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Janaury 26, 2024
Revised March 11, 2024

Vertex Consulting Services
455 East Pikes Peak Avenue, Suite 101
Colorado Springs, Colorado 80903

Attn: Craig Dossey

Re: Soils and Geology Study
McLean Subdivision
2415 Hodgen Road
Parcel No. 61281-00-014
El Paso County, Colorado
Entech Job No. 231709

Dear Mr. Dossey:

The project consists of subdividing 38.68-acres into two rural residential lots. An existing home and out buildings on Lot 1 will remain. The site is located east of the intersection of Hodgen Road and Roller Coaster Road on the southern side of Hodgen Road, in El Paso County, Colorado.

GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION

The site is located in a portion of the NE¼ of Section 28, Township 11 South, Range 66 West of the 6th Principal Meridian in El Paso County, Colorado. The site is located approximately 2½ miles east of Monument, Colorado, east of the intersection of Hodgen Road and Roller Coaster Road in El Paso County, Colorado. The location of the site is as shown on the Vicinity Map, Figure 1.

The topography of the site is gradually to moderately sloping to the south with steeper slopes along the minor drainages in the central portion of the property. The drainages were dry at the time of our site investigation. Vegetation on the site primarily consist of ponderosa pines with field grasses and weeds. The site boundaries are indicated on the USGS Map, Figure 2. Previous land uses have included undeveloped and rural residential development. Site photographs, taken October 24, 2023, are included in Appendix A.

Total acreage involved in the proposed subdivision is 38.68-acres. Two rural residential lots are proposed as part of the replat. The proposed lot sizes are 20.25 and 18.41-acres. The existing residence, outbuildings, on-site wastewater treatment system, and water well located on proposed Lot 1, will remain. The new lot will be serviced by individual water wells and on-site wastewater treatment system. The Site Plan with the proposed replat is presented in Figure 3.

LAND USE AND ENGINEERING GEOLOGY

This site was found to be suitable for the proposed development. Areas were encountered where the geologic conditions will impose some constraints on development and land use. These include areas of potentially expansive soils, downslope creep, areas potential seasonally shallow groundwater, and shallow bedrock. Based on the proposed development plan, it appears that these areas will have some minor impacts on the development. These conditions will be discussed in greater detail in the report.

In general, it is our opinion that the development can be achieved if the observed geologic conditions on site are either avoided or properly mitigated. All recommendations are subject to the limitations discussed in the report.

SCOPE OF THE REPORT

The scope of the report will include the following a general geologic analysis utilizing published geologic data. Detailed site-specific mapping will be conducted to obtain general information in respect to major geographic and geologic features, geologic descriptions and their effects on the development of the property.

FIELD INVESTIGATION

Our field investigation consisted of the preparation of a geologic map of any bedrock features and significant surficial deposits. The Natural Resource Conservation Service (NRCS), previously the Soil Conservation Service (SCS) survey was also reviewed to evaluate the site. The position of mappable units within the subject property are shown on the Geologic Map. Our mapping procedures involved both field reconnaissance and measurements, and aerial photo reconnaissance and interpretation. The same mapping procedures have also been utilized to produce the Geology/Engineering Geology Map which identified pertinent geologic conditions affecting development. The field mapping was performed by personnel of Entech Engineering, Inc. (Entech) on October 24, 2023.

Two test borings were drilled and two test pits were excavated on the site to determine general suitability for construction and the use of on-site wastewater treatment systems and general soil characteristics. The locations of the test borings are indicated on the Site Plan/Test Pit Location Map, Figure 3. The Test Boring Logs are presented in Appendix B. Results of this testing will be discussed later in this report.

Laboratory testing was also performed on some of the soils to classify and determine the soils engineering characteristics. Laboratory tests included grain-size analysis, ASTM D-422, and Atterberg Limits, ASTM D-4318. Results of the laboratory testing are included in Appendix C.

SOIL AND GEOLOGIC CONDITIONS

Soil Survey

The Natural Resource Conservation Service (NRCS) (Reference 1, Figure 4), previously the Soil Conservation Service (Reference 2) has mapped three soil types on the site. Complete descriptions of the soil types are presented in Appendix D. In general, the soils consist of sandy loam to gravelly loamy sand. The soils are described as follows:

Type	Description
41	Kettle gravelly loamy sand, 8 to 40 percent slopes
68	Peyton-Pring complex, 3 to 8 percent slopes
93	Tomah-Crowfoot complex, 8 to 15 percent slopes

The soils have been described to have moderate to rapid permeabilities. The soils are described as well suited for use as homesites. Possible hazards with soils erosion are present on the site. The erosion potential can be controlled with vegetation. The soils have been described to have moderate erosion hazards (Reference 2).

Soils

The soils encountered in the test borings and test pits consisted of a layer of silty to gravelly silty sand and clayey sand overlying sandstone bedrock with varying amounts of silt and clay. The sands were encountered at medium dense states and moist conditions. Bedrock was encountered at depths ranging from the existing surface grade to 7 The upper sands were encountered at medium dense states and moist to dry conditions. The sand soils exhibit a low expansion potential.

Groundwater

Groundwater was not encountered in the test borings or test pits, which were drilled to 20 feet and excavated to 3½ to 8 feet. It is anticipated groundwater will not affect shallow foundations on the site. Areas of potential seasonally shallow groundwater have been mapped in minor drainages on the site that are discussed in the following sections. Fluctuations in groundwater conditions may occur due to variations in rainfall or other factors not readily apparent at this time. Isolated sand layers within the soil profile can carry water in the subsurface. Contractors should be cognizant of the potential for the occurrence of subsurface water features during construction.

Geology

Approximately 7 miles west of the site is a major structural feature known as the Rampart Range Fault. This fault marks the boundary between the Great Plains Physiographic Province and the Southern Rocky Mountain Province. The site exists within the southwestern extent of a large structural feature known as the Denver Basin. Bedrock in the area is typically gently dipping in a northeasterly direction (Reference 3). The bedrock underlying the site consists of the Dawson Formation of Cretaceous Age. The Dawson Formation typically consists of coarse-grained arkosic sandstone with interbedded layers of claystone or siltstone. Overlying the Dawson formation are unconsolidated layers of colluvial and residual soils, and alluvium deposited along the minor drainages.

The geology of the site was evaluated using the *Geologic Map of the Black Forest Quadrangle,* by Thorson. in 2003, (Reference 4, Figure 5). The Geology Map for the site is presented in Figure 6. Three mappable units were identified on this site which is described as follows:

Qal **Recent Alluvium of Holocene Age:** These are recent deposits that have been deposited along the drainages that exist on-site. These materials consist of silty to gravelly sands. Some of these alluviums may contain highly organic soils.

Qc **Colluvium of Quaternary Age:** These materials consist of gravelly silty sands deposited by the action of sheetwash and gravity as well as the in-situ weathering of the bedrock materials on-site.

Tkd **Dawson Formation of Tertiary to Cretaceous Age:** The Dawson formation typically consists of arkosic sandstone with interbedded fine-grained sandstone, siltstone and claystone. Overlying this formation is a variable layer of residual soil. The residual soils were derived from the in-situ weathering of the bedrock materials on-site. These soils consisted of silty to clayey sands and sandy clays.

The soils listed above were mapped from site-specific mapping, the *Geologic Map of the Black Forest Quadrangle* distributed by the Colorado Geologic Survey in 2003 (Reference 4, Figure 5), The *Geologic Map of the Colorado Springs-Castle Rock Area,* distributed by the US Geological Survey in 1979 (Reference 5), and the *Geologic Map of the Denver 1° x 2°*

Quadrangle, distributed by the US Geological Survey in 1981 (Reference 6). The test borings and test pits were used in evaluating the site and is included in Appendix B. The Geology Map prepared for the site is presented in Figure 6.

ENGINEERING GEOLOGIC HAZARDS

Mapping has been performed on this site to identify areas where various geologic conditions exist of which builders should be cognizant during the planning, design and construction stages where new construction is proposed. The engineering geologic constraints/hazards identified on this site include potentially expansive soils, downslope creep, areas potential seasonally shallow groundwater, and shallow bedrock. These hazards and recommended mitigation techniques are discussed as follows:

Expansive Soils – Constraint

Expansive soils were not encountered in the test borings. Bedrock underlying the site consist of the Dawson Formation of Cretaceous Age, which consists of coarse-grained arkosic sandstone with interbedded layers of claystone or siltstone. Expansive clays or claystone, if encountered beneath foundations, can cause differential movement in the structure foundation.
Mitigation: Should expansive soils be encountered beneath the foundation; mitigation will be necessary. Mitigation of expansive soils will require special foundation design. Overexcavation and replacement with non-expansive soils at a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D-1557 is a suitable mitigation, which is common in the area. Floor slabs on expansive soils should be expected to experience movement. Overexcavation and replacement has been successful in minimizing slab movements.

Landslide Hazard, and Slope Stability

Slopes observed on the site are gradually to moderately sloping to the south with steeper slopes located along portions of the drainages. The slopes in the anticipated building areas of the site are gradually to moderately sloping to the south and no signs of instability were observed on the site. Areas of downslope creep have been mapped along portions of the drainages on the site and are discussed below.

- Downslope Creep Areas – Constraint
  Some of the slopes along the drainages on the site have been identified as downslope creep areas on the Geology/Engineering Geology Map, Figure 6. These areas are located within Lot 2 in the eastern portion of the site and can be avoided by future site development. The slopes were traversed to observe any signs of recent movement or failures. The slopes appeared to be stable in their current state based on our site observations. In areas within and adjacent to the area mapped as downslope creep we would anticipate to potential for accelerated lateral and vertical movement of the near surface soils in a downslope direction.
  Mitigation: The design of foundations in these areas should account for the sloping conditions. A lateral pressure diagram for the design of walls in sloping areas is included in Figure 7. Foundation stiffeners such as tie-beams, buttresses or additional reinforcement are recommended. The excavation and any fill placed on the site should be benched into the slope and native soils. Slopes in the building area should be constructed at no steeper than 3:1 unless held by engineer-designed retaining walls designed for the global slope stability.

Potential Seasonally Shallow Groundwater Area – Constraint

The site is not mapped within any floodplains according to the FEMA Map No. 08041CO285G, dated December 7, 2018 (Figure 8, Reference 6). Areas of potential seasonally shallow groundwater were observed on the site (Figure 6). In these areas, we would anticipate the potential for periodically high subsurface moisture conditions and frost heave potential. These areas lie along minor drainages located in the central portions of the site. Water was not observed in any of the drainages at the time of our site investigation. These areas can likely be avoided by development. The potential exists for high groundwater levels during high moisture periods and should structures encroach on these areas the following precautions should be followed.

Mitigation: Foundations must have a minimum 30-inch depth for frost protection. In areas where high subsurface moisture conditions are anticipated periodically, subsurface perimeter drains are recommended to help prevent the intrusion of water into areas below grade. Typical drain details are presented in Figure 9. If shallow groundwater is encountered, underslab drains or interceptor drains may be necessary Figures 10 and 11. Specific drainage details and recommendations should be made once building locations and plans are finalized. Any grading in these areas should be done to direct surface flow around construction to avoid areas of ponded water. All organic material would be completely removed prior to any fill placement. **Specific drainage studies are beyond the scope of this report.**

Shallow Bedrock – Constraint

Bedrock was encountered in the test borings and test pits at depths ranging from the existing surface to 7 feet. Shallow bedrock will be encountered across the majority of this site. Where shallow bedrock is encountered, excavation/grading may be difficult requiring track-mounted excavators with ripper attachments. Bedrock will likely be encountered in the proposed building excavations. In areas of shallow bedrock, the potential for perched groundwater conditions exist. Where perched groundwater is encountered, underslab drains or interceptor drains may be necessary Figures 10 and 11.

Faults – Hazard

The closest fault is the Rampart Range Fault, located approximately 7 miles west of the site (Reference 3). No faults are mapped in the site itself. Previously, Colorado was mapped entirely within Seismic Zone 1, a very low seismic risk. Additionally, the International Residential Code (IRC), 2003, currently places this area in Seismic Design Category B, also a low seismic risk. According to a report by the Colorado Geological Survey by Kirkman and Rogers, Bulletin 43 (1981) (Reference 7), this area should be designed for Zone 2 due to more recent data on the potential for movement in this area and any resultant earthquakes.

