ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599

SOILS AND GEOLOGY STUDY
FLYING HORSE EAST – SKETCH PLAN
HIGHWAY 94 AND ENOCH ROAD
EL PASO COUNTY, COLORADO

Prepared for:

Flying Horse Development, LLC
2138 Flying Horse Club Drive
Colorado Springs, Colorado 80921

Attn: Drew Balsick

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Respectfully Submitted,

ENTECH ENGINEERING, INC.

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

Reviewed by:

COLORADO LICENSED
JOSEPH COLLIN GOODE
23725
PROFESSIONAL ENGINEER

Digitally signed by Joseph C. Goode Jr.
Date: 12/20/24

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

Entech Job no. 240074

LLL

PCD No.

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1 SUMMARY

Project Location

The site consists of Sections 13 and 14, and the N½ of Sections 23 and 24, Township 14 South, Range 64 West of the 6th Principal Meridian in El Paso County, Colorado. The site is located approximately 4½ miles east of the Colorado Springs, Colorado city limits at the southeast corner of Enoch Road and Highway 94.

Project Description

Flying Horse East sketch plan consist of 1824.2 acres with proposed development consisting of low to high density residential, commercial, business park, hotel, school site, open space, and other associated site improvements. The development will be serviced by Cherokee Metro District.

Scope of Report

This report presents the results of our geologic evaluation and treatment of engineering geologic hazard study.

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 minor constraints on development and land use. These include areas of artificial fill, expansive soils, hydrocompaction, floodplain, potential seasonally shallow and seasonally shallow/ponded areas of water, and the potential for elevated radon levels. Based on the proposed development plan, it appears that these areas will have some impact on the development. These conditions will be discussed in greater detail in the report.

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.

2 GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION

The site consists of Sections 13 and 14, and the N½ of Sections 23 and 24, Township 14 South, Range 64 West of the 6th Principal Meridian in El Paso County, Colorado. The site is located approximately 4½ miles east of the Colorado Springs, Colorado city limits at the southeast corner of Enoch Road and Highway 94. The location of the site is as shown on the Vicinity Map, Figure 1.

The topography of the site varies from gently to moderately sloping generally to the northeast and south along ridge that bisects