ENTECH
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September 9, 2022
Revised May 22, 2023
Revised April 22, 2024

Taher Nabulsi
14384 Whispering Ridge Road
San Diego, CA 92131

Re: Soils and Geology Study
10650 Black Forest Road
Parcel No. 52190-00-101
El Paso County, Colorado
Entech Job No. 221371

Dear Mr. Nabulsi:

The project consists of subdividing 24.79-acres; four rural residential lots are proposed as part of the subdivision. The site is located northwest of the intersection of Black Forest Road and Old Ranch Road, in El Paso County, Colorado.

GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION

The site is located in a portion of the SE¼ of Section 19 Township 12 South, Range 65 West of the 6th Principal Meridian in El Paso County, Colorado. The site is located immediately north of Colorado Springs city limits, at the northwest of the intersection of Black Forest Road and Old Ranch 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 in the northern portion of the site. Several minor drainage swales are located across the property with a low-lying potentially seasonally shallow groundwater area in the southwest portion of the site and a pond in the southeastern portion of the site. Water was not observed in the pond or minor drainage swales at the time of this investigation. The site boundaries are indicated on the USGS Map, Figure 2. Previous land uses have included undeveloped and rural residential. The site contains field grasses, weeds, conifers, and shrubs. There are several existing structures located on the two northern lots. There is an existing septic field, two houses and several auxiliary structures located on Lot Nos. 3 and 4. The structures are currently vacant. There are several water spigots throughout the site. Site photographs taken June 23, 2022, are included in appendix A. Site mapping and test pit excavations were completed on June 23, 2022. Test Borings were drilled on June 22, 2022.

Total acreage involved in the proposed subdivision is 24.79-acres. Four rural residential lots are proposed. The site plan with proposed the proposed lot layout is shown in Figure 3. The proposed lot sizes range from 4.76-acres to 9.29-acres and will be access by a private drive. There are several structures currently occupying the northern two lots. These structures include an existing residence, a barn, corrals, a modular home and other accessory building structures. The proposed lots will be serviced by individual wells and on-site wastewater treatment systems.

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 artificial fill, downslope creep, expansive soils, potentially seasonally shallow and seasonally shallow groundwater areas, and shallow bedrock. Based on the proposed development plan, it appears that these areas will have 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, and soils and bedrock information obtained from the test borings and test pits completed by Entech. 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 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. on June 23, 2022.

Two test borings were drilled and three test pits were excavated on the site to determine general suitability of the soil characteristics for residential construction. The locations of the test borings/pits are indicated on the Site Plan/Test Boring Location Map, Figure 3. The Test Boring and Test Pit 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. 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 gravelly loamy sand to sandy loam. The soils are described as follows:

Type	Description
41	Kettle gravelly, loamy sand, 8 – 40% Slopes
71	Pring coarse sandy loam, 3 – 8% Slopes

The soils have been described to have 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 consisted of slightly silty to silty sand overlying sandy claystone. Bedrock was encountered at depths of 7 feet in the test borings. The upper sands were encountered at medium dense states and dry to moist conditions. The claystone was encountered at hard consistencies and moist to wet conditions. The samples of sand tested had 9 to 20 percent of the soil size particles passing the No. 200 sieve. The samples of claystone tested had 64 to 71 percent of the soil size particles passing the No. 200 sieve. The silty sand typically has low expansion potential. A Swell/Consolidation Test indicated a volume change of 0.1% which is in the low consolidation range for a sample of claystone from Test Boring No. 1 at a depth of 10 feet. Moderately to highly expansive claystone is known to be common in this area.

Groundwater

Groundwater was not encountered in the test borings which were drilled to depths of 20 feet. Evidence of seasonally occurring ground water were encountered in Test Pit No. 2 at a depth of 5 feet. Groundwater is not anticipated to affect shallow foundations on the majority of the site. An area of seasonal shallow groundwater has been mapped on the site and is discussed later in this report. 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 10.5 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 a large structural feature known as the Denver Basin. Bedrock in the area is typically gently dipping in a northerly direction (Reference 3). The bedrock underlying the site consists of the Dawson Formation of

Tertiary to Cretaceous Age. The Dawson Formation typically consists of coarse-grained arkosic sandstone with interbedded layers of claystone or siltstone.

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

Qaf **Artificial Fill of Quaternary Age:** These are man-made fill deposits associated with earthen dam on-site.

Qc/Tkd **Colluvium of Quaternary Age overlying Dawson Formation of Tertiary to Cretaceous Age:** The materials consist of colluvial or residual soils overlying the bedrock materials on-site. The colluvial soils were deposited by the action of sheetwash and gravity. The residual soils were derived from the in-situ weathering of the bedrock on site. These materials typically consist of silty to clayey sand with potential areas of sandy clays. The bedrock consists of the Dawson Formation. The Dawson Formation typically consists of coarse-grained, arkosic sandstone with interbedded lenses of fine-grained sandstone, siltstone and claystone.

The soils listed above were mapped from site-specific mapping, the *Geologic Map of the Falcon NW 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 Pueblo 1° x 2° Quadrangle,* distributed by the US Geological Survey in 1978 (Reference 6). The test borings were used in evaluating the site and are 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 developers should be cognizant during the planning, design and construction stages where new construction is proposed. The engineering geologic hazards identified on this site include artificial fill, downslope creep, expansive soils, potentially seasonally shallow and seasonally shallow groundwater areas, and shallow bedrock, as indicated on the Engineering Geology Map, Figure 6. Potential hazards including expansive soils, downslope creep, and minor drainage swales, also exist on the site. These hazards and recommended mitigation techniques are discussed as follows:

Artificial Fill – Constraint

These are man-made fill deposits associated with erosion berms and earthen dams on site.
Mitigation: The earthen dams should be avoided by development unless significant grading is done in the drainage areas. Mitigation of drainage areas has been discussed under seasonal shallow groundwater areas and areas of ponded water, should construction be considered in these areas. Small erosion berms can be removed or penetrated by foundations. Should any uncontrolled fill be encountered beneath foundations, removal and recompaction at 95% of its maximum Modified Proctor Dry Density, ASTM D-1557 will be required.

Expansive Soils – Constraint

Expansive claystone was encountered in the test borings and Test Pit No. 2. Testing indicated a low expansion potential, however, highly expansive claystone and siltstone is commonly interbedded sandstone of the Dawson Formation in the area. Expansive clays, if encountered beneath foundations, can cause differential movement in the structure foundation.
Mitigation: Where expansive soils are 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.

Downslope Creep – Constraint

The areas identified with this hazard include the hillsides on the northern portion of the property. In these areas we would anticipate lateral and vertical movement of the near surface soils in the downslope direction. These areas may be acceptable as building sites with the following constraints on construction.
Mitigation: Building is possible in these areas if the following engineering and construction mitigation steps are taken: This type of movement will increase lateral pressures against foundation walls on the uphill side of structures. The design of foundations in these areas should account for this additional pressure. A lateral pressure detail is shown in Figure 9. Where possible in areas of downslope creep, structures should be designed to be as compact and rigid as possible. This will help them better tolerate the vertical and lateral movements to which the foundation system may be subjected. Long, rambling, irregular structures should be avoided in these areas as they are associated with a much greater potential for damaging differential movement. Tie walls and buttresses are often used to stiffen the foundation system.

Drainage Areas – Constraint

Several minor drainage swales are located across the property with a low-lying potentially seasonally shallow groundwater area in the southwest portion of the site and a pond in the southeastern portion of the site. Water was not observed in the pond or minor drainage swales at the time of this investigation. These areas are indicated in the Geology/Engineering Geology Map (Figure 6) and are discussed below. Due to the size of the proposed lots these areas can be avoided or redirected around proposed structures or proposed soil treatment areas. The site does not lie within any floodplain zones according to the FEMA Map No. 08041CO527G dated December 7, 2018 (Figure 7, Reference 7). Exact locations of floodplain and specific drainage studies are beyond the scope of this report.

Potentially Seasonal Shallow Groundwater Area – Constraint

These areas are associated with the minor drainage swales across the site and the low lying area in the southwestern corner of the site. In these areas, we would anticipate the potential for periodically high subsurface moisture conditions, frost heave potential and highly organic soils. These areas lie within the minor drainage swales located across the property and can likely be avoided by the proposed development. Construction in any portions of these areas, if required, or immediately adjacent to these areas should follow these precautions.

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 8. Structures should not block drainages and any grading in these areas should be done to direct surface flows around proposed structures 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.**

Seasonally Shallow Groundwater Area – Constraint

These are areas where water is seasonally ponded behind the earthen dam in the southeastern portion of the site following periods of higher precipitation. This area can be avoided by development. There was no water in the pond at the time of our site observations.
Mitigation: These areas lie within the pond in t can be avoided by development. The same mitigation recommendations for potentially high groundwater areas as discussed previously should be followed in these areas of seasonally high groundwater.

Shallow Bedrock – Constraint

Bedrock was encountered in the test borings at 7 feet. Shallow bedrock will likely be encountered on this site. Where claystone or sandstone are encountered, excavation/grading may be difficult requiring track-mounted excavators with ripper attachments.

Radioactivity – Hazard

Radon levels for the Colorado Geologic Survey in the Open-File have been reported the area, Report No. 91-4 (Reference 11). Radon levels ranging from 0 to 20 pci/l have been measured in the area. Only two readings have been taken in the project area. One reading was between 4 and 10 pci/l and the other was less than 4 pci/l. The minimal information from this report is not sufficient to determine if radon levels are higher for this site. An occurrence of radioactive minerals has been identified 3.75 miles southwest of the site (Reference 12). This occurrence is associated with a limonite deposit in the Dawson Formation. The radioactivity hazard was researched by CTL/Thompson, Inc. for Wolf Ranch, west of the site (Reference 13). It was determined that the area lies within a zone that may have small deposits of low intensity radioactivity. No known occurrences exist on the site, however, radon gas originating in the bedrock underlying the site could migrate up into the upper soil profile.

Mitigation: The potential exists for radon gas to build up in areas of the site. Build-ups of radon gas can be mitigated by providing increased ventilation of basements and crawlspaces and sealing of joints. Specific requirements for mitigation should be based on-site specific testing after the site is constructed.

RELEVANCE OF GEOLOGIC CONDITIONS TO LAND USE PLANNING

The proposed development will be rural-residential utilizing individual on-site wastewater treatment systems and water wells. Four rural residential lots are proposed. The lot sizes range from 4.76-acres to 9.29-acres and will be serviced by individual wells and on-site wastewater treatment systems. The lots will be accessed by a proposed private drive located in the southern portion of the site. The existing geologic and engineering geologic conditions will impose minor constraints on development and construction. The geologic constraints on the site include potentially seasonal shallow groundwater, down slope creep, and expansive soils 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 states, and the claystone was encountered at hard consistencies. Claystone bedrock was encountered at 7 feet in the test borings. Difficult excavation of the hard claystone should be expected.