Radon – Hazard

Radon levels for the area have been reported by the Colorado Geologic Survey in the open file, Report No. 91-4 (Reference 8). Average Radon levels for the 80921-zip code is 1.90 pCi/l. The following is a table of radon levels in this area:

	80921
0 < 4 pCi/l	100.00%
4 < 10 pCi/l	0.00%
10 < 20 pCi/l	0.00%
> 20 pCi/l	0.00%

Mitigation:
The potential for high radon levels is present for the site. Build-up of radon gas can usually be mitigated by providing increased ventilation of basement and crawlspace and sealing joints. **Specific requirements for mitigation should be based on site specific testing.**

RELEVANCE OF GEOLOGIC CONDITIONS TO LAND USE PLANNING

The proposed development will consist of subdividing 38.68-acres into two rural residential lots. An existing home and out buildings on Lot 1 will remain. The new lot will be serviced by individual water wells and on-site wastewater treatment systems. The existing geologic and engineering geologic conditions will impose minor constraints on development and construction. The geologic conditions on the site potentially expansive soils, downslope creep, areas potential seasonally shallow groundwater, and shallow bedrock, which can be satisfactorily mitigated through avoidance or proper engineering design and construction practices.

The upper granular soils encountered in the test borings on the site were encountered at medium dense to dense states, and the sandstone was encountered at dense states. Sandstone bedrock was encountered at the surface Test Boring No. 1. High allowable bearing capacities should be expected in areas of shallow bedrock. Difficult excavation of the very dense sandstone should be expected. These soils will not prohibit development.

The sands and sandstone encountered in the test borings are considered to have low expansion potential, however, highly expansive claystone and siltstone are commonly interbedded in the sandstone of the Dawson Formation. Mitigation of expansive soils if encountered will be required. Overexcavation and replacement with non-expansive soils at a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D-1557 is a suitable mitigation, which is common in the area. Overexcavation depths of 3 to 4 feet are typical for the expansive soils encountered in the area. Floor slabs on expansive soils should be expected to experience movement. Overexcavation and replacement has been successful in minimizing slab movements. These soils will not prohibit development.

Areas of potential seasonally shallow groundwater were observed on the site (Figure 6). In these areas, we would anticipate the potential for periodically high subsurface moisture conditions and frost heave potential. In these areas, we would anticipate the potential for periodically high subsurface moisture conditions and frost heave potential. These areas lie along minor drainages located in the central portion of the site. Water was not observed in any of the drainages at the time of our site investigation. Subsurface perimeter drains are recommended should structures encroach on these areas. Typical drain details are presented in Figure 8. If shallow groundwater is encountered, underslab drains or interceptor drains may be necessary Figures 9 and 10. Specific drainage details and recommendations should be made once building locations and plans are finalized. Septic systems are not recommended in in these areas due to the potential for shallow groundwater. Any grading in theses areas should be done to direct surface flow around construction to avoid areas of ponded water. All organic material should be completely removed prior to any fill placement. Specific drainage studies are beyond the scope of this report. The site is not mapped within any floodplains according to the FEMA Map No. 80841C0258G (Figure 7, Reference 6).

Bedrock was encountered in the test borings at depths ranging from the 1 to 4 feet. Shallow bedrock will be encountered across the majority of this site. Where shallow bedrock is encountered, excavation/grading may be difficult requiring track-mounted excavators with ripper

attachments. Bedrock will likely be encountered in the proposed building excavations. In areas of shallow bedrock, the potential for perched groundwater conditions exist. Where perched groundwater is encountered, underslab drains or interceptor drains may be necessary Figures 9 and 10.

In summary, the granular soils and sandstone will likely provide good support for shallow foundations. The geologic conditions encountered on site can be mitigated with avoidance or proper engineering and construction practices.

ROADWAY AND EMBANKMENT CONSTRUCTION RECOMMENDATIONS

In general, the site soils are suitable for the proposed roadways and embankments. Groundwater may be encountered in deeper cuts and along or adjacent to drainage areas. Groundwater is not anticipated to affect excavations on the site, however, if excavations encroach on the groundwater level unstable soil conditions may be encountered. Excavation of saturated soils will be difficult with rubber-tired equipment. Stabilization using shot rock or geogrids may be necessary.

Any areas to receive fill should have all topsoil, organic material or debris removed. Prior to fill placement Entech should observe the subgrade. Fill must be properly benched and compacted to minimize potentially unstable conditions in slope areas. Fill slopes should be 3:1. The subgrade should be scarified and moisture conditioned to within 2 percent of optimum moisture content and compacted to a minimum of 95 percent of its maximum Standard Proctor Dry Density ASTM D-698 (cohesive soils) or 95 percent of its Modified Proctor Dry Density ASTM D-1557 (granular soils). prior to placing new fill. Areas receiving fill may require stabilization with rock or fabric if soft soils or shallow groundwater conditions are encountered.

New fill should be placed in thin lifts not to exceed 6 inches after compaction while maintaining at least 95 percent of its maximum Modified Proctor Dry Density, ASTM D-1557 for sandy soils, and a minimum of 95 percent of its maximum Standard Proctor Dry Density, ASTM D-698 for clay soils. These materials should be placed at a moisture content conducive to compaction, usually 0 to ±2% of Proctor optimum moisture content. The placement and compaction of fill should be observed and tested by Entech during construction. Entech should approve any import materials prior to placing or hauling them to the site. Additional investigation will be required for pavement designs once roadway grading is completed and utilities are installed.

ECONOMIC MINERAL RESOURCES

Some of the sandy materials on-site could be considered a low-grade sand resource. According to the *El Paso County Aggregate Resource Evaluation Map* (Reference 9), of the area of the site is not mapped with any potential aggregate resources. According to the *Atlas of Sand, Gravel and Quarry Aggregate Resources, Colorado Front Range Counties* distributed by the Colorado Geological Survey (Reference 10), the site is not mapped with any resources. According to the *Evaluation of Mineral and Mineral Fuel Potential* (Reference 11), the area of the site has been mapped as “little or no potential” for industrial minerals.

According to *the Evaluation of Mineral and Mineral Fuel Potential of El Paso County State Mineral Lands* (Reference 11), the site is mapped within the Denver Basin Coal Region. However, the area of the site has been mapped as “Poor” for coal resources. No active or inactive mines have been mapped in the area of the site. No metallic mineral resources have been mapped on the site (Reference 11).

The site has been mapped as “Fair” for oil and gas resources (Reference 11). No oil or gas fields have been discovered in the area of the site. The sedimentary rocks in the area may lack the geologic structure for trapping oil or gas; therefore, it may not be considered a significant resource. Hydraulic fracturing is a new method that is being used to extract oil and gas from rocks. It utilizes pressurized fluid to extract oil and gas from rocks that would not normally be productive. The area of the site has not been explored to determine if the rocks underlying the site would be commercially viable utilizing hydraulic fracturing. The practice of hydraulic fracturing has come under review due to concerns about environmental impacts, health and safety.

EROSION CONTROL

The soil types observed on the site are mildly to highly susceptible to wind erosion, and moderately to highly susceptible to water erosion. A minor wind erosion and dust problem may be created for a short time during and immediately after construction. Should the problem be considered severe enough during this time, watering of the cut areas or the use of chemical palliative may be required to control dust. However, once construction has been completed and vegetation re-established, the potential for wind erosion should be considerably reduced.

With regard to water erosion, loosely compacted soils will be the most susceptible to water erosion, residually weathered soils and weathered bedrock materials become increasingly less susceptible to water erosion. For the typical soils observed on site, allowable velocities or unvegetated and unlined earth channels would be on the order of 3 to 4 feet/second, depending upon the sediment load carried by the water. Permissible velocities may be increased through the use of vegetation to something on the order of 4 to 7 feet/second, depending upon the type of vegetation established. Should the anticipated velocities exceed these values, some form of channel lining material may be required to reduce erosion potential. These might consist of some of the synthetic channel lining materials on the market or conventional riprap. In cases where ditch-lining materials are still insufficient to control erosion, small check dams or sediment traps may be required. The check dams will serve to reduce flow velocities, as well as provide small traps for containing sediment. The determination of the amount, location and placement of ditch linings, check dams and of the special erosion control features should be performed by or in conjunction with the drainage engineer who is more familiar with the flow quantities and velocities.

Cut and fill slope areas will be subjected primarily to sheetwash and rill erosion. Unchecked rill erosion can eventually lead to concentrated flows of water and gully erosion. The best means to combat this type of erosion is, where possible, the adequate re-vegetation of cut and fill slopes. Cut and fill slopes having gradients more than three (3) horizontal to one (1) vertical become increasingly more difficult to revegetate successfully. Therefore, recommendations pertaining to the vegetation of the cut and fill slopes may require input from a qualified landscape architect and/or the Soil Conservation Service.

CLOSURE

It is our opinion that the existing geologic engineering and geologic conditions will impose some minor constraints on development and construction of the site. The majority of these conditions can be avoided by construction. Others can be mitigated through proper engineering design and construction practices. The proposed development and use are consistent with anticipated geologic and engineering geologic conditions.

It should be pointed out that because of the nature of data obtained by random sampling of such variable and non-homogeneous materials as soil and rock, it is important that we be informed of any differences observed between surface and subsurface conditions encountered in construction and those assumed in the body of this report. **Individual investigations for new building sites and septic systems will be required prior to construction.** Construction and design personnel should be made familiar with the contents of this report. Reporting such discrepancies to Entech Engineering, Inc. soon after they are discovered would be greatly appreciated and could possibly help avoid construction and development problems.

This report has been prepared for Vertex Consulting Services, for application to the proposed project in accordance with generally accepted geologic soil and engineering practices. No other warranty expressed or implied is made.

We trust that this report has provided you with all the information that you required. Should you require additional information, please do not hesitate to contact Entech Engineering, Inc.

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Logan L. Langford, P.G.
Sr. Geologist

Reviewed by:

Joseph C Goode Jr.

Digitally signed by Joseph C Goode Jr.
Date: 2024.03.11 13:19:21 -06'00'

Joseph C. Goode, Jr., P.E.
President

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Encl.

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BIBLIOGRAPHY

1. Natural Resource Conservation *Service,* August 24, 2023*. Web Soil Survey.* United States Department Agriculture, http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

2. United States Department of Agriculture Soil Conservation Service. June 1981. *Soil Survey of El Paso County Area, Colorado.*

3. Bryant, Bruce; McGrew, Laura W. and Wobus, Reinhard A. 1981. *Geologic Map of the Denver 1° x 2° Quadrangle, North-Central Colorado*. U.S. Geologic Survey. Map I-1163.

4. Thorson, Jon P., 2003. *Geologic Map of the Black Forest Quadrangle, El Paso County, Colorado*. Colorado Geological Survey. Open-File Report 03-6.

5. Trimble, Donald E. and Machette, Michael N. 1979. *Geologic Map of the Colorado Springs-Castle Rock Area, Front Range Urban Corridor, Colorado*. USGS, Map I-857-F.

6. Federal Emergency Management Agency. December 7, 2018. *Flood Insurance Rate Maps for the City of Colorado Springs, Colorado.* Map Number 08041CO285G.

7. Kirkman, Robert M. and Rogers, William P., 1981. *Earthquake Potential in Colorado Springs, Colorado*. Geologic Survey. Bulletin 43.

