY	0.20 DU/AC
NET DENSITY	0.26 DU/AC
AREA OF RIGHT OF WAY	4.41 ACRES

TRACT TABLE

TRACT	SIZE	USE	OWNERSHIP	MAINTENANCE
A	5.4 ac.	OPEN SPACE / DRAINAGE	EAGLE FOREST HOA	EAGLE FOREST HOA

A. Project Description

Eagle Forest PUD is a 9 lot single family residential subdivision with an open space tract and a total area of 44.19 acres located in Black Forest.

B. Permitted Uses

1. Single family dwelling
2. Vacation rentals (less than 30 days of consecutive rental) of any single family dwelling or guest house is not permitted.
3. Any easements as required by the approved and recorded development plan for utilities and open space.
4. No construction of any kind outside the building envelope except as authorized and permitted by the Pikes Peak Regional Building Department, El Paso County Development Services and the EFACC.
5. No outside storage of any vehicles or lawn and garden equipment or any other items that are unsightly and that may be viewed from any interior roadway, home, lot or common area.
6. All uses shall provide sufficient off-street parking based on the needs created by the use.
7. The use of any property as a Child Care Center, Family Care Home or Group Home shall be subject to the regulations of Section 5 of the El Paso County Land Development Code, as may be amended in the future.
8. The existing structures on Lot 1
9. Open space
10. Prohibited uses:
 - a. Marijuana Clubs and Marijuana Grow Facilities
 - b. Mobile home of any kind
 - c. Horse riding and horse facilities

C. Temporary Uses

Temporary Uses shall be subject to the regulations of Section 5 of the El Paso County Land Development Code, as may be amended in the future.

1. Model Home/Subdivision sales office
2. Garage/yard sales
3. Construction equipment storage and field offices when associated with a permitted use

D. Accessory Uses

Accessory Uses shall be subject to the regulations of Section 5 of the El Paso County Land Development Code, as may be amended in the future.

Accessory Uses for Residential Lots:

1. Allowed accessory uses to be approved by EFHOA.
2. Accessory uses may be limited in size and location by the Covenants and/or the EFACC
3. All accessory uses to be located within designated building envelope except by EFHOA
4. Domestic animal keeping of up to 4 pets excluding chickens, pigeons or bee keeping
5. Residential Home Occupation defined as an accessory commercial activity or business service conducted on the site of a dwelling unit, only by residents of the dwelling unit, in a manner clearly incidental to the residential character of the site and surrounding neighborhood. Outside storage of material or equipment in support of said home occupation is prohibited.
6. A total square footage of lawn and/or garden of 3,000 square feet.

E. Accessory Structures

Accessory Structures must comply with the Dimensional Standards in Section G of the Guidelines and shall be subject to the regulations relating to Accessory Structures of Section 5 of the El Paso County Land Development Code, as may be amended in the future. Residential Accessory Structures are restricted to the following:

1. Accessory buildings should not be located closer to a road than the main buildings unless there is a compelling site specific reason as determined by the EFACC.
2. Detached or attached private parking garage
3. One storage shed
4. Gazebo
5. Deck (attached or detached, covered or uncovered)
6. Swimming pool, hot tub, tennis court, or similar private recreation facilities.
7. Fence, wall or hedge
8. Antennas, radio facilities and small satellite dishes.
9. Guest house as an accessory building/secondary structure
10. Solar energy systems

F. Signs

Permitted Signs:

1. Entryway development identification signs
2. Address signs on residences limited to 6 square feet
3. No exterior advertising or graphics except for individual temporary sales signs which will not exceed 6 square feet

G. Fence Standards

Fencing shall be subject to the covenants and design criteria established by the Architectural Control Committee and the following additional fencing guidelines specific to the development:

1. Any fencing shown on the Development Plan to be built by the developer
2. Privacy fencing 8' maximum height not to enclose more than 10,000 square feet. Fencing over 6 ft tall may require a building permit.
3. No privacy fencing outside building envelope.
4. Temporary fencing associated with construction and/or erosion control
5. Fencing shall not impede drainage ways

H. Dimensional Standards

1. Maximum Building Height: 35 feet as defined in Section 1.15 of the El Paso County Land Development Code
2. Setbacks

Each lot has specific setbacks as indicated below and/or on the PUD Development Plan. Some flexibility is allowed in the platting stage and lot lines may be moved up to 20 feet from the currently shown locations. In cases where the lot lines are moved, in order to maintain an equivalent size building area, the Development Services Department Director may authorize setback changes within the minimums established below. The following shall be minimum setbacks unless the Building Envelopes shown on the Final Plat are more restrictive:

- Front: 25 feet
- Side: 25 feet
- Rear: 35 feet

Variances from the setback guidelines must be approved by both the Eagle Forest Architectural Control Committee (EFACC) and the El Paso County Development Services Department.