The claystone encountered in the test borings exhibited low expansion potentials, however, highly expansive claystone and siltstone is commonly interbedded sandstone of the Dawson Formation in the area. Expansive clays, if encountered beneath foundations, can cause differential movement in the structure foundation. Mitigation of expansive soils if encountered at the foundation level 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. 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.

Several minor drainage swales are located across the property with a low-lying potentially seasonally shallow groundwater area in the southwest portion of the site and a pond in the southeastern portion of the site. Water was not observed in the pond or minor drainage swales at the time of this investigation. However, the potential for seasonal shallow groundwater or ponded water exists in these areas during periods of high runoff. According to the development plan and lot sizes, these areas can be avoided by the structures. Structures should not block drainages and any grading in these areas should be done to direct surface flows around proposed structures to avoid areas of ponded water.

In summary, the granular soils will likely provide suitable support for shallow foundations and expansive claystone will require mitigation. Many of 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 should be expected to be encountered in deeper cuts and along or adjacent to drainage areas. 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 8), 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 9), the site is not mapped with any resources. According to the *Evaluation of Mineral and Mineral Fuel Potential* (Reference 10), 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 10), 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 10).

The site has been mapped as “Fair” for oil and gas resources (Reference 10). 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 Taher Nabulsi, 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:

Digitally signed by Joseph C. Goode Jr.
Date: 04/23/24

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

LLL/jr

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TABLES

TABLE 1

SUMMARY OF LABORATORY TEST RESULTS

CLIENT TAHER NABULSI
PROJECT 10650 BLACK FOREST RD.
JOB NO. 221371

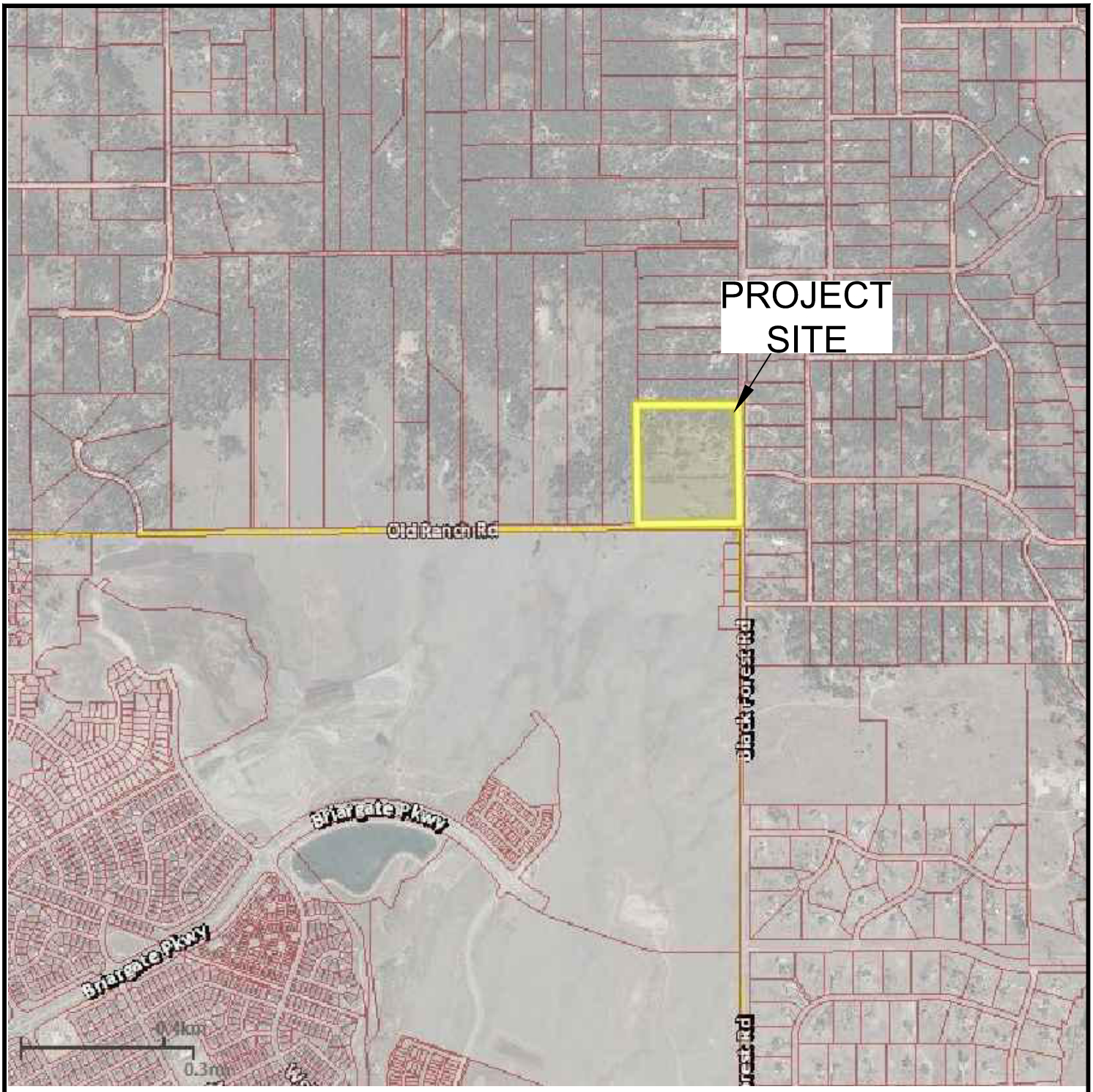
SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	SULFATE (WT %)	FHA SWELL (PSF)	SWELL/ CONSOL (%)	UNIFIED CLASSIFICATION	SOIL DESCRIPTION
1	1	2-3			8.9	NV	NP	0.00			SM-SW	SAND, SLIGHTLY SILTY
1	2	5			19.7						SM	SAND, SILTY
2	1	10	8.8	121.4						-0.1	CL	CLAYSTONE, SANDY
2	2	15			70.5	37	14	<0.01			CL	CLAYSTONE, SANDY

Table 2: Summary Groundwater and Bedrock Results

Test Location No.	Depth to Bedrock (ft.)	Depth to Groundwater Evidence (ft.)	USDA Soil Type	LTAR Value
TP-1	>8	>8	R-1*	0.15*
TP-2	>8	5*	2	0.6
TP-3	>8	>8	3	0.35
TB-1	7	>20	N/A	N/A
TB-2	7	>20	N/A	N/A

*- Conditions that will require an engineered OWTS

FIGURES



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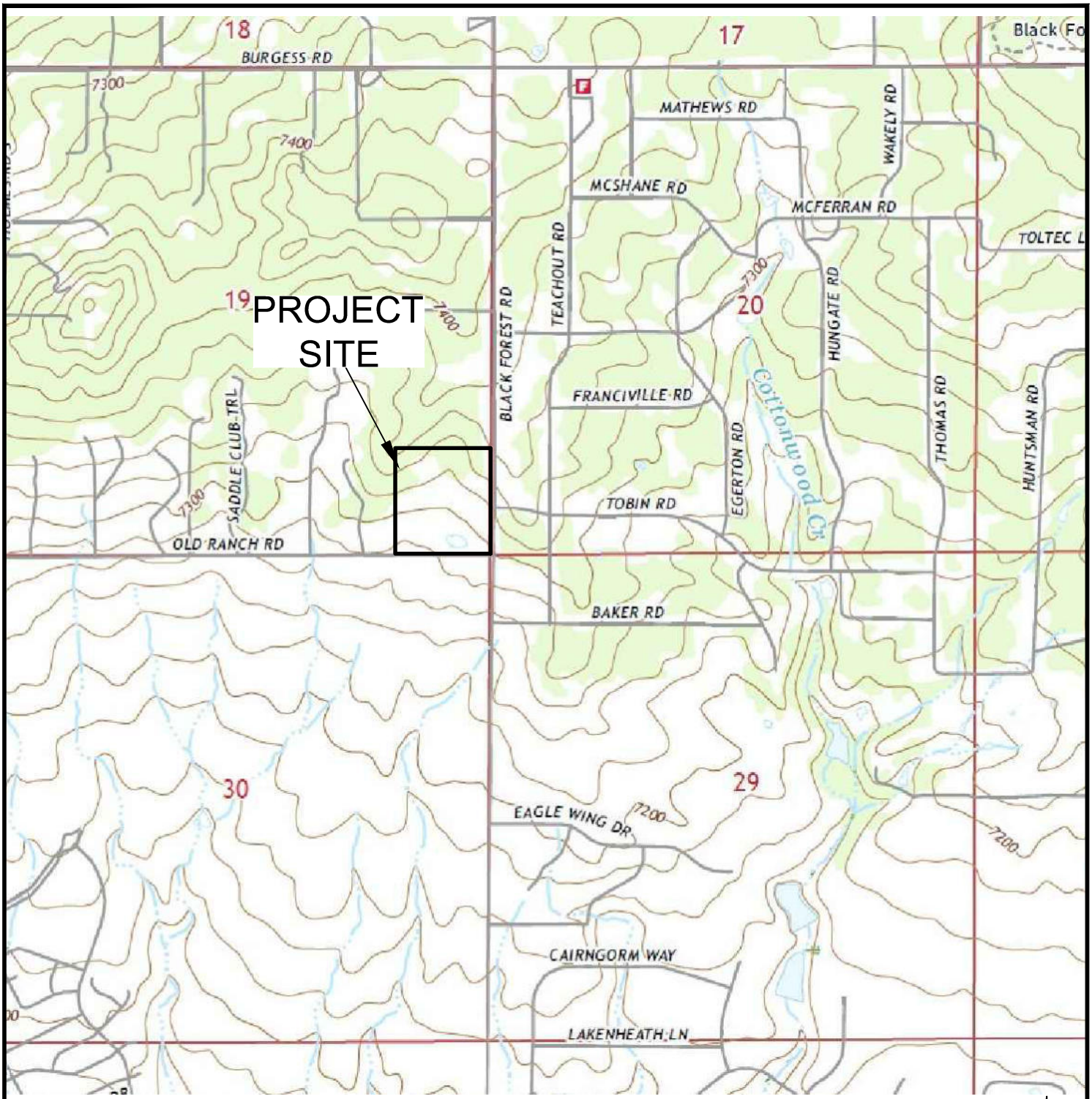
ENTECH ENGINEERING, INC.