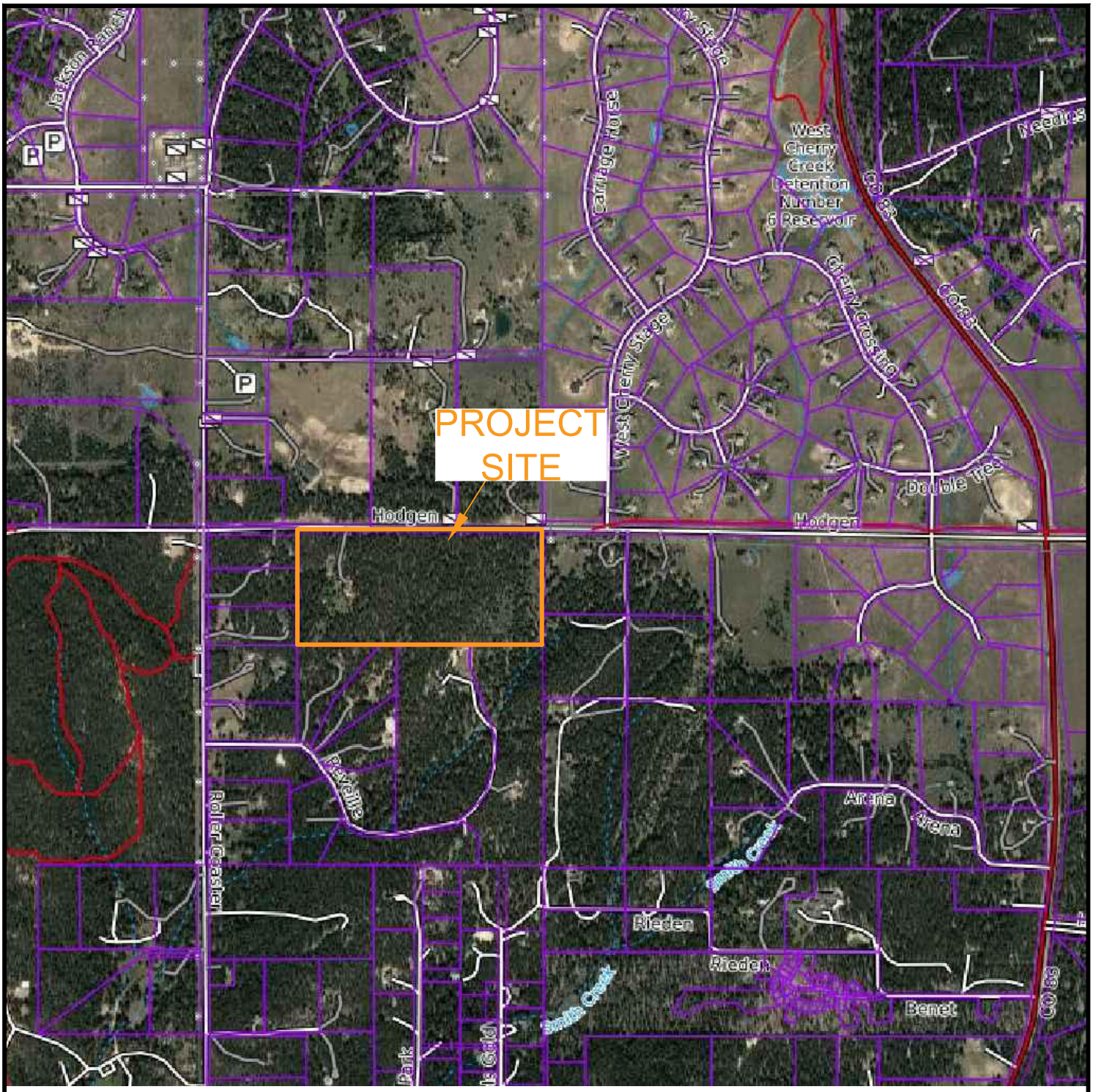
8. Colorado Geological Survey. 1991. *Results of the 1987-88 EPA Supported Radon Study in Colorado.* Open-file Report 91-4.

9. El Paso County Planning Development. December 1995. *El Paso County Aggregate Resource Evaluation Maps.*

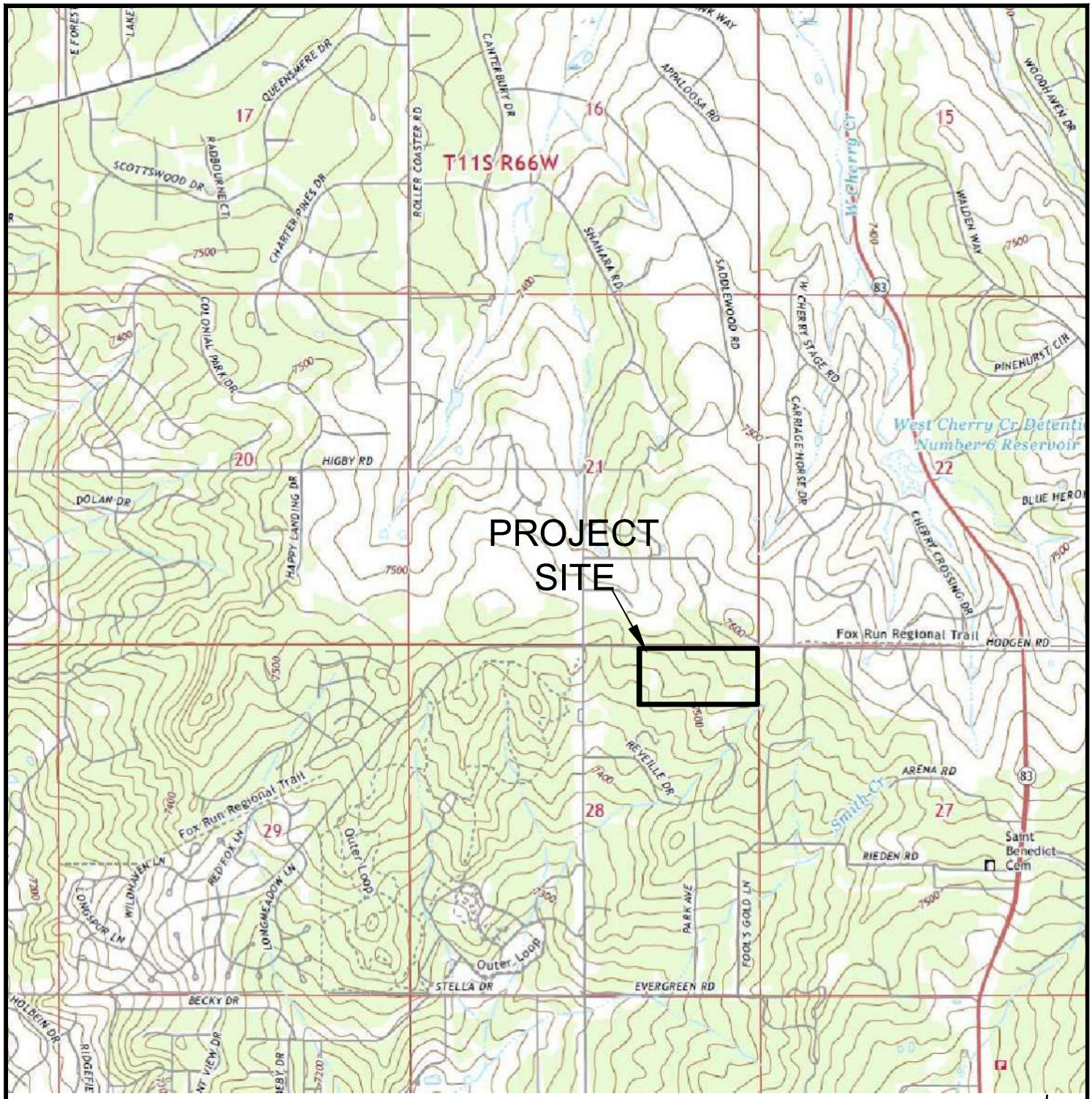
10. Schwochow, S.D.; Shroba, R.R. and Wicklein, P.C. 1974. *Atlas of Sand, Gravel, and Quarry Aggregate Resources, Colorado Front Range Counties*. Colorado Geological Survey. Special Publication 5-B.

11. Keller, John W.; TerBest, Harry and Garrison, Rachel E. 2003. *Evaluation of Mineral and Mineral Fuel Potential of El Paso County State Mineral Lands Administered by the Colorado State Land Board*. Colorado Geological Survey. Open-File Report 03-07.