I. Lot Sizes

The PUD Development Plan and the Final Plat establish the lot sizes. No subdivision of any lot will be permitted if such subdivision results in the creation of additional building lots.

J. Open Space Tract A

Allowed Uses:

1. Open space
2. Fire protection cistem
3. Emergency Vehicle pull-off
4. Mailbox cluster and associated parking
5. Picnic facilities
6. Other recreational facilities as approved by the EFACC

Ownership/Usage/Maintenance/Access:

1. Usage shall be limited to the Declarant, owners, residents, guests and invitees of EFPUD and the owner of Lot 1 Hannasch Sub unless the EFHOA defaults on the transferring deed of trust.
2. Ownership to be transferred by deed of trust to Eagle Forest Homeowners Association (EFHOA) at time of final plat recordation.
3. Maintenance will be the responsibility of the EFHOA.
 4. Access limited to emergency and maintenance vehicles

K. Streets

Eagle Forest Drive will provide access to all lots in EFPUD and will be a paved public street designed to EPC Rural Local Residential standards. Eagle Forest Drive will have a 60' ROW with 28' asphalt width and 2' shoulders. Public Improvement Easements with 5' width will be located on each side of the road. Maintenance of Eagle Forest Drive will be provided by El Paso County.

L. Architectural Control Committee Review/Covenants

All improvements within EFPUD shall be subject to the Declaration of Protective Covenants, Conditions, Restrictions, Easements and Charges for Eagle Forest Subdivision, including the Architectural Control Committee regulations.

REVISIONS:

LWA LAND SURVEYING, INC.
953 E. FILLMORE STREET
COLORADO SPRINGS, CO 80907
TELEPHONE (719) 636-5179 FAX (719) 636-5199

DWG: EAGLE FOREST PUD
SCALE: VARIES
DATE: 4/10/20
PROJECT NO.: 11065
SHEET 1 OF 2

EAGLE FOREST SUBDIVISION
PRELIM / PUD DEVELOPMENT PLAN
EAGLE FOREST DEVELOPMENT, LLC
EL PASO COUNTY, CO

EAGLE FOREST SUBDIVISION PRELIMINARY / P.U.D. DEVELOPMENT PLAN

A PORTION OF THE SOUTHEAST QUARTER OF SECTION 8,
TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M.
EL PASO COUNTY, COLORADO