VICINITY MAP

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

FIG. 1



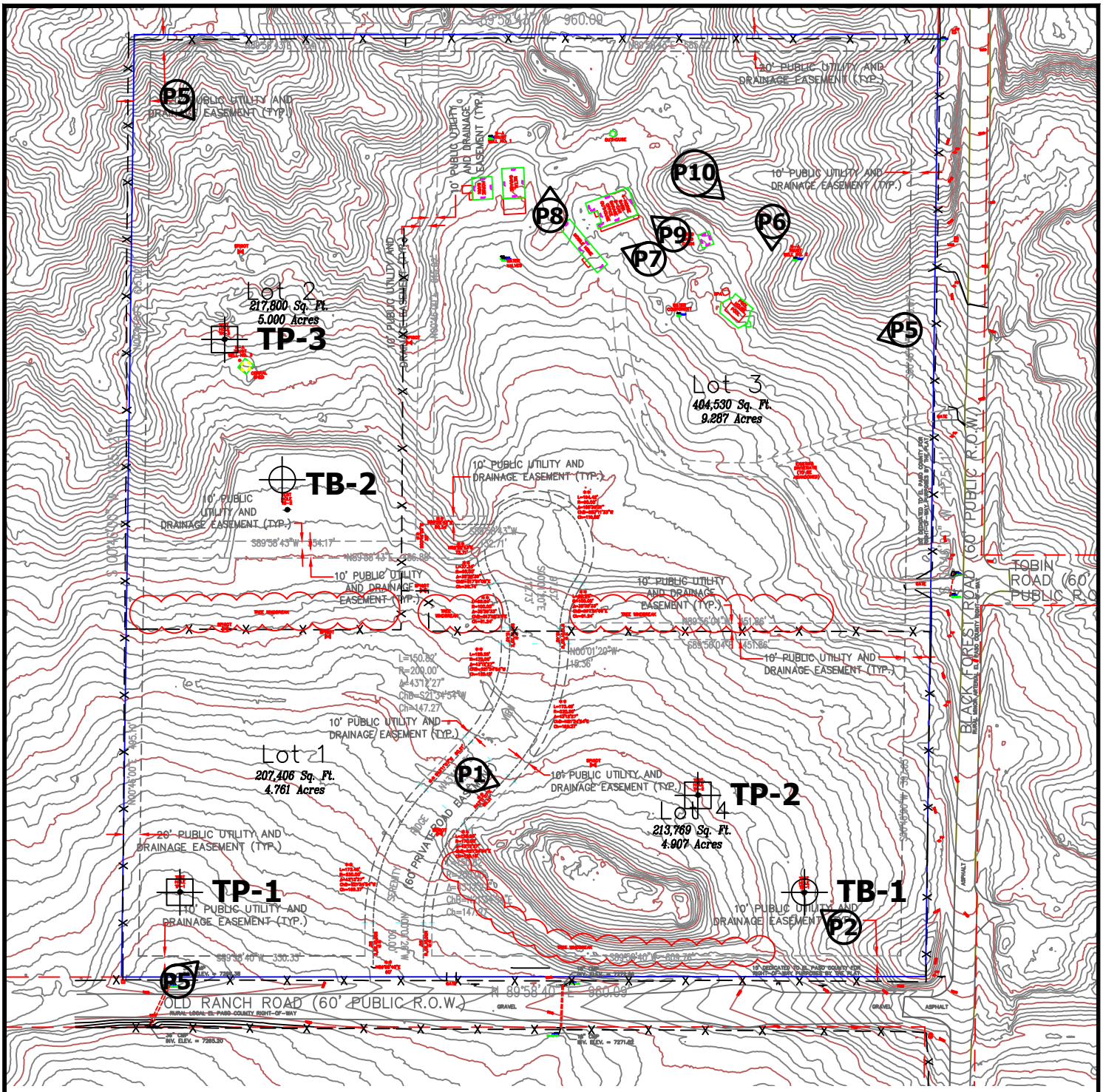
ENTECH ENGINEERING, INC.

USGS TOPOGRAPHY MAP

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

FIG. 2



TB- APPROXIMATE TEST BORING LOCATION AND NUMBER

TP- APPROXIMATE TEST PIT LOCATION AND NUMBER

P2 - APPROXIMATE PHOTOGRAPH LOCATION AND NUMBER

N

ENTECH ENGINEERING, INC.

SITE AND EXPLORATION PLAN

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

FIG. 3

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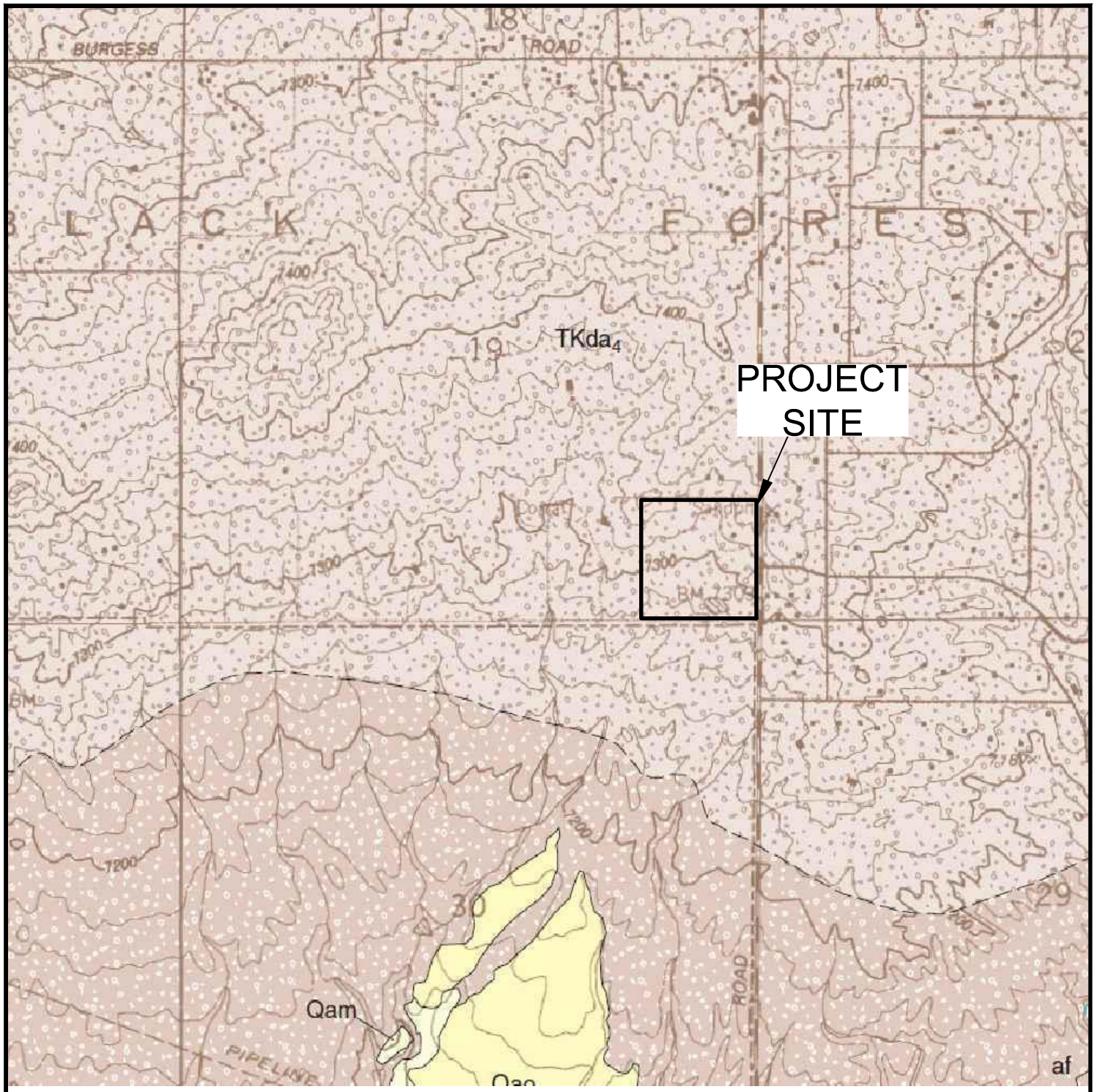
SOIL SURVEY MAP

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

FIG. 4



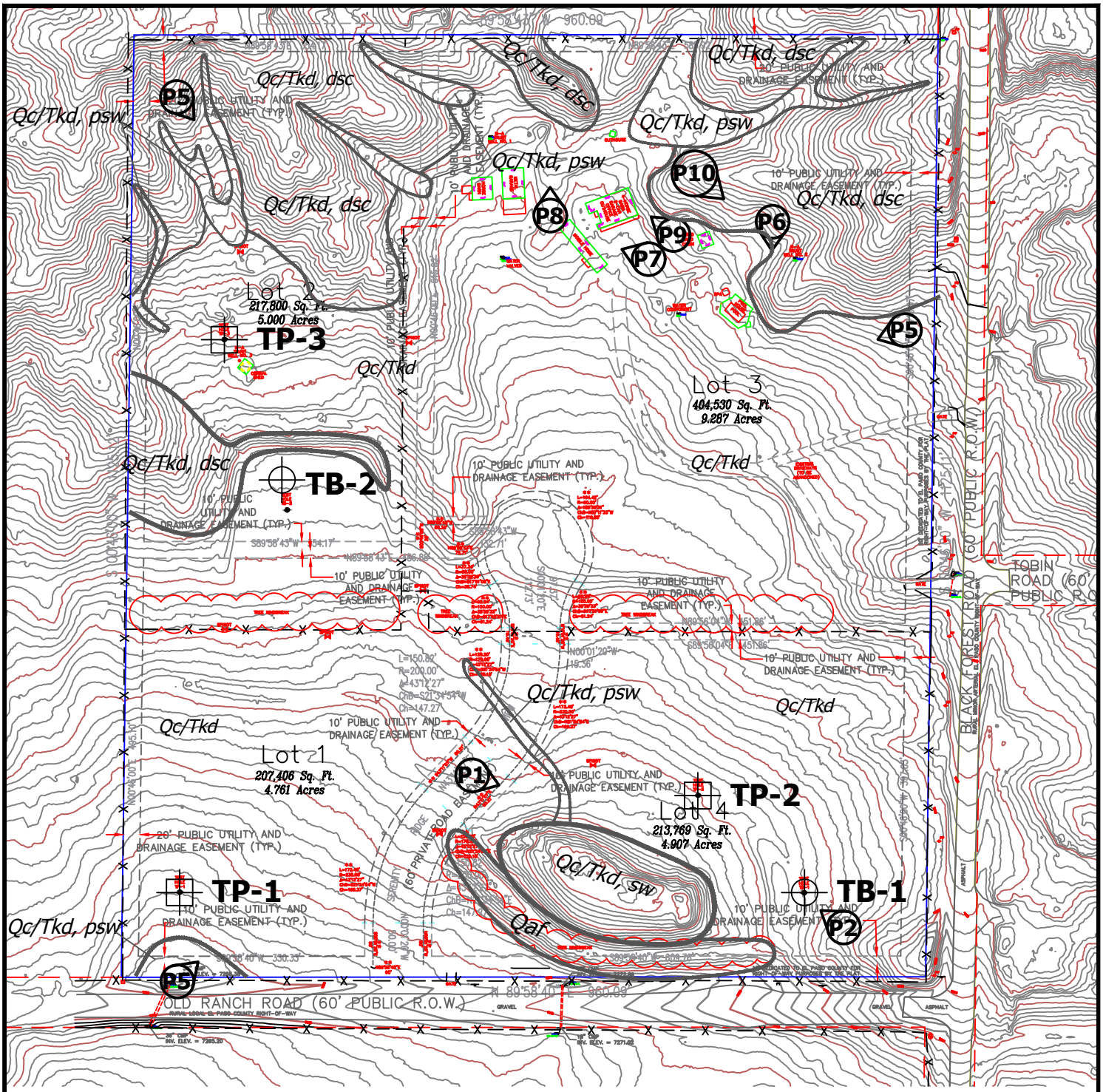
ENTECH ENGINEERING, INC.