FIGURES



ENTECH ENGINEERING, INC.	**VICINITY MAP** 2415 HODGEN RD VERTEX CONSULTING SERVICES	JOB NO. 231709 **FIG. 1**



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USGS TOPOGRAPHY MAP

2415 HODGEN RD
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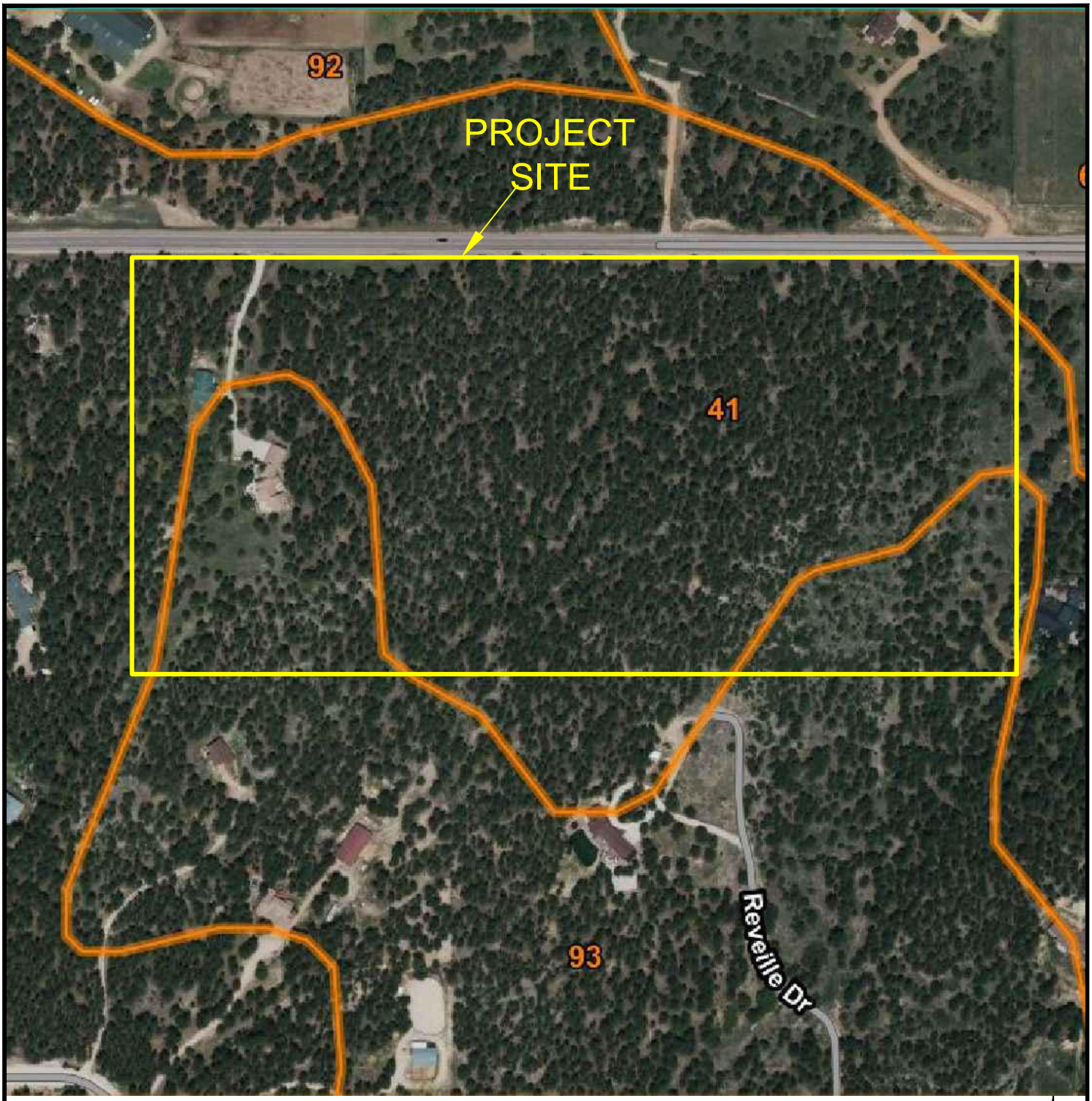
FIG. 2



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SOIL SURVEY MAP

2415 HODGEN RD
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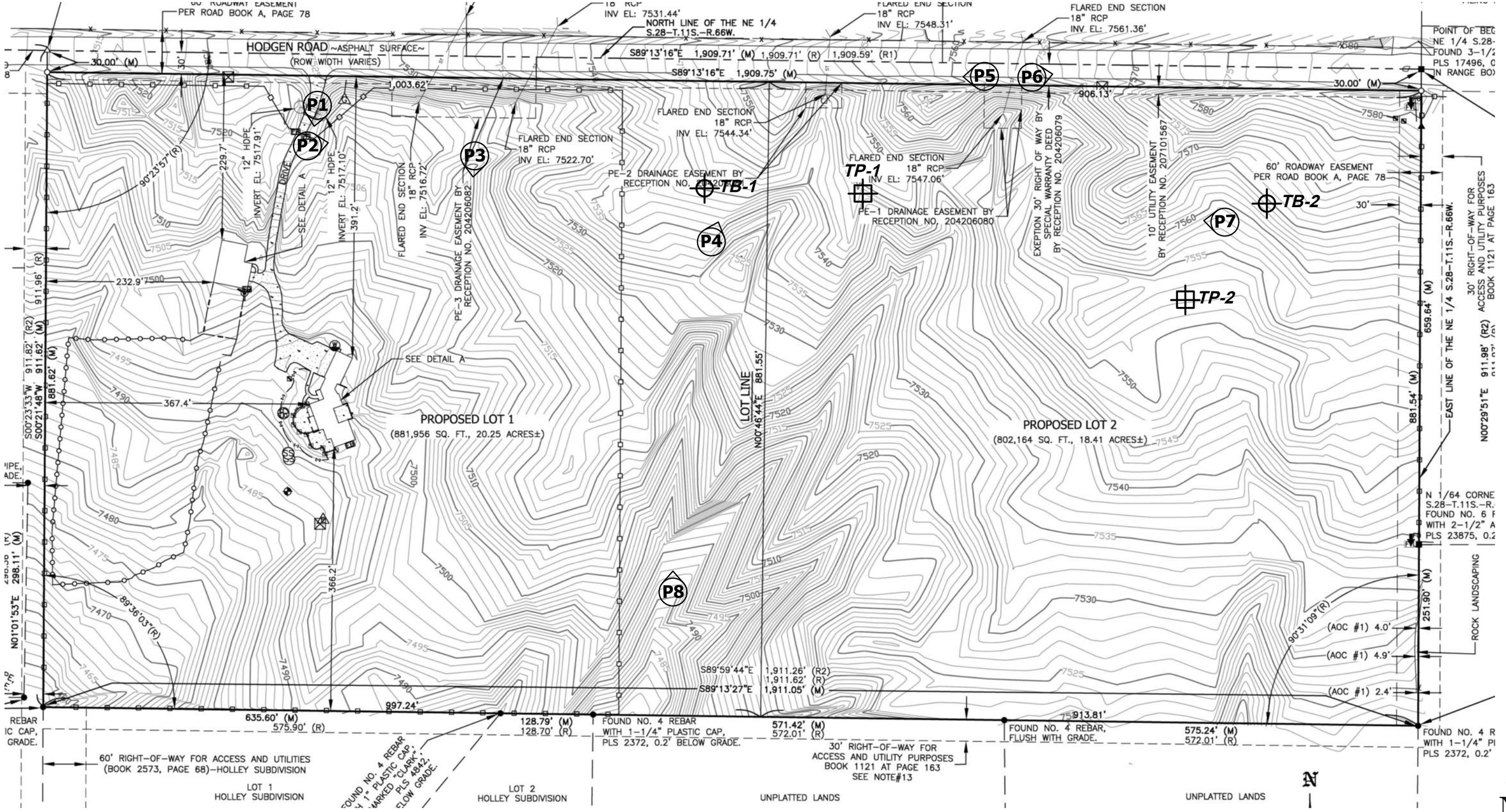
FIG. 4



- APPROXIMATE TEST BORING LOCATION AND NUMBER
- APPROXIMATE TEST PIT LOCATION AND NUMBER
- APPROXIMATE PHOTOGRAPH LOCATION AND NUMBER

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SITE AND EXPLORATION PLAN

2415 HODGEN ROAD
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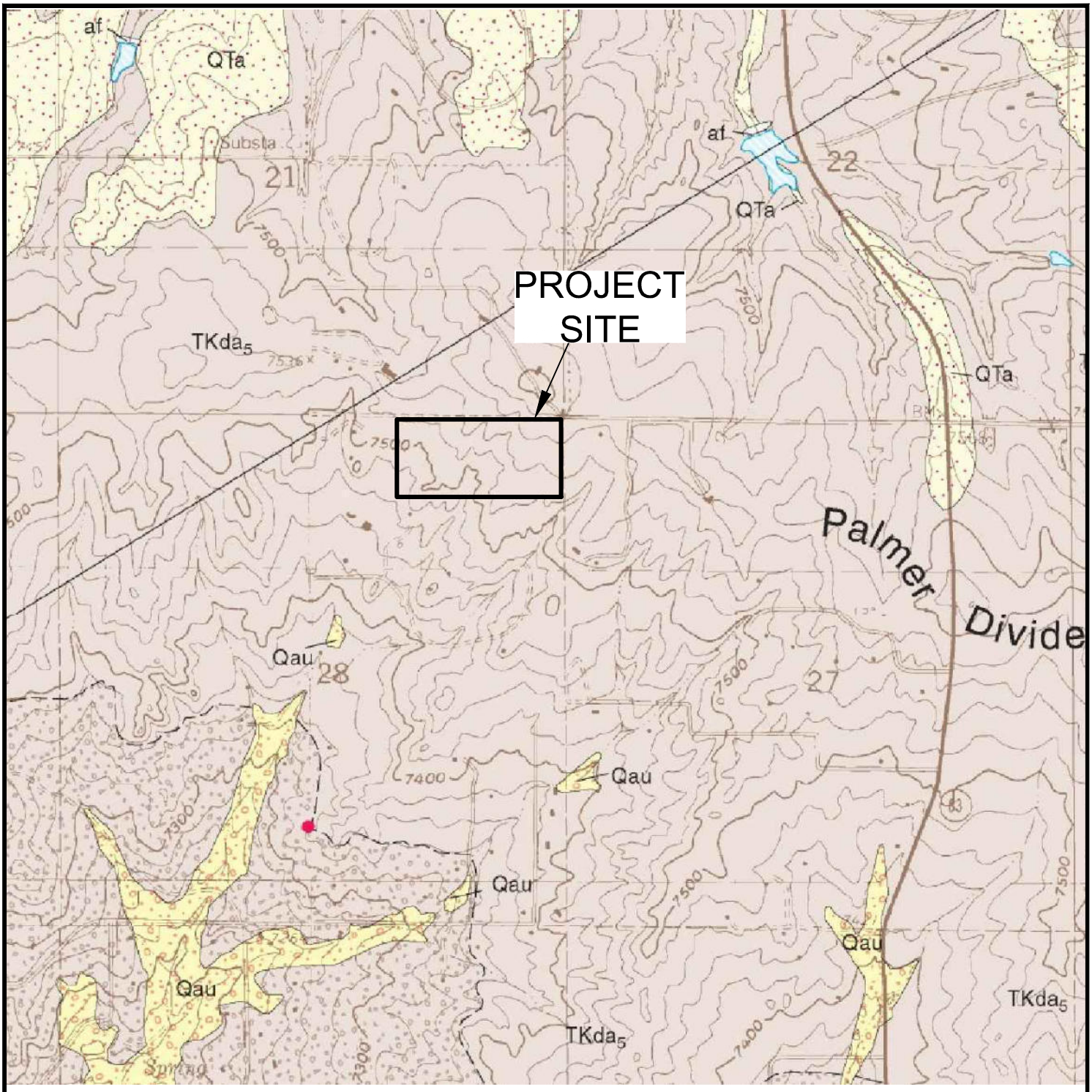
FIG. 3



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GEOLOGIC MAP OF THE MOUNMENT QUADRANGLE

2415 HODGEN RD

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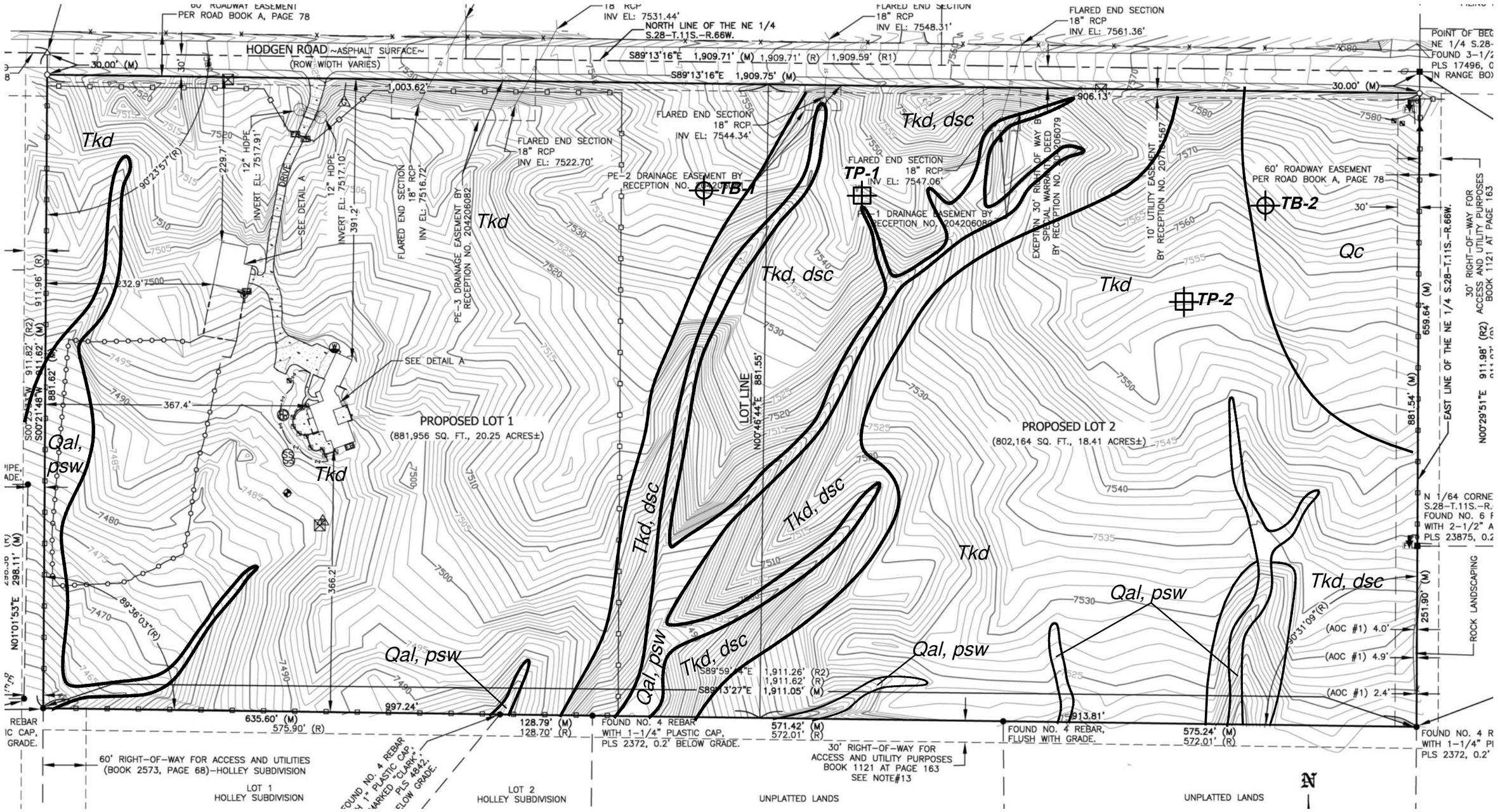
FIG. 5



Legend:

Qal -	Alluvial Deposits of Holocen Age:	recent water deposited sands and gravel along minor drainages
Qc -	Colluvium of Holocene and late Pleistocene Age:	colluvial and sheetwash deposits
Tkd -	Dawson Formation of Tertiary to Cretaceous Age:	arkosic sandstone with interbedded layers of claystone and siltstone
dsc -	downslope creep area	
psw -	potentially seasonal shallow groundwater area	

ENTECH ENGINEERING, INC.