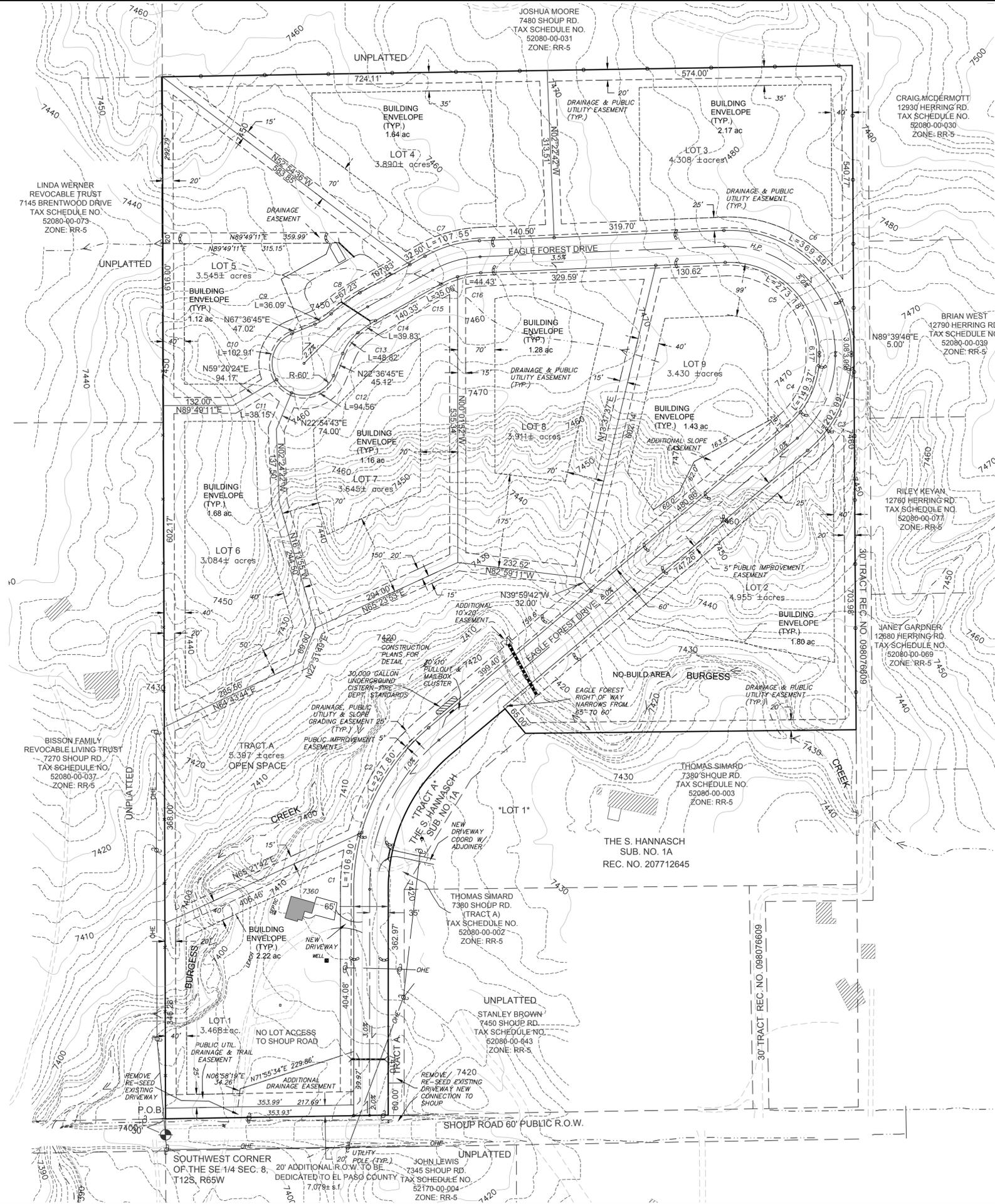


REVISIONS:

LWA LAND SURVEYING, INC.
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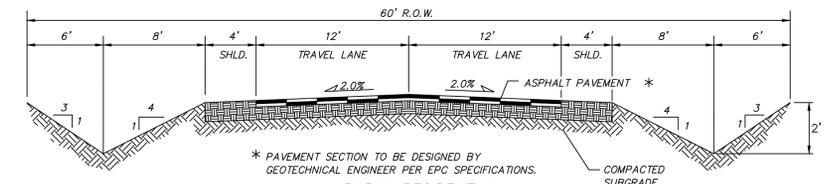
DWG: EAGLE FOREST PUD
SCALE: 1"=100'
DATE: 4/2/20
PROJECT NO. 11065
SHEET 1 OF 2

EAGLE FOREST SUBDIVISION
PRELIM / PUD DEVELOPMENT PLAN
EAGLE FOREST DEVELOPMENT, LLC
EL PASO COUNTY, CO

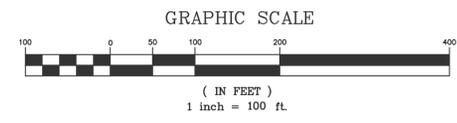


CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	Δ=15°30'24"	395.00	106.90	N07°45'30"E	106.58
C2	Δ=34°29'36"	395.00	237.80	N32°45'30"E	234.22
C3	Δ=50°20'32"	230.00	202.09	N24°50'02"E	195.65
C4	Δ=50°20'32"	170.00	149.37	N24°50'02"E	144.61
C5	Δ=92°04'11"	170.00	273.18	N46°22'19"W	244.72
C6	Δ=92°04'11"	230.00	369.59	N46°22'19"W	331.09
C7	Δ=28°42'29"	230.00	107.55	N74°11'51"E	106.97
C8	Δ=13°45'24"	280.00	67.23	N53°55'24"E	67.07
C9	Δ=20°34'03"	100.55	36.09	N57°19'43"E	35.90
C10	Δ=98°16'20"	60.00	102.91	N18°28'35"E	90.75
C11	Δ=36°25'41"	60.00	38.15	N48°52'26"W	37.51
C12	Δ=90°17'59"	60.00	94.56	N67°45'44"E	85.07
C13	Δ=27°49'03"	100.55	48.82	N36°31'16"E	48.34
C14	Δ=10°22'19"	220.00	39.83	N55°38'57"E	39.77
C15	Δ=11°49'02"	170.00	35.06	N66°42'37"E	35.00
C16	Δ=14°58'27"	170.00	44.43	N80°06'22"E	44.30

ROAD SURFACE DESIGN / TO BE MAINTAINED BY H.O.A.



* PAVEMENT SECTION TO BE DESIGNED BY
GEOTECHNICAL ENGINEER PER EPC SPECIFICATIONS.
RURAL RESIDENTIAL
TYPICAL SECTION (A)
NOT TO SCALE



Appendix C

2005 & 2020 Google Earth Imagery of Subject Site

7360 Shoup Rd

10/2005

Legend

 7360 Shoup Rd

 7360 Shoup Rd



7360 Shoup Rd

06/2020

Legend

 7360 Shoup Rd

 7360 Shoup Rd