GEOLOGIC MAP OF THE FALCON NORTHWEST QUADRANGLE

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

FIG. 5



Legend:

Qaf - Artificially Man Made Fill of of Quaternary Age

Qc/TKd - Colluvium of Quaternary Age overlying Dawson Formation of Tertiary to Cretaceous Age: colluvial and residual soils overlying arkosic sandstone with interbedded fine-grained sandstone, siltstone and claystone

dsc - down slope creep
sw - seasonal shallow groundwater area
psw - potentially seasonal wet

N

ENTECH ENGINEERING, INC.

GEOLOGY/ENGINEERING GEOLOGY MAP

305 PINE OAKS ROAD
EL PASO COUNTY, CO
T-BONE CONSTRUCTION

JOB NO.
231440

FIG. 6

N

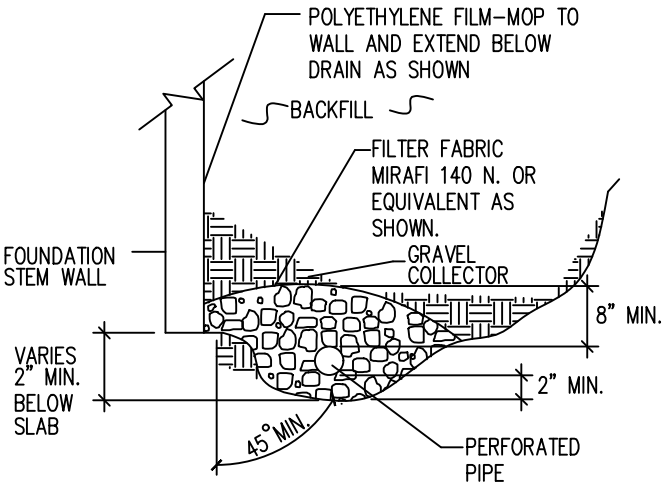
ENTECH ENGINEERING, INC.

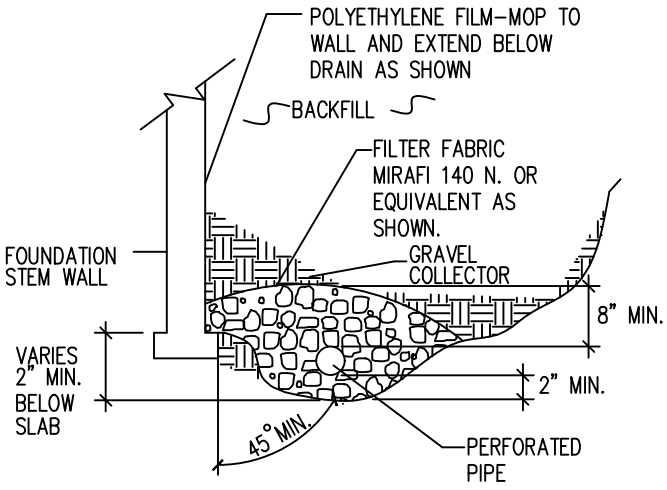
FEMA FLOODPLAIN MAP

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

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.

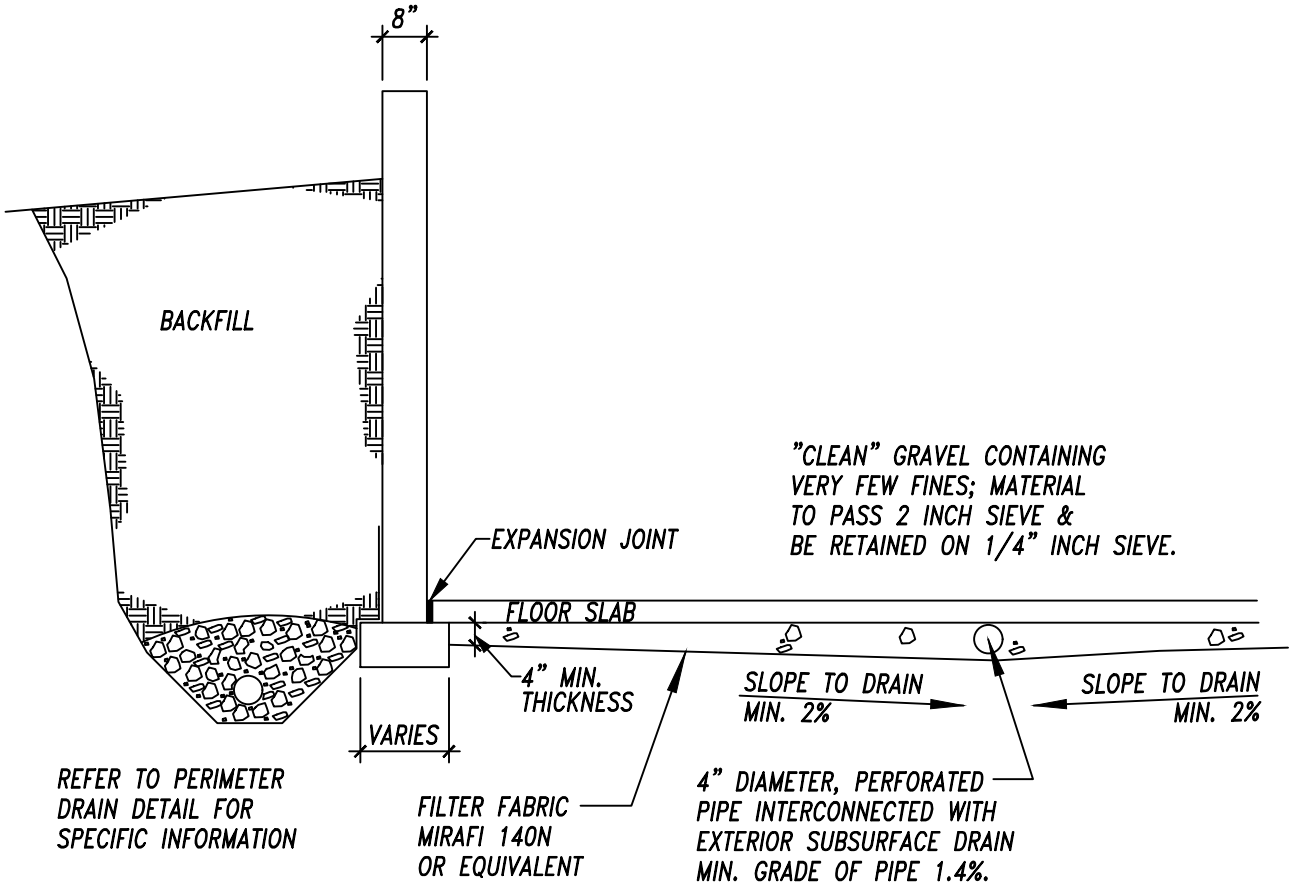
ENTECH ENGINEERING, INC.

PERIMETER DRAIN DETAIL

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

FIG. 8



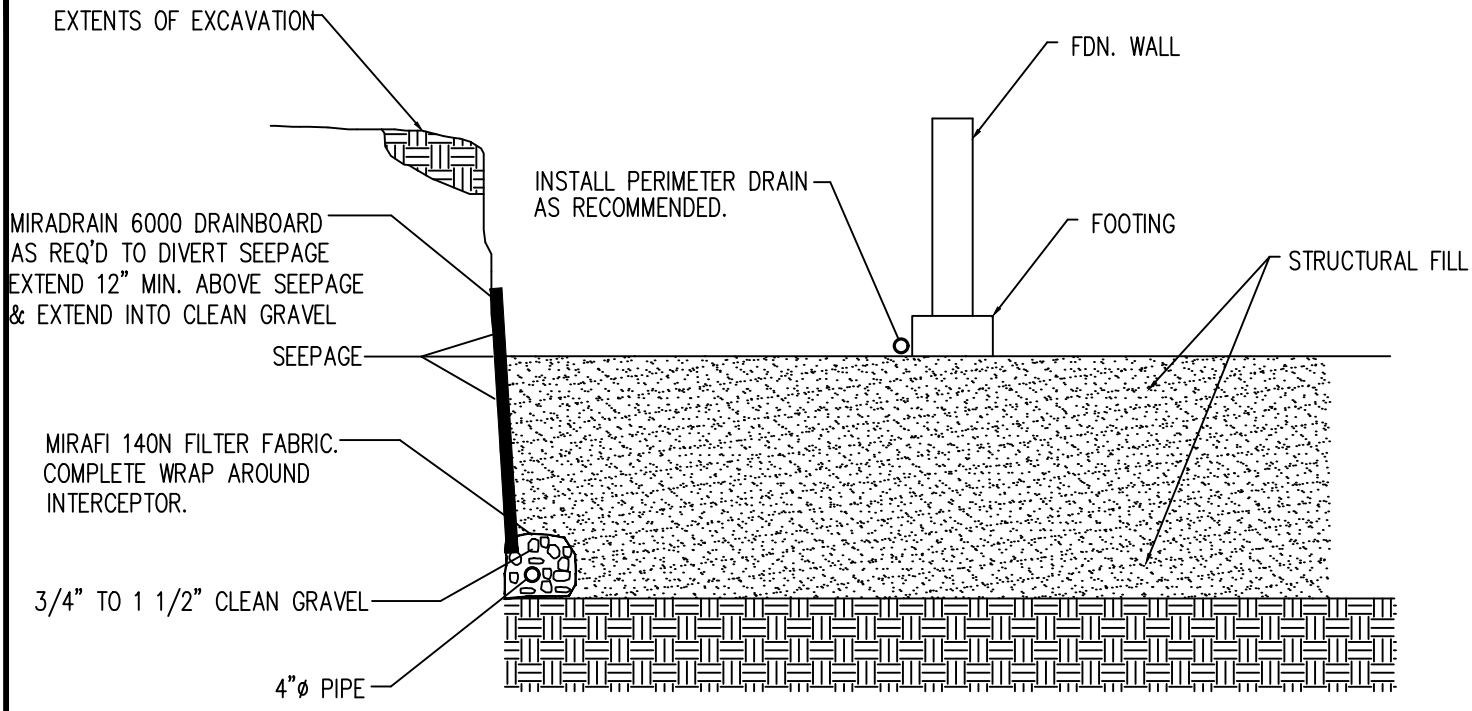
ENTECH ENGINEERING, INC.

TYP. UNDERSLAB DRAINAGE LAYER (CAPILLARY BREAK)

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

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.