GEOLOGY / ENGINEERING MAP

2415 HODGEN ROAD
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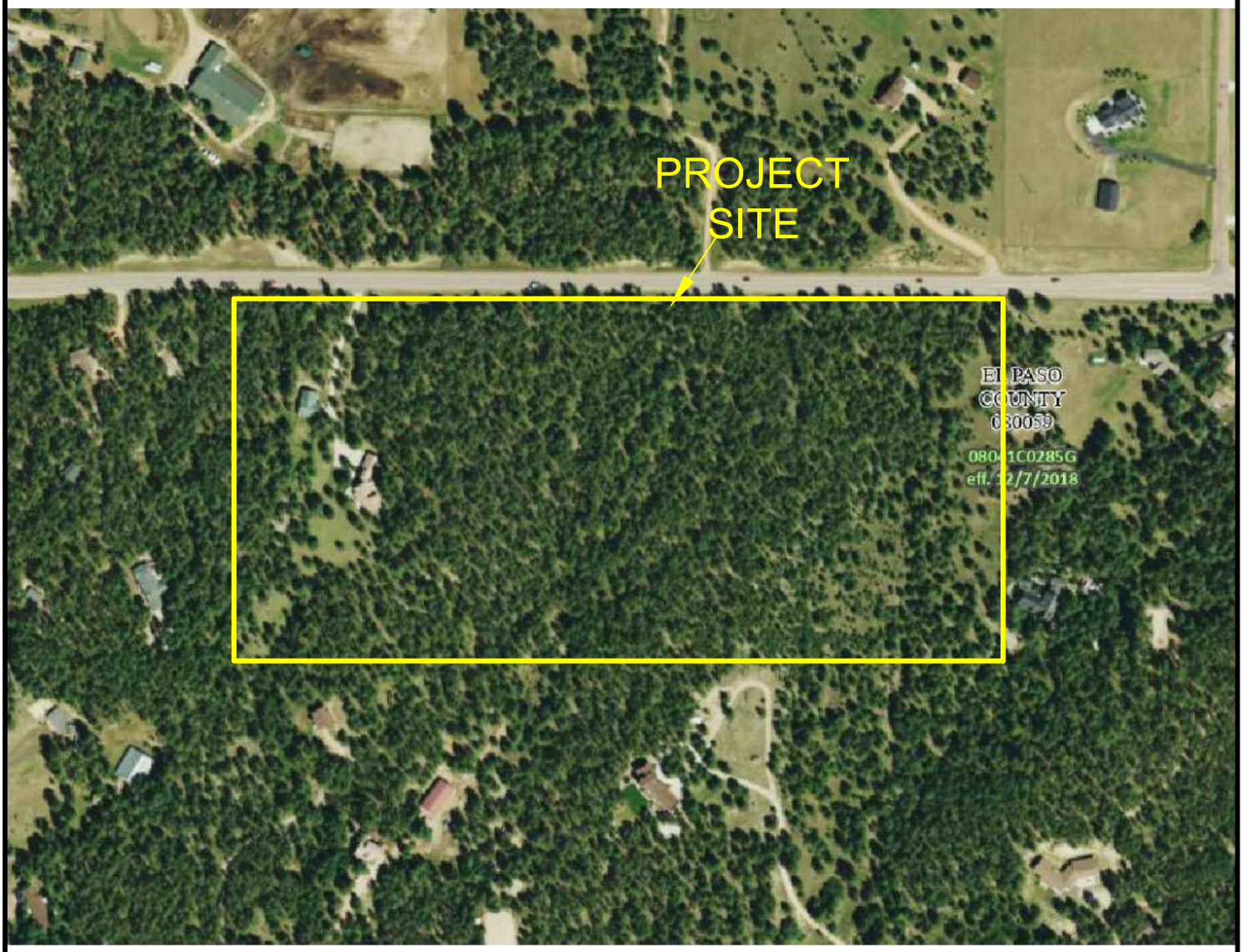
FIG. 6



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FEMA FLOODPLAIN MAP

2415 HODGEN ROAD
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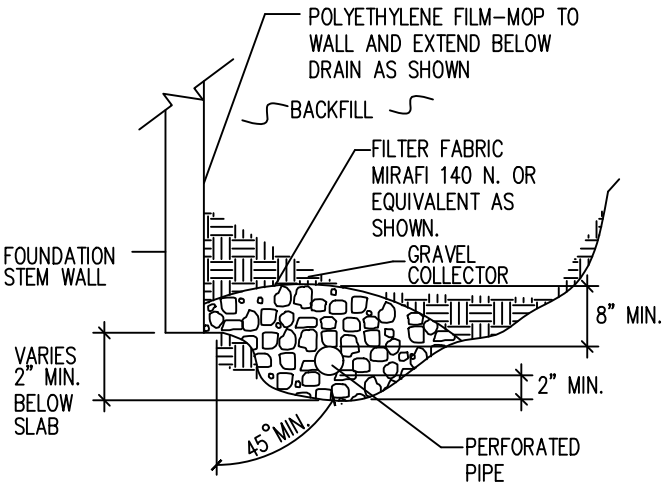
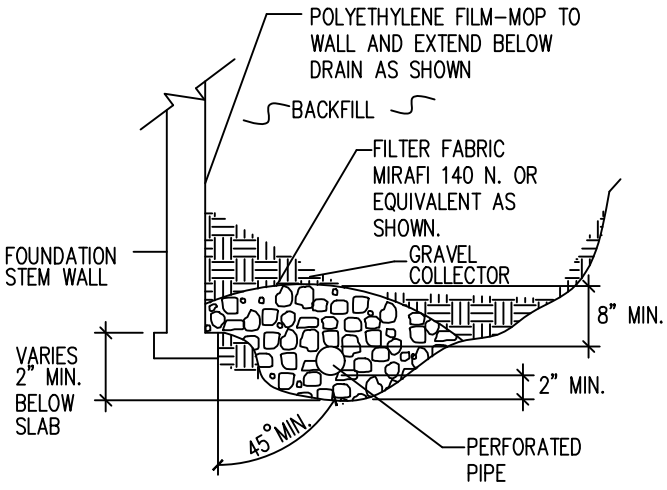
FIG. 7





NOTES:

–GRAVEL SIZE IS RELATED TO DIAMETER OF PIPE PERFORATIONS–85% GRAVEL GREATER THAN 2x PERFORATION DIAMETER.

–PIPE DIAMETER DEPENDS UPON EXPECTED SEEPAGE. 4–INCH DIAMETER IS MOST OFTEN USED.

–ALL PIPE SHALL BE PERFORATED PLASTIC. THE DISCHARGE PORTION OF THE PIPE SHOULD BE NON–PERFORATED PIPE.

–FLEXIBLE PIPE MAY BE USED UP TO 8 FEET IN DEPTH, IF SUCH PIPE IS DESIGNED TO WITHSTAND THE PRESSURES. RIGID PLASTIC PIPE WOULD OTHERWISE BE REQUIRED.

–MINIMUM GRADE FOR DRAIN PIPE TO BE 1% OR 3 INCHES OF FALL IN 25 FEET.

–DRAIN TO BE PROVIDED WITH A FREE GRAVITY OUTFALL, IF POSSIBLE. A SUMP AND PUMP MAY BE USED IF GRAVITY OUT FALL IS NOT AVAILABLE.

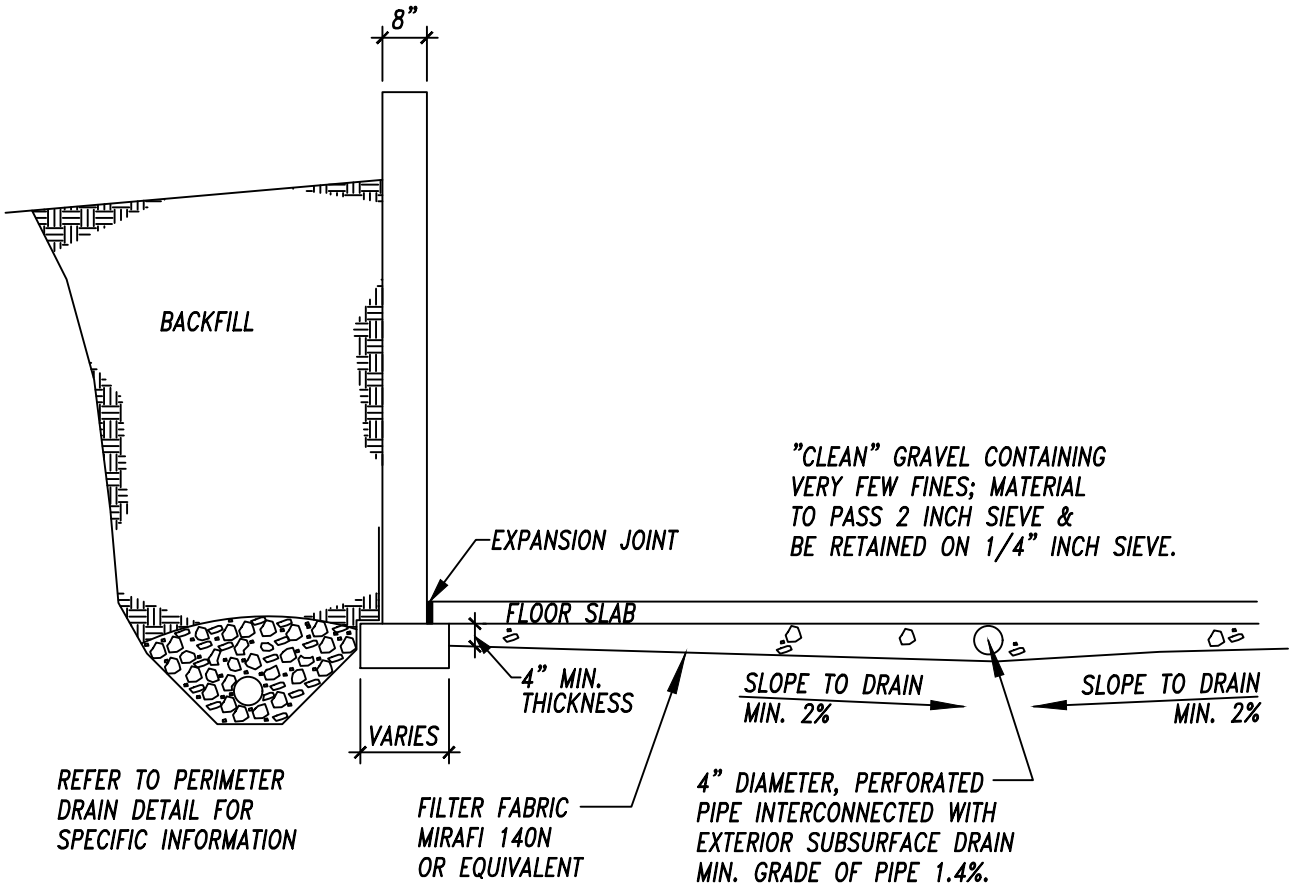
ENTECH ENGINEERING, INC.

PERIMETER DRAIN DETAIL

2415 HODGEN ROAD
VERTEX CONSULTING SERVICES

JOB NO. 231709

FIG. 8



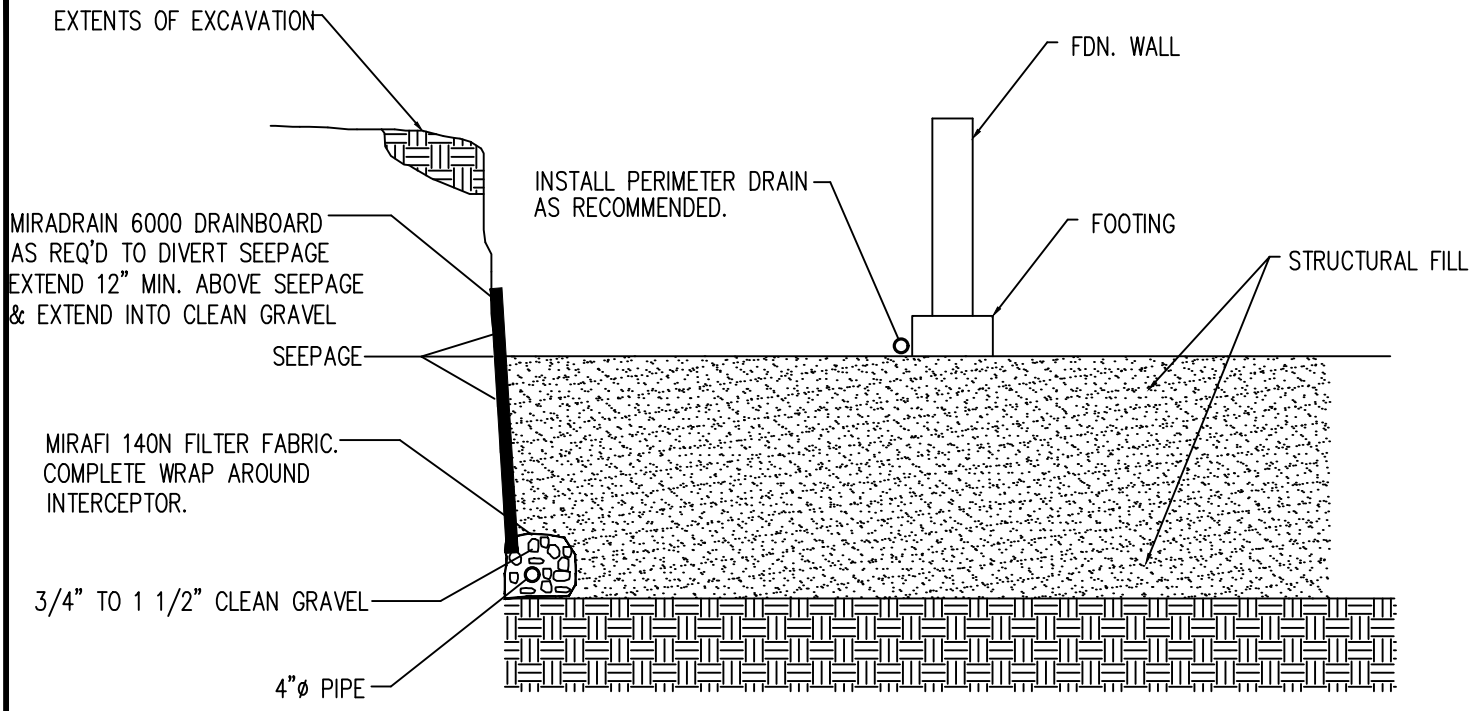
ENTECH ENGINEERING, INC.

TYP. UNDERSLAB DRAINAGE LAYER (CAPILLARY BREAK)

2415 HODGEN ROAD
VERTEX CONSULTING SERVICES

JOB NO.
231709

FIG. 9



NOTE:
EXTEND INTERCEPTOR DRAIN TO UNDERDRAIN OR TO SUMP.
BENCH DRAIN INTO NATIVE SOILS 12 INCHES MINIMUM.

INTERCEPTOR DRAIN DETAIL

N.T.S.

ENTECH ENGINEERING, INC.

INTERCEPTOR DRAIN DETAIL

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JOB NO.
231709

FIG. 10

APPENDIX A: Site Photographs

1

Looking south from the northwest side of the site (Lot 1).

October 24, 2023

2

Looking east from the northwest side of the site.

October 24, 2023

Job No. 231709

3

Looking south along the lot boundary of Lots 1 and 2.

October 24, 2023

4

Looking north from the central portion of the Lot 2.

October 24, 2023

Job No. 231709

5

Looking west northern side of the site.

October 24, 2023

6

Looking east from the northern side of the site.

October 24, 2023

Job No. 231709

7

Looking west from the central portion of Lot 4.

October 24, 2023

8

Looking north along minor drainage in the southern portion of the site.

October 24, 2023

Job No. 231709

APPENDIX B: Test Boring and Test Pit Logs

TEST BORING 1
DATE DRILLED 10/27/2023

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 10/27/23						
SANDSTONE, EXTREMELY WEAK, TAN, MODERATELY WEATHERED (SAND, WITH SILT, VERY DENSE, MOIST)				50/11"	3.3	2
	5			50/11"	6.8	2
	10			50/8"	7.1	2
SANDSTONE, VERY WEAK, TAN, FRESH (SAND, CLAYEY, VERY DENSE, MOIST)	15			50/7"	14.5	2
	20			50/5"	8.1	2

TEST BORING 2
DATE DRILLED 10/27/2023

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 10/27/23						
SAND, GRAVELLY, SILTY, TAN, MEDIUM DENSE to LOOSE, MOIST				15	3.3	1
	5			6	3.2	1
SANDSTONE, VERY WEAK, TAN, SLIGHTLY WEATHERED (SAND, WITH SILT, VERY DENSE, MOIST)	10			50/8"	6.3	2
	15			50/7"	7.1	2
	20			50/5"	7.2	2

ENTECH ENGINEERING, INC.

TEST BORING LOGS

2415 HODGEN ROAD
VERTEX CONSULTING

JOB NO. 231709

FIG. B-1

TEST PIT 1
DATE EXCAVATED 10/27/2023

REMARKS

Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	Soil Type
1					
2			gr	w	2 R1
3					
4					
5					
6					
7			ma		4 R1
8					
9					
10					

topsoil, loamy sand, brown, moist

loamy sand to gravelly loamy sand, fine to coarse grained, tan to light brown

sandstone (Dawson Formation), gravelly sandy clay, fine to coarse grained, grayish brown

TEST PIT 2
DATE DRILLED 10/27/2023

REMARKS

Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	Soil Type
1					
2			gr	m	3
3			ma		4 R1
4					
5					
6					
7					
8					
9					
10					

topsoil, loamy sand, brown, moist

sandy clay loam, fine to coarse grained, tan

sandstone (Dawson Formation), gravelly sandy clay, fine to coarse grained, grayish brown

Soil Structure Shape
granular - gr
platy - pl
blocky - bl
prismatic - pr
single grain - sg
massive - ma

Soil Structure Grade
weak - w
moderate - m
strong - s
loose - l

ENTECH ENGINEERING, INC.

TEST PIT LOGS

2415 HODGEN ROAD
VERTEX CONSULTING SERVICES

JOB NO. 231709

FIG. B-2

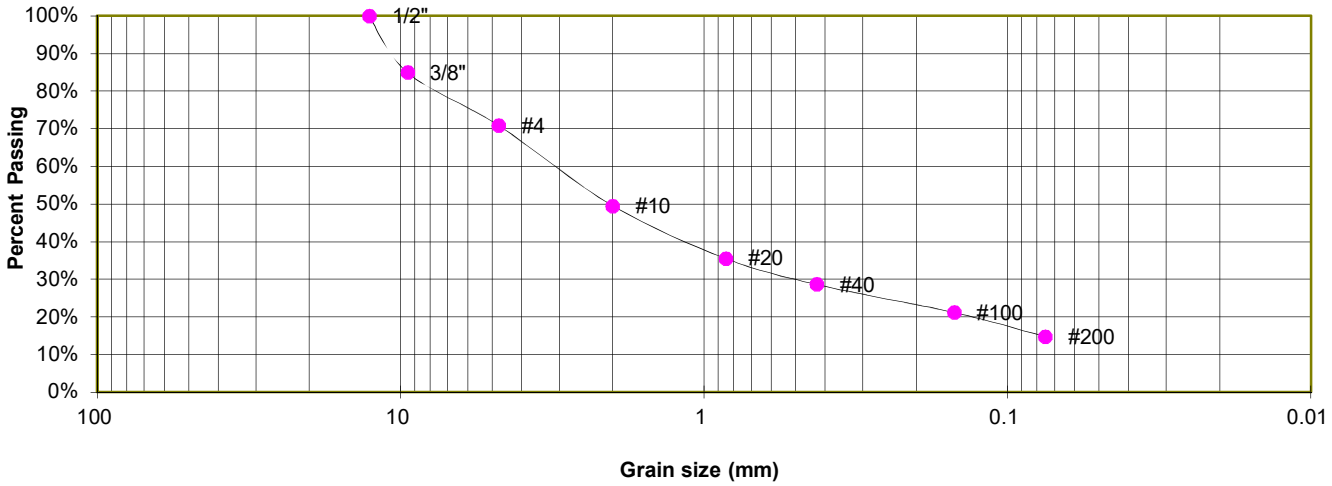
APPENDIX C: Laboratory Test Results

TABLE C-1
SUMMARY OF LABORATORY TEST RESULTS

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX	USCS	SOIL DESCRIPTION
1	2	2-3	14.8	NV	NP	NP	SM	SAND, SILTY
2	1	15	34.1				SC	SANDSTONE (SAND, CLAYEY)
2	2	10	11.0	NV	NP	NP	SW-SM	SANDSTONE (SAND, WITH SILT)

Project: 2415 Hodgen Road
Client: Vertex Consulting
Job No: 231709

TEST BORING	2	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	2-3	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	85.0%
4	70.8%
10	49.5%
20	35.6%
40	28.6%
100	21.2%
200	14.8%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

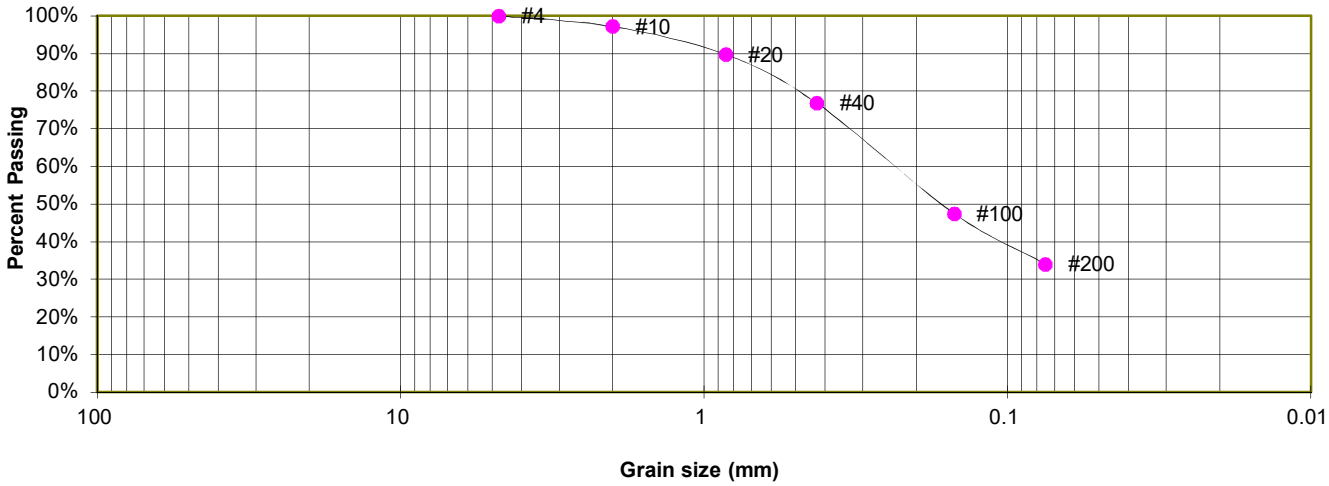
LABORATORY TEST RESULTS

2415 HODGEN ROAD
VERTEX CONSULTING

JOB NO. 231709

FIG. C-1

TEST BORING	1	SOIL DESCRIPTION	SANDSTONE (SAND, CLAYEY)
DEPTH (FT)	15	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	97.2%
20	89.8%
40	76.8%
100	47.5%
200	34.1%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SC

ENTECH ENGINEERING, INC.