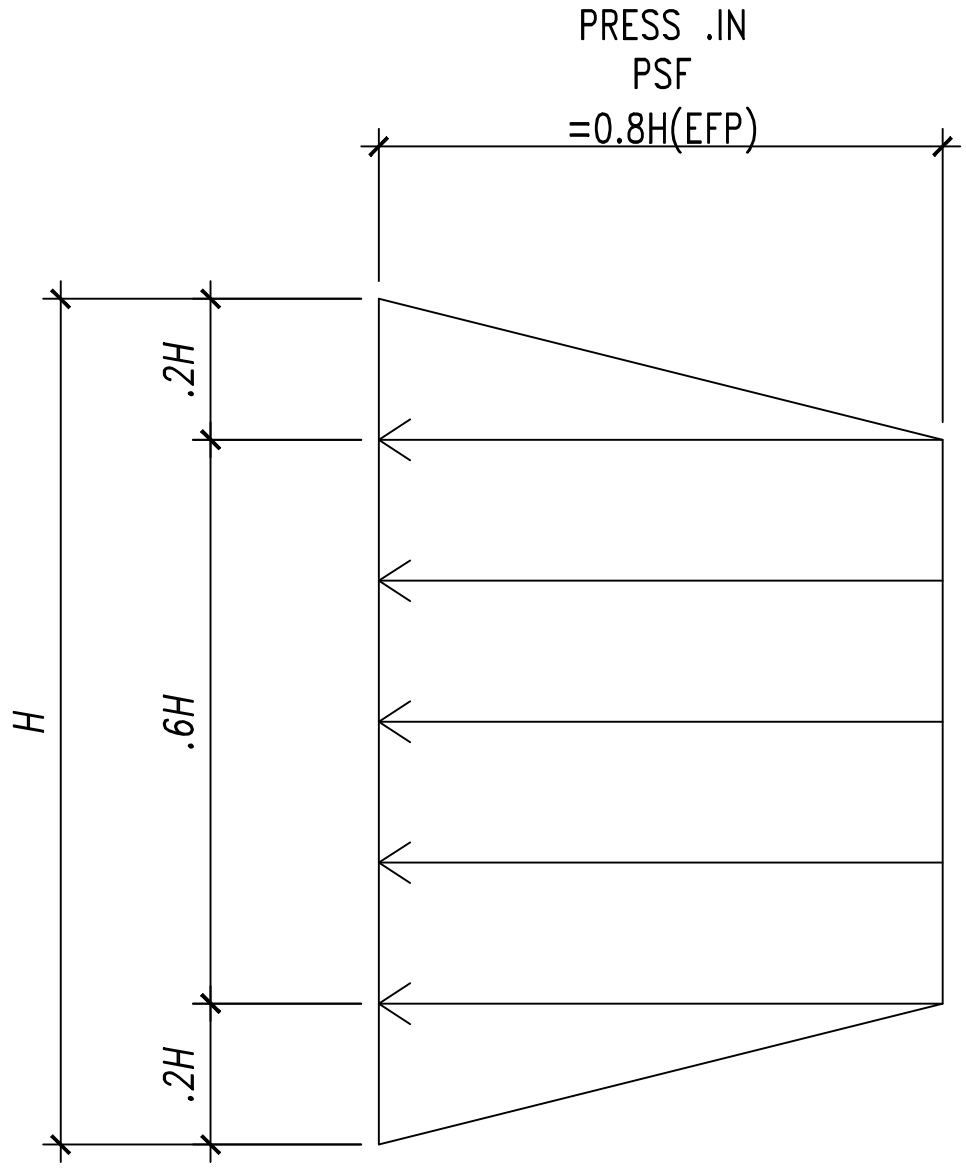
ENTECH ENGINEERING, INC.

INTERCEPTOR DRAIN DETAIL

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

FIG. 10



PRESSURE DISTRIBUTION

ENTECH ENGINEERING, INC.

LATERAL PRESSURE DIAGRAM

10650 BLACK FOREST ROAD
TAHER NABULSI

JOB NO.
221371

FIG. 11

APPENDIX A: Photographs

1

Looking east from the northwest side of the pond.

June 23, 2022

2

Looking northwest from the southeast corner of the site.

June 23, 2022

Job No. 221371

3

Looking southeast from the northwest corner of the site.

June 23, 2022

4

Looking southwest from the central portion of the east property line of the site.

June 23, 2022

Job No. 221371

5

Looking northeast from the southwest portion of the site

June 23, 2022

6

Looking south at the existing residence from the northeast portion of the site.

June 23, 2022

Job No. 221371

7

Looking east at existing modular home from the center of the proposed Lot 1.

June 23, 2022

8

Looking north at existing storage structures from the center of the proposed Lot 1.

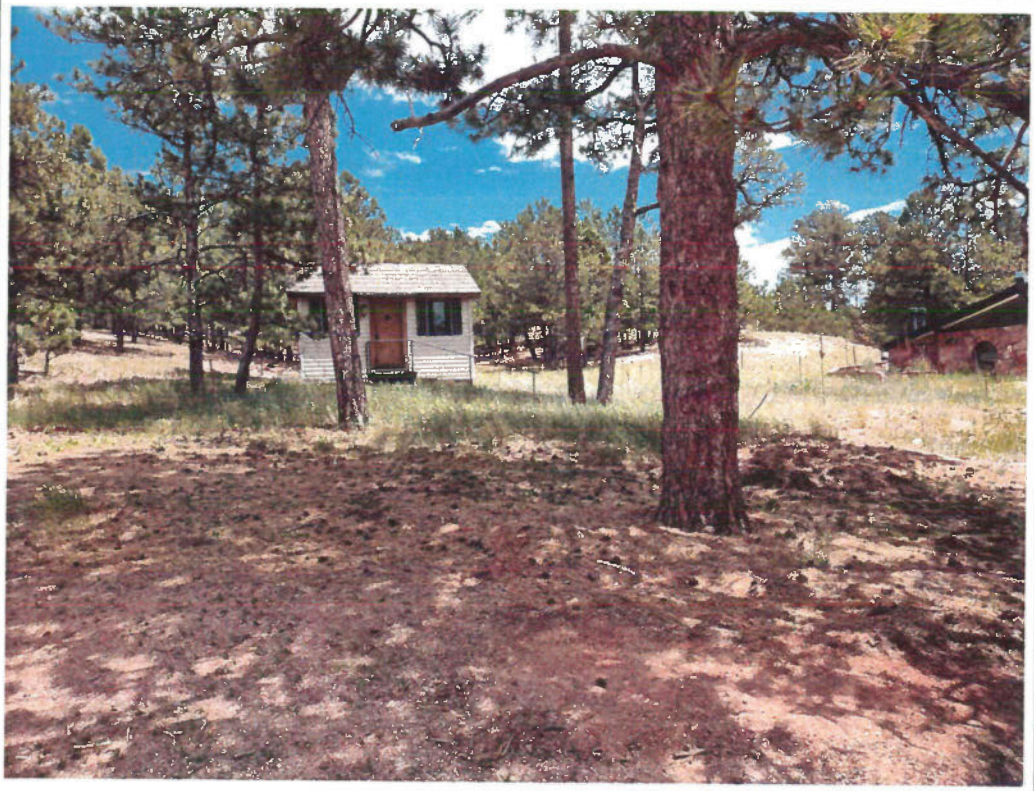
June 23, 2022

Job No. 221371

9

Looking northwest at an existing structure from the center of the proposed Lot 1.

June 23, 2022



10

Looking northwest at an existing structure from the center of the proposed Lot 1.

June 23, 2022

Job No. 221371

APPENDIX B: Test Boring and Test Pit Logs

TEST BORING NO. 1
DATE DRILLED 6/22/2022
Job # 221371

REMARKS

DRY TO 20', 6/22/22

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			10	2.1	1
5			17	11.3	1
10			50 7"	9.1	2
15			50 5"	8.5	2
20			50 5"	9.4	2

SAND, SLIGHTLY SILTY TO SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, DRY TO MOIST

CLAYSTONE, SANDY, GRAY BROWN, HARD, MOIST

TEST BORING NO. 2
DATE DRILLED 6/22/2022
CLIENT TAHER NABULSI
LOCATION 10650 BLACK FOREST RD.

REMARKS

DRY TO 20', 6/22/22

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			17	6.2	1
5			10	10.6	1
10			50 9"	8.7	2
15			50 6"	12.5	2
20			50 5"	10.3	2

SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, MOIST

CLAYSTONE, SANDY, GRAY BROWN, HARD, MOIST

ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
		LLL	7/15/22

JOB NO.: 221371
FIG NO.: B - 1

TEST PIT NO. 1
DATE EXCAVATED 6/23/2022
Job # 221371

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
topsoil, sandy clay loam, brown, moist	1					
	2					
gravelly sandy clay loam, fine to very coarse grained, dark brown, moist	3			gr	m	R-1
	4					
sandy loam, fine to coarse grained, grayish brown, moist	5			gr	s	2
	6					
	7					
	8					
	9					
	10					

TEST PIT NO. 2
DATE EXCAVATED 6/23/2022
CLIENT TAHER NABULSI
LOCATION 10650 BLACK FOREST ROAD

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
topsoil, sandy clay loam, brown, moist	1					
redoxomphic features @ 5-feet	2					
	3					
sandy loam, fine to coarse grained, grayish brown, moist	4			gr	s	2
	5					
sandy loam, fine to coarse grained, brown, moist	6			gr	m	2
	7					
sandy clay, fine to medium grained, grayish brown, very moist	8			ma		4A
	9					
	10					

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.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

TEST PIT LOG

DRAWN:	DATE:	CHECKED:	DATE:
jhr	6/30/22	JHR	7-15-22

JOB NO.: 221371
FIG NO.: B-2

TEST PIT NO. 3
DATE EXCAVATED 6/23/2022
Job # 221371

CLIENT TAHER NABULSI
LOCATION 10650 BLACK FOREST ROAD

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
topsoil, sandy clay loam, brown, moist	1					
	2					
	3					
sandy clay loam, fine to coarse grained, brown, moist	4			gr	s	3
	5					
sandy loam, fine to coarse grained, brown, moist	6			gr	s	2
	7					
	8					
	9					
	10					

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					

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.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