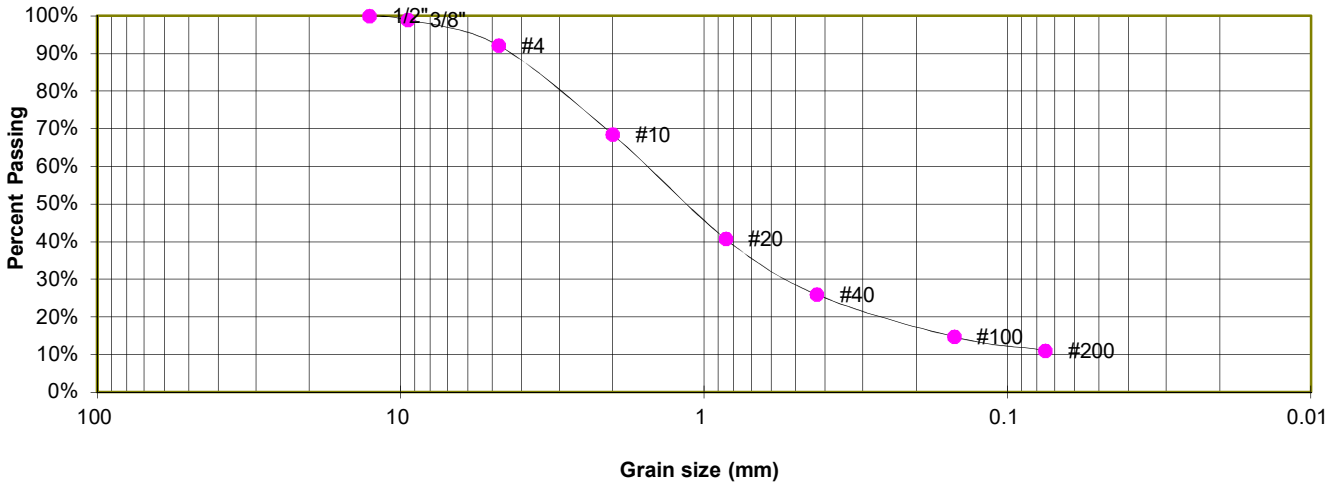
LABORATORY TEST RESULTS

2415 HODGEN ROAD
VERTEX CONSULTING

JOB NO. 231709

FIG. C-2

TEST BORING	2	SOIL DESCRIPTION	SANDSTONE (SAND, WITH SILT)
DEPTH (FT)	10	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	99.0%
4	92.1%
10	68.5%
20	40.8%
40	25.9%
100	14.7%
200	11.0%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM

ENTECH ENGINEERING, INC.

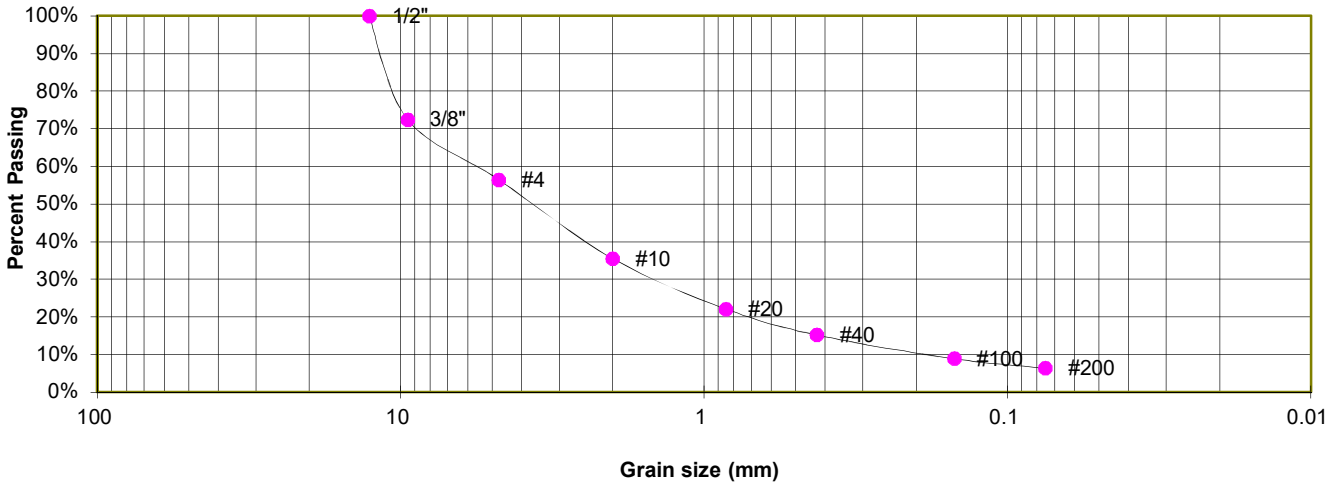
LABORATORY TEST RESULTS

2415 HODGEN ROAD
VERTEX CONSULTING

JOB NO. 231709

FIG. C-3

TEST BORING	TP-1	SOIL DESCRIPTION	SAND, WITH SILT
DEPTH (FT)	2		



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	72.5%
4	56.5%
10	35.5%
20	22.2%
40	15.2%
100	8.9%
200	6.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM

ENTECH ENGINEERING, INC.

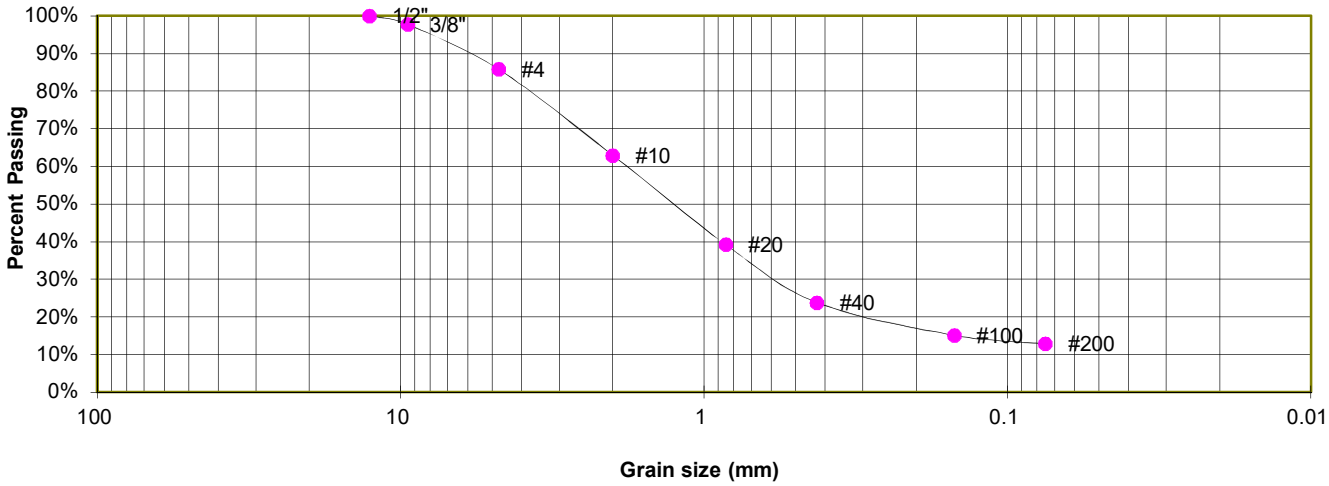
LABORATORY TEST RESULTS

2415 HODGEN ROAD
VERTEX CONSULTING

JOB NO. 231709

FIG. C-4

TEST BORING	TP-1	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	7		



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	97.7%
4	85.8%
10	62.9%
20	39.3%
40	23.8%
100	15.1%
200	12.9%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

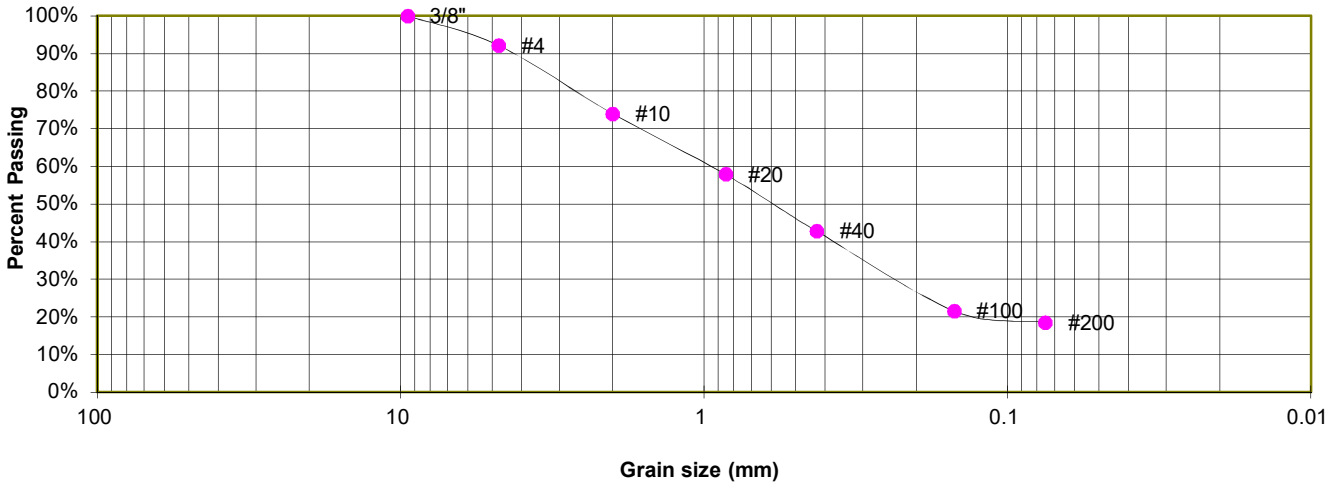
LABORATORY TEST RESULTS

2415 HODGEN ROAD
VERTEX CONSULTING

JOB NO. 231709

FIG. C-5

TEST BORING	TP-2	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	3		



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	92.1%
10	74.0%
20	57.9%
40	42.8%
100	21.6%
200	18.6%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

2415 HODGEN ROAD
VERTEX CONSULTING

JOB NO. 231709

FIG. C-6

APPENDIX D: Soil Survey Descriptions

El Paso County Area, Colorado

41—Kettle gravelly loamy sand, 8 to 40 percent slopes

Map Unit Setting

National map unit symbol: 368h
Elevation: 7,000 to 7,700 feet
Farmland classification: Not prime farmland

Map Unit Composition

Kettle and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kettle

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium derived from arkose

Typical profile

E - 0 to 16 inches: gravelly loamy sand
Bt - 16 to 40 inches: gravelly sandy loam
C - 40 to 60 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 8 to 40 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F048AY908CO - Mixed Conifer
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit:
Hydric soil rating: No

Pleasant

Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 21, Aug 24, 2023

El Paso County Area, Colorado

68—Peyton-Pring complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 369f
Elevation: 6,800 to 7,600 feet
Farmland classification: Not prime farmland

Map Unit Composition

Peyton and similar soils: 40 percent
Pring and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peyton

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Arkosic alluvium derived from sedimentary rock and/or arkosic residuum weathered from sedimentary rock

Typical profile

A - 0 to 12 inches: sandy loam
Bt - 12 to 25 inches: sandy clay loam
BC - 25 to 35 inches: sandy loam
C - 35 to 60 inches: sandy loam

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Description of Pring

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Arkosic alluvium derived from sedimentary rock

Typical profile

A - 0 to 14 inches: coarse sandy loam
C - 14 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R048AY222CO - Loamy Park
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit:
Hydric soil rating: No

Pleasant

Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 21, Aug 24, 2023

El Paso County Area, Colorado

93—Tomah-Crowfoot complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 36bb
Elevation: 7,300 to 7,600 feet
Farmland classification: Not prime farmland

Map Unit Composition

Tomah and similar soils: 50 percent
Crowfoot and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tomah

Setting

Landform: Alluvial fans, hills
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from arkose and/or residuum weathered from arkose

Typical profile

A - 0 to 10 inches: loamy sand
E - 10 to 22 inches: coarse sand
Bt - 22 to 48 inches: stratified coarse sand to sandy clay loam
C - 48 to 60 inches: coarse sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Description of Crowfoot

Setting

Landform: Alluvial fans, hills
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 12 inches: loamy sand
E - 12 to 23 inches: sand
Bt - 23 to 36 inches: sandy clay loam
C - 36 to 60 inches: coarse sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit:
Hydric soil rating: No

Pleasant

Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 21, Aug 24, 2023

APPENDIX E: El Paso County Health Department Septic Records

EL PASO COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT
INDIVIDUAL SEWAGE DISPOSAL SYSTEM INSPECTION FORM

Permit # ON0001783
Date 10/16/00

P

#6128100014

APPROVED: YES ✓ **NO** 10-28-11-66

ENVIRONMENTALIST KRUEGER

Address ~~2415 HODGEN RD~~ Owner H.H. NORMAN CONSTRUCTION

Legal Description ATTACHED

Residence ___, # of bedrooms 3 ; Commercial ___; System Installer R&R DRAINING

★**SEPTIC TANK:**

Commercial ✓; Noncommercial ___, L ___, W ___, WD ___

Construction Material CONCRETE, capacity 1500 gallons.

DISPOSAL FIELD:

Rock Systems:

Trench: depth ___, width ___, total length ___, sq. feet ___

Bed: depth ___, length ___, width ___, sq. feet ___

Rock type ___, depth ___, under PVC ___, over PVC ___

Seepage Pits: # of pits ___, total # of rings ___, working depth(s) ___

size of pit(s) L X W ___, lining material ___, total sq. feet ___

Rockless Systems:

Chamber: Type INFILTRATOR, number of chambers 33, bed ___, trench ✓

sq. ft./section 15.5, reduction allowed 40 %, sq. ft required 837

total sq. ft. installed 852, depth of installation 24"-36"

Engineer Design Y or (N), Designing Engineer ___,

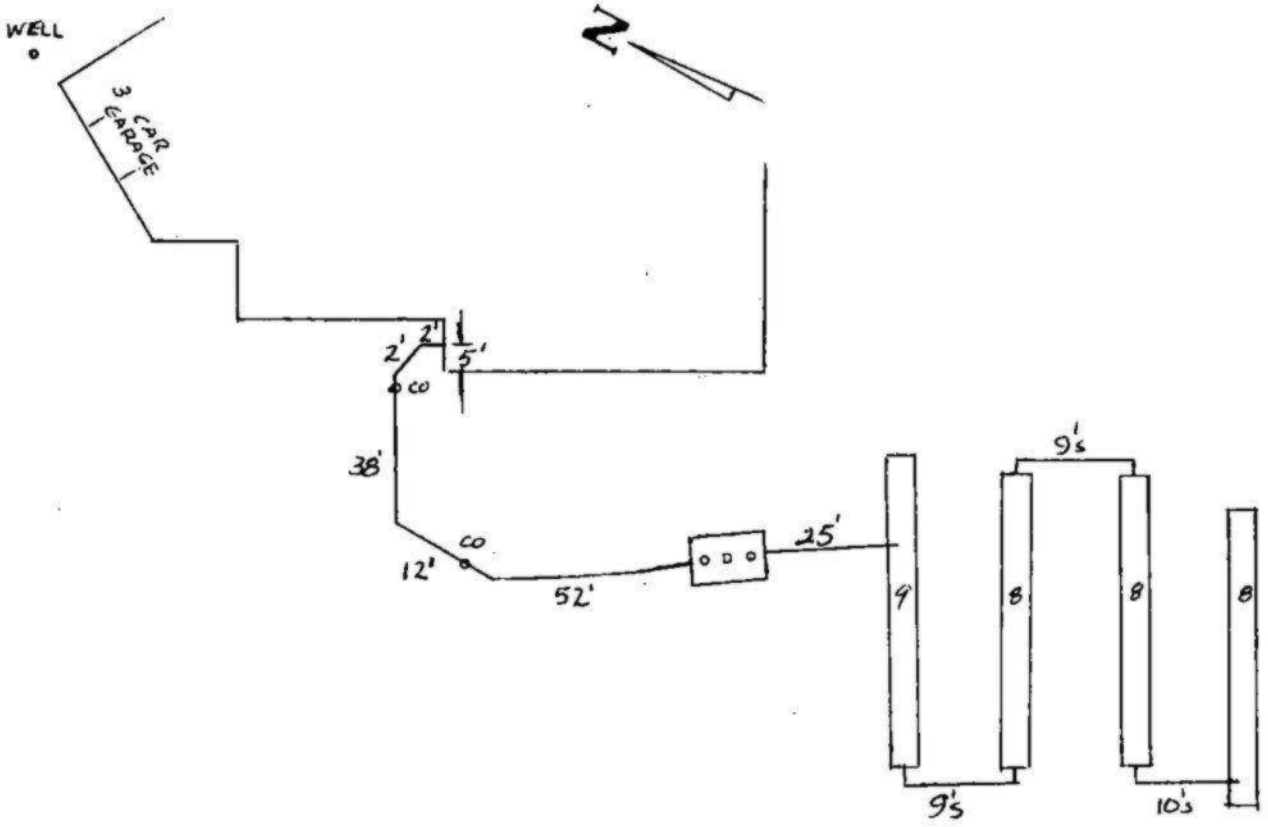
Approval letter provided? Y or N

Well 50 feet from tank (Y) or N 100 feet from leach field (Y) or N

Well installed at time of septic system inspection (Y) or N Public Water ___

*Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the disposal field.

NOTES: ★SEPTIC TANK, INSTALLED ON OCTOBER/2000, MEETS CODE FOR 4 BR HOUSE



EL PASO COUNTY

DEPARTMENT OF HEALTH AND ENVIRONMENT
301 S Union Blvd, Colorado Springs, Colorado 719-578-3126

INDIVIDUAL SEWAGE DISPOSAL SYSTEM PERMIT

WATER SOURCE: WELL
PERMIT NUMBER: ON0001783
OWNER NAME: HH NORMAN CONSTRUCTIO
DATE PERMITTED: 5/2/00
ADDRESS: 2415 HODGEN RD
CITY,STATE,ZIP: COLORADO SPRINGS 80908
PHONE NUMBER: 7195761670

INSTALLED BY: ~~MURRAY, MICHAEL (MURRAY CONSTRUC~~ R+R

This permit is issued in accordance with 25-10-107 Colorado Revised Statues. PERMIT EXPIRES upon completion-installation of sewage-disposal system or at the end of twelve (12) months from date of issue- whichever occurs first-(unless work is in progress). If both a building and an ISDS permit are issued for the same property and construction has not commenced prior to the expiration date of the building permit, the ISDS permit shall expire at the same time as the building permit. This permit is revokable if all stated requirements are not met.
Sewage disposal system to be installed by an El Paso County Licensed System Contractor or the property owner.

THIS PERMIT DOES NOT DENOTE APPROVAL OF ZONING AND ACREAGE REQUIREMENTS.

Tisha Downums

DIRECTOR, EL PASO COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT

PERMIT FEE(NON REFUNDABLE) :
New Permit-----$ 300.00
ISDS Repair -$ 50.00
Voided/Altered permit --$ 25.00

PERMIT EXPIRATION DATE :
Expires twelve months from date of issue

Krueger 578-3132
ENVIRONMENTALIST / PHONE NUMBER

NOTE: LEAVE THE ENTIRE SEWAGE DISPOSAL SYSTEM UNCOVERED FOR FINAL INSPECTION. 48 HOUR ADVANCE NOTICE REQUIRED.

MINIMUM SEPTIC TANK SIZE: 1,250 GALLONS *MINIMUM ABSORPTION AREA REQUIRED* 837 SQ FT

PLANNING DEPARTMENT ENUMERATION FLOOD PLAIN WASTEWATER

COMMENTS:

MEET ALL APPLICABLE I.S.D.S. REGULATIONS. STAY IN AREA OF PERC. TEST. LEACH FIELD TO BE NO LESS THAN 25 FEET FROM SMALL DRY GULCH.

The Health Office shall assume no responsibility in case of failure or inadequacy of a sewage-disposal system, beyond consulting in good faith with the property owner or representative. Free access to the property shall be authorized at reasonable time for the purpose of making such inspections as are necessary to determine compliance with requirements of this law.

CALLED 5-3-00

Inspector Gary Record I.D. 1783

EL PASO COUNTY ENVIRONMENTAL HEALTH SERVICES

301 South Union Boulevard • Colorado Springs, CO • 80910-3123 • (719) 578-3126

APPLICATION FOR A ☒ NEW ☐ REMODEL ☐ REPAIR OR ☐ ADDITION

TO AN INDIVIDUAL SEWAGE DISPOSAL SYSTEM ☐ P.E. DESIGN

Owner H. H. NORMAN CONSTRUCTION, INC. Daytime Phone 719 · 576 · 1670

Address of Property 2415 HODGEN ROAD City & Zip COLORADO SPRINGS

Legal Description ~~SEE PLOT PLAN ATTACHED~~ NE4 Sec 28-11-64

Tax Schedule # 61281 00 001 Lot Size 80 AC Septic Contractor MURRAY CONSTRUCTION

Inside City Limits ☒ No ☐ Yes-City _____ Water Supply ☒ Well or Spring ☐ Cistern ☐ Public

Type of Building ☒ Frame ☐ Modular ☐ Mobile ☐ Commercial ☐ Manufactured ☐ Other _____

Owner's MAILING Address 335 OAKHURST LN, ~~CSC 80906~~ City, State & Zip COLO SPGS, CO 80906

☐ MAIL PERMIT OR ☒ PICK UP PERMIT ☐ THERE IS AN ADDITIONAL RESIDENCE ON THIS PROPERTY

MAXIMUM POTENTIAL BEDROOMS 3

Percolation Test Attached (Y) N Garbage Disposal (Y) N Basement Y (N) Clothes Washer (Y) N

I have supplied a plot plan as described on the back of this form. I acknowledge the completeness of the application is conditional upon such further mandatory and additional tests and reports as may be required by the Department to be made and furnished by an applicant for purposes of evaluating the application, and issuance of the permit is subject to such terms and conditions as deemed necessary to ensure compliance with rules and regulations adopted pursuant to C.R.S. 25-10-107 et. seq. I hereby certify all represented to be true and correct to the best of my knowledge and belief, and are designed to be relied on by the El Paso County Department of Health and Environment in evaluating the same for purposes of issuing the permit applied for herein. I further understand any falsification or misrepresentation may result in the denial of the application or revocation of any permit granted based upon said application and in legal action for perjury as provided by law.

OWNER'S SIGNATURE [signature] Date 4/19/00

DEPARTMENT OF HEALTH USE ONLY

837#	1250	4/25/00
Minimum Absorption Area	Minimum Tank Capacity	Date of Site Inspection

REMARKS MEET ALL APPLICABLE ISDS REGS. STAY IN AREA OF PERC TEST. LEACH FIELD TO BE ≥ 25' FROM SMALL DRY GULCH

EHS INSPECTOR Krueger DATE 4/25/00 APPROVED DENIED

FEE NO FEE DATE TO PLANNING / WASTEWATER 4/26/00

6/99.DEB

We require a copy of your percolation **(PERC) TEST** with an original professional engineer's (PE) stamp and signature.

2) A **PLOT PLAN** must be drawn (not to scale) on a 8 ½ x 11 sheet of paper. The plot plan must include
   1) a north bearing
   2) property lines
   3) property dimensions
   4) all buildings (proposed or existing)
   5) proposed septic system site
   6) designated alternate septic system site
   7) driveway (proposed or existing and name of adjoining street)

3) Initial any of the following features that apply to your property and include them on your plot plan.

   _X_ Well(s) ____ Adjacent property well(s) ___ Subsoil drain

   ____ Cistern ____ Water line

4) Initial any of the following that are within 100 feet of your proposed septic system and include on your plot plan.

   _____Spring(s) _____Lake(s)

   _____Pond(s) _____Stream(s)

   _____Dry Gulch(es) _____Natural drainage course(s)

5) **PROPERTY ADDRESS OR LOT NUMBER MUST BE POSTED AND CLEARLY VISIBLE FROM ROAD. PERC HOLES MUST BE CLEARLY MARKED.**

6) GIVE COMPLETE DIRECTIONS TO THE PROPERTY FROM A MAIN HIGHWAY

WEST ON HODGEN ROAD FROM HWY 83 FOR APPROX 3/4 MILE WHERE HODGEN DEAD ENDS. FOLLOW NEWLY CUT TRAIL (DRIVEWAY) FROM END OF HODGEN TO HOUSE - SEE SITE PLAN.