TEST PIT LOG

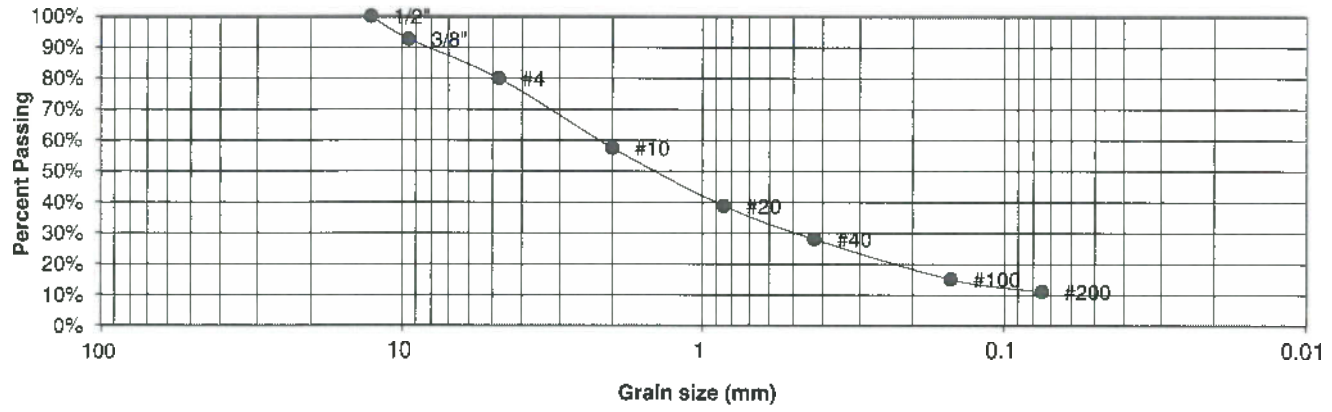
DRAWN:	DATE:	CHECKED:	DATE:
jhr	6/30/22	JHR	7-05-22

JOB NO.: 221371
FIG NO.: B-3

APPENDIX C: Laboratory Test Results

UNIFIED CLASSIFICATION	SM-SW	CLIENT	TAHER NABULSI
SOIL TYPE #	1	PROJECT	10650 BLACK FOREST RD.
TEST BORING #	TP-1	JOB NO.	221371
DEPTH (FT)	3	TEST BY	BL

Sieve Analysis
Grain Size Distribution



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	92.7%
4	79.9%
10	57.5%
20	38.8%
40	28.1%
100	15.1%
200	11.1%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

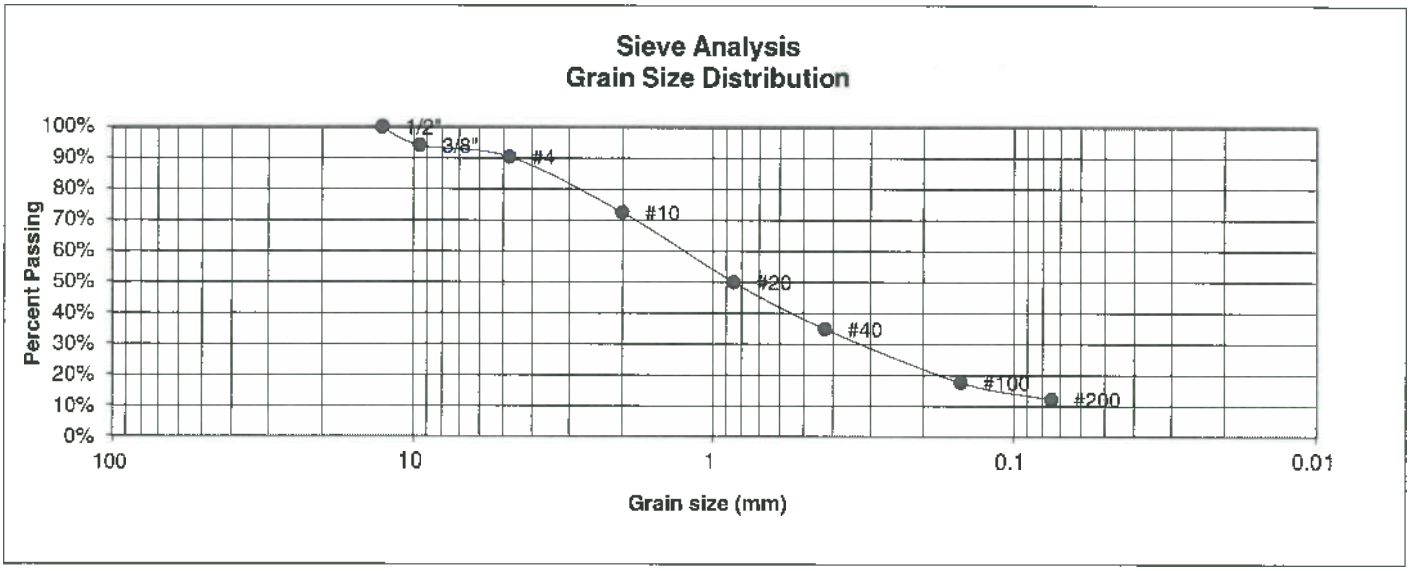
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		54(	7-15-22

JOB NO.: 221371

FIG NO.: C-1

UNIFIED CLASSIFICATION	SM	CLIENT	TAHER NABULSI
SOIL TYPE #	1	PROJECT	10650 BLACK FOREST RD.
TEST BORING #	TP-2	JOB NO.	221371
DEPTH (FT)	3.5	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	94.1%
4	90.4%
10	72.5%
20	50.0%
40	34.9%
100	17.6%
200	12.2%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

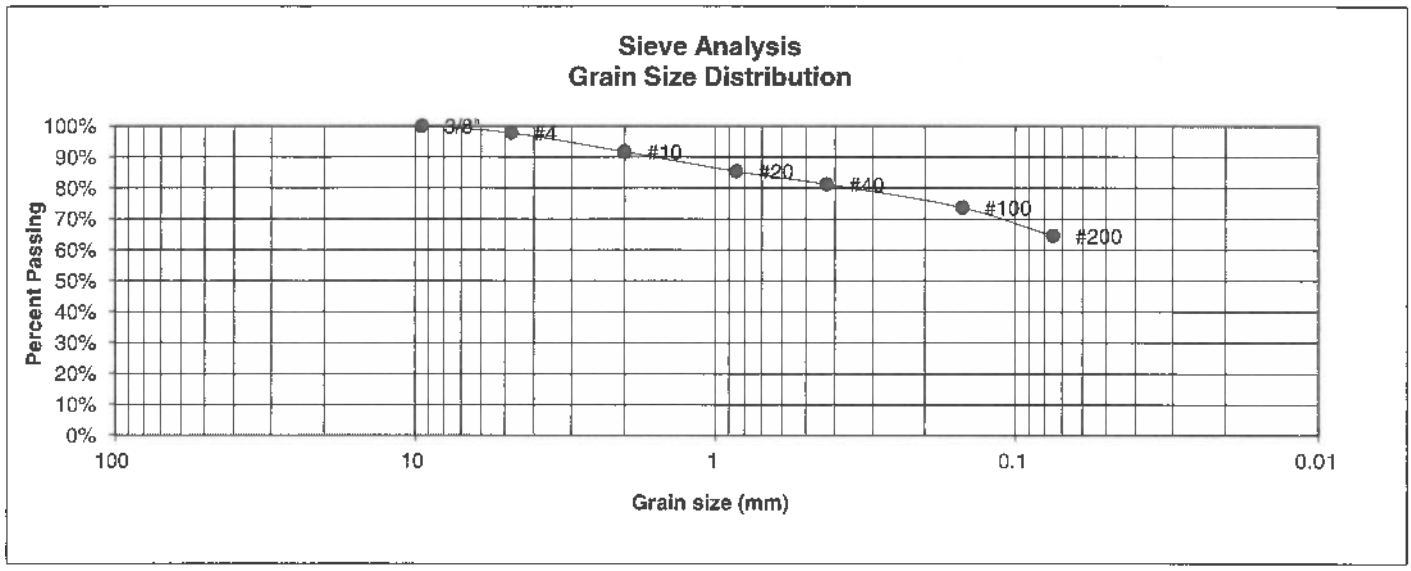
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		SMK	7-15-22

JOB NO.: 221371

FIG NO.: C-2

UNIFIED CLASSIFICATION	CL	CLIENT	TAHER NABULSI
SOIL TYPE #	2	PROJECT	10650 BLACK FOREST RD.
TEST BORING #	TP-2	JOB NO.	221371
DEPTH (FT)	7.5	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	97.8%
10	91.6%
20	85.3%
40	81.2%
100	73.7%
200	64.5%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

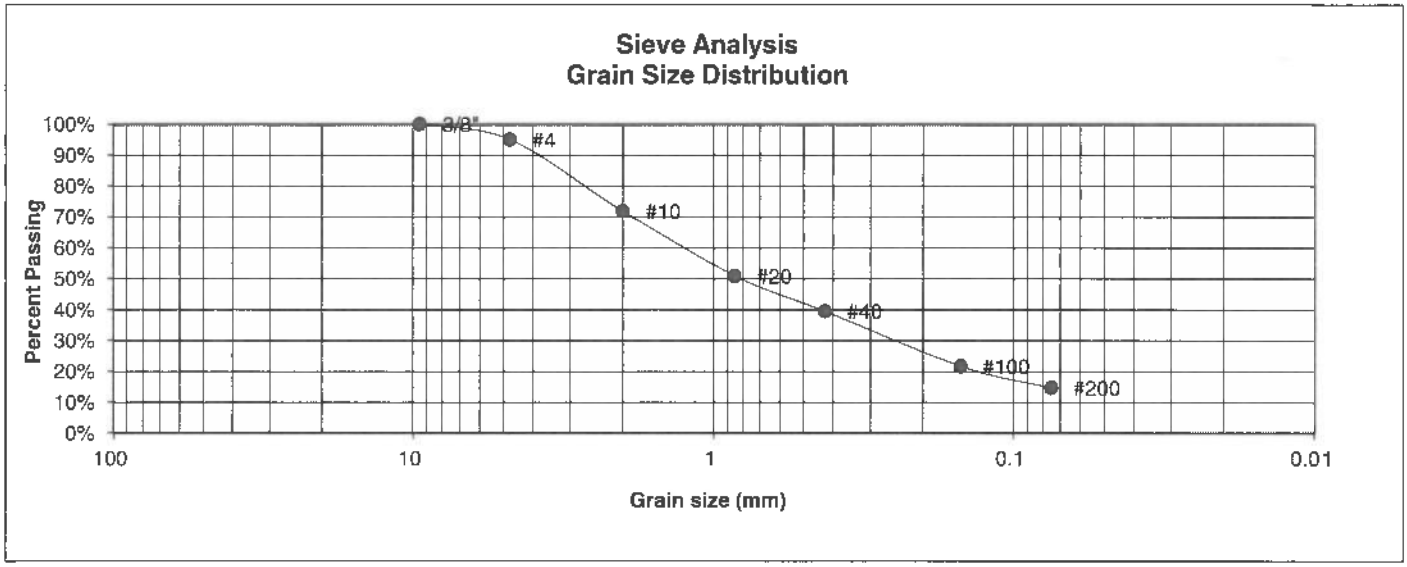
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		JHL	7-15-21

JOB NO.: 221371

FIG NO.: C-3

UNIFIED CLASSIFICATION	SM	CLIENT	TAHER NABULSI
SOIL TYPE #	1	PROJECT	10650 BLACK FOREST RD.
TEST BORING #	TP-3	JOB NO.	221371
DEPTH (FT)	5.5	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	95.1%
10	71.9%
20	51.0%
40	39.5%
100	21.7%
200	14.7%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

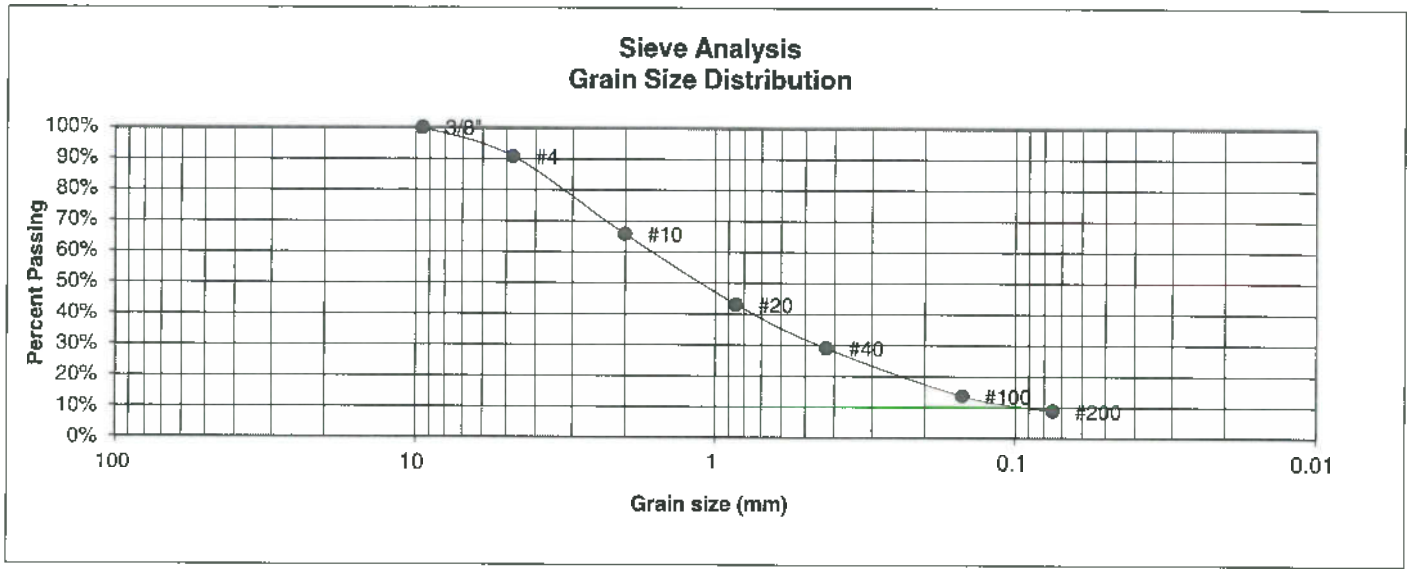
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		JHR	7-15-22

JOB NO.: 221371

FIG NO.: C-4

UNIFIED CLASSIFICATION	SM-SW	CLIENT	TAHER NABULSI
SOIL TYPE #	1	PROJECT	10650 BLACK FOREST RD.
TEST BORING #	1	JOB NO.	221371
DEPTH (FT)	2-3	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	90.8%
10	65.7%
20	43.1%
40	29.0%
100	13.6%
200	8.9%

Atterberg Limits

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

Swell

Moisture at start

Moisture at finish

Moisture increase

Initial dry density (pcf)

Swell (psf)

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

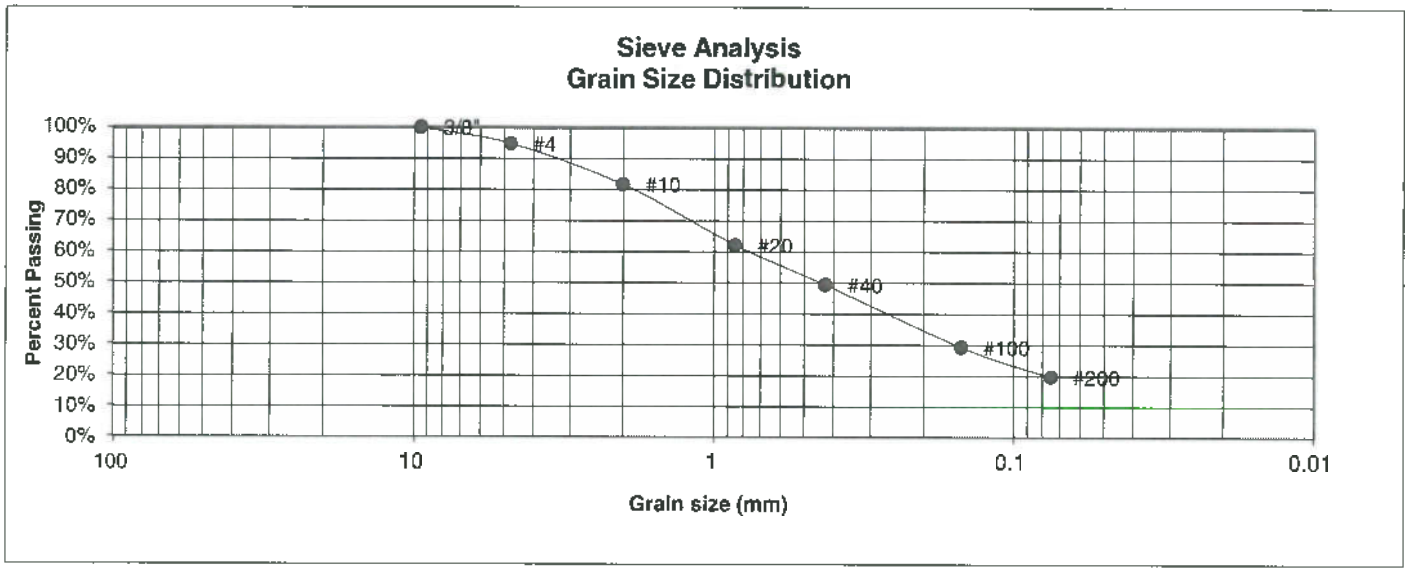
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		JHR	7-15-22

JOB NO.: 221371

FIG NO.: G-5

UNIFIED CLASSIFICATION	SM	CLIENT	TAHER NABULSI
SOIL TYPE #	1	PROJECT	10650 BLACK FOREST RD.
TEST BORING #	2	JOB NO.	221371
DEPTH (FT)	5	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	94.8%
10	81.8%
20	62.2%
40	49.4%
100	29.3%
200	19.7%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

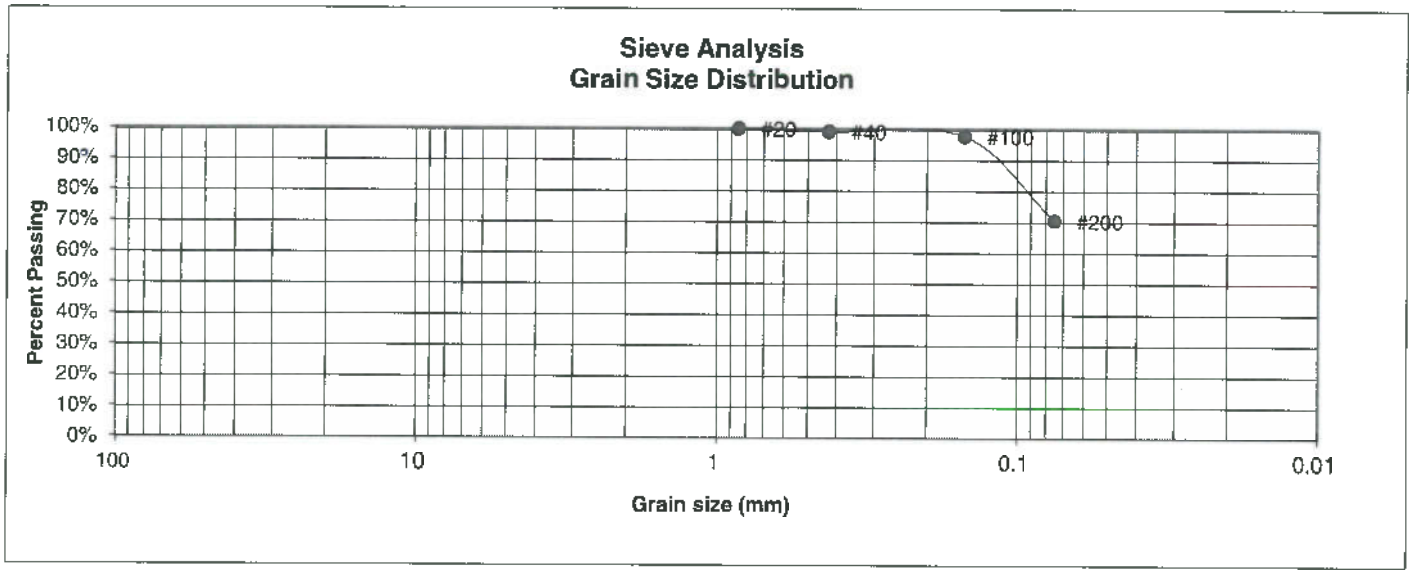
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		JHR	7-15-22

JOB NO.: 221371

FIG NO.: C-6

UNIFIED CLASSIFICATION	CL	CLIENT	TAHER NABULSI
SOIL TYPE #	2	PROJECT	10650 BLACK FOREST RD.
TEST BORING #	2	JOB NO.	221371
DEPTH (FT)	15	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	
20	100.0%
40	99.1%
100	97.7%
200	70.5%

Atterberg Limits	
Plastic Limit	23
Liquid Limit	37
Plastic Index	14

Swell	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		JHL	1-15-22

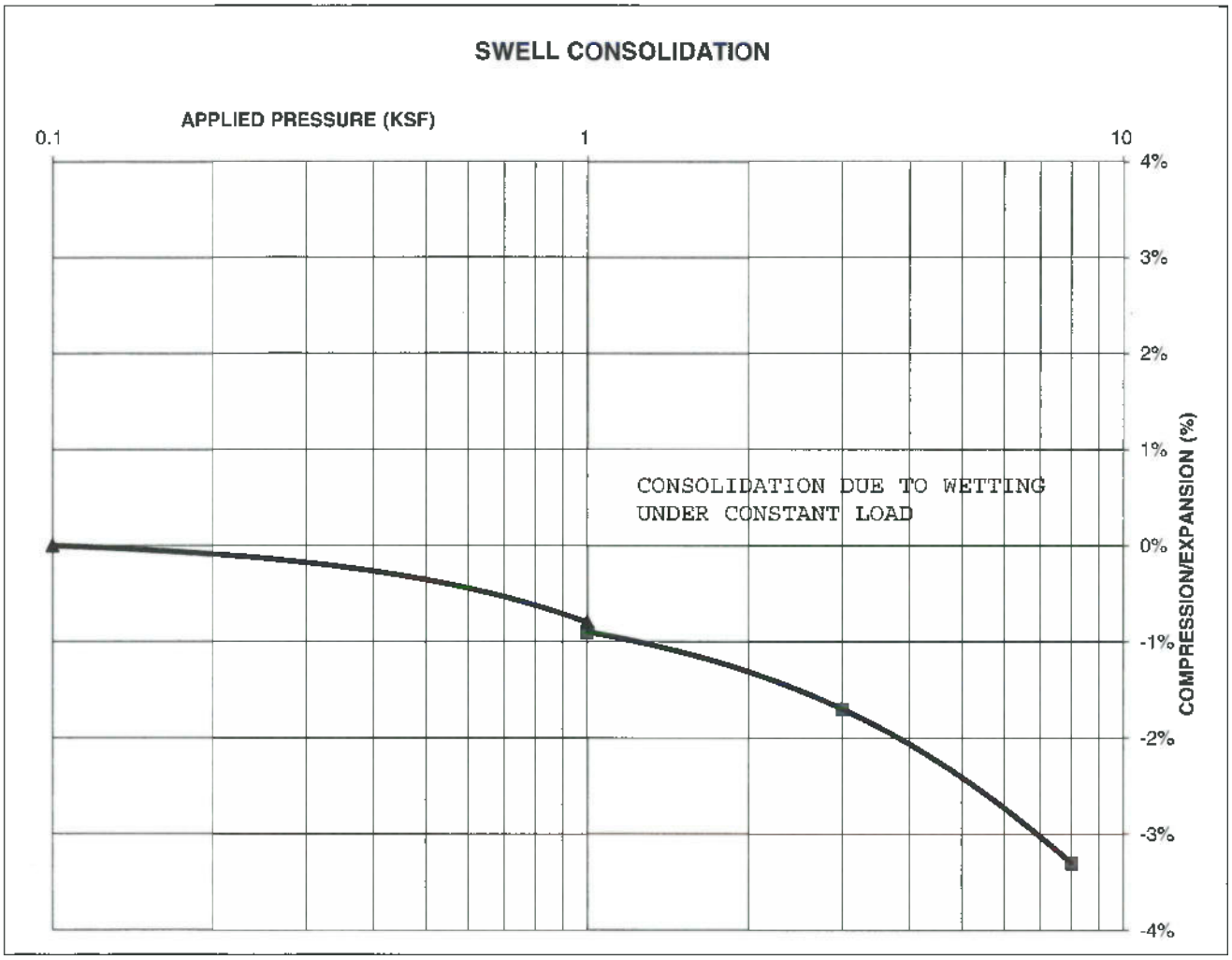
JOB NO.: 221371

FIG NO.: C-7

CONSOLIDATION TEST RESULTS

TEST BORING #	1	DEPTH(ft)	10
DESCRIPTION	CL	SOIL TYPE	2
NATURAL UNIT DRY WEIGHT (PCF)			121
NATURAL MOISTURE CONTENT			8.8%
SWELL/CONSOLIDATION (%)			-0.1%

JOB NO. 221371
CLIENT TAHER NABULSI
PROJECT 10650 BLACK FOREST RD.



ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

SWELL CONSOLIDATION
TEST RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		LLL	8/11/22

JOB NO.: 221371
FIG NO.: C-8

CLIENT	TAHER NABULSI	JOB NO.	221371
PROJECT	10650 BLACK FOREST RD.	DATE	6/27/2022
LOCATION	10650 BLACK FOREST RD.	TEST BY	BL

BORING NUMBER	DEPTH, (ft)	SOIL TYPE NUMBER	UNIFIED CLASSIFICATION	WATER SOLUBLE SULFATE, (wt%)
TB-1	2-3	1	SM-SW	0.00
TB-2	15	2	CL	<0.01

QC BLANK PASS

ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST
SULFATE RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		JHK	7-16-22

JOB NO.: 221371

FIG NO.: C-9

APPENDIX D: Soil Survey Descriptions

El Paso County Area, Colorado

40—Kettle gravelly loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 368g
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: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively 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 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
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

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

Pleasant

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

Other soils

Percent of map unit:
Hydric soil rating: No

71—Pring coarse sandy loam, 3 to 8 percent slopes

Map Unit Setting

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

Map Unit Composition

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

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

Pleasant

Percent of map unit:

Landform: Depressions
Hydric soil rating: Yes

Other soils

Percent of map unit:
Hydric soil rating: No

APPENDIX E: El Paso County Health Department Septic Records

A 566
AP

EL PASO COUNTY HEALTH DEPARTMENT
COLORADO SPRINGS, COLORADO

SEWAGE DISPOSAL INSPECTION FORM

APPROVAL: YES ✓ NO ____ 9310009757 DATE 10/6/78

ENVIRONMENTALIST Krueger

LOCATION (street number) 10650 Elk Forest Rd. OCCUPANT Bessie Ellison

LEGAL DESCRIPTION ____

TYPE OF CONSTRUCTION Existing Dwelling NO. OF BEDROOMS ____

SYSTEM INSTALLED BY Al Geiger

COMMERCIAL MFG. existing septic tank SIZE 900?

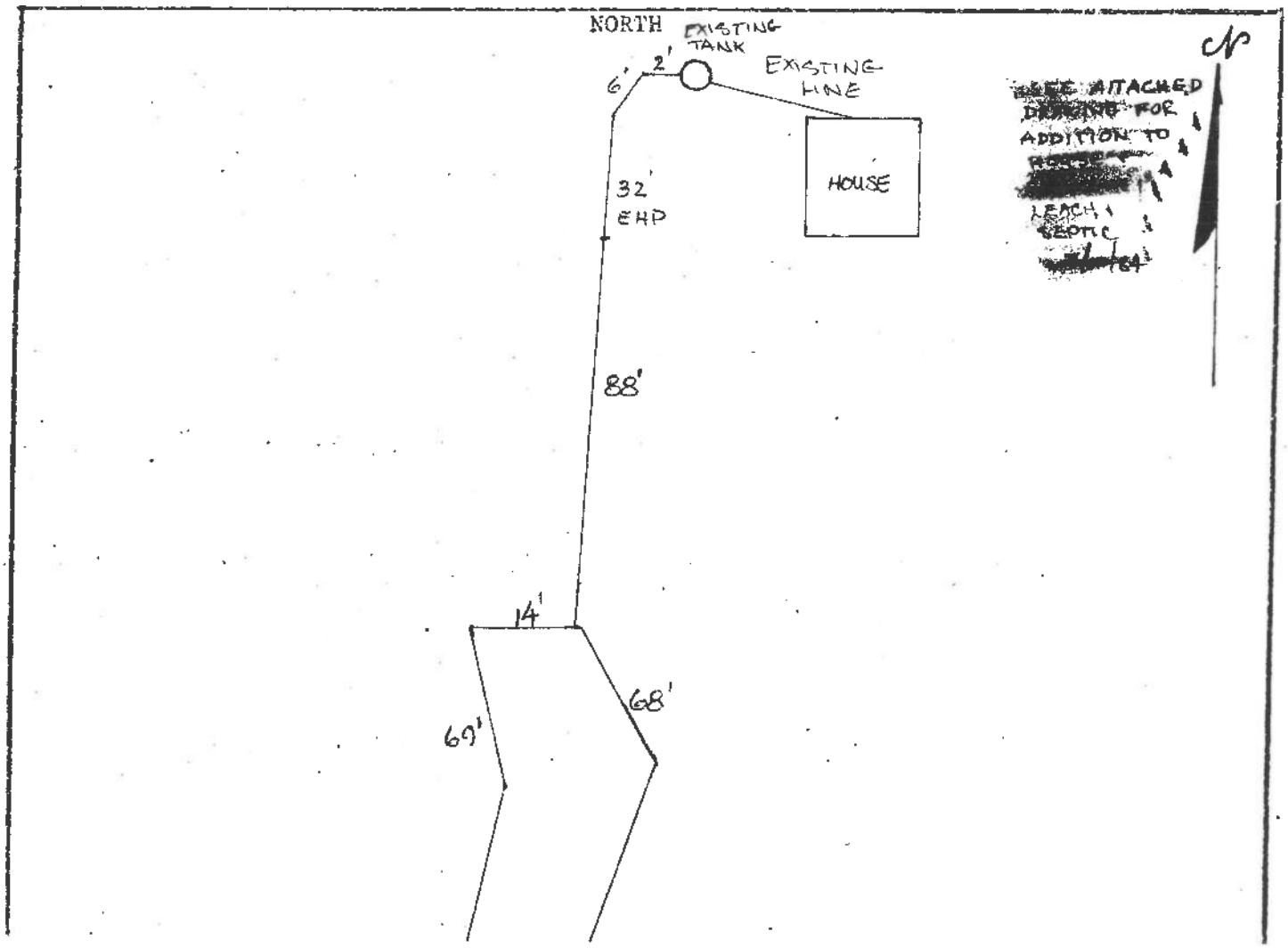
TYPE OF MATERIAL ____ NO. COMPARTMENTS —

WIDTH ____ LENGTH ____ DEPTH (total) ____ LIQ. CAP ____

DISPOSAL FIELD: BED OR TRENCH DEPTH ____ WIDTH 36" LENGTH 137' SQ. FT 401

DISTANCE BETWEEN LINES 14' ROCK yes DEPTH 12" UNDER 6" OVER 2"

LEACHING PITS (NO.) ____ LINING MATERIAL ____ CAPACITY SQ. FT. ____



Receipt #1443

Acres 2.24

Water Supply Well

EL PASO COUNTY . CITY-COUNTY HEALTH DEPARTMENT
501 North Foote Avenue . Colorado Springs, Colorado . 475-8240

PERMIT

Receipt No. 05423

TO CONSTRUCT, ALTER, REPAIR OR MODIFY AN INDIVIDUAL SEWAGE DISPOSAL SYSTEM

Issued To BESSIE ELLISON Date AUGUST 3, 1978

Address of Property 10,650 BLACK FOREST ROAD

(Permit valid at this address only)

Builder - Contractor - Owner Address _____ Phone _____

Sewage-Disposal System work to be performed by HAMACHER Phone _____

This Permit is issued in accordance with Regulation XII and Article 2 of Chapter 66, Colorado Revised Statutes 1963, as amended by the addition of a new Section 66-2-16. (H.B. 1205, 7-1-65). PERMIT EXPIRES upon completion-installation of sewage-disposal system or at the end of six (6) months from date of issue - whichever occurs first - (unless work is in progress).

- This Permit does not denote approval of zoning and acreage requirements. -

Permit Fee $50.00

February 3, 1979
Date of Expiration

CHARLES H. DOWDING, MD, PH
Director, City-County Health Department

Duane L Jansen
Environmentalist

NOTE: LEAVE ENTIRE SEWAGE-DISPOSAL SYSTEM UNCOVERED FOR FINAL INSPECTION.

existing tank 24-HOUR ADVANCE NOTICE REQUIRED

Septic tank 1250 gals. Field 125 Feet of trench 36" inches wide

repair of leach OR- Field 188 Feet of trench 24 inches wide

Seepage bed _____ ft. long _____ ft. wide. Seepage pit _____ sq. ft. _____ diam. _____ w/d

The Health Officer 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 times for the purpose of making such inspections as are necessary to determine compliance with requirements of this regulation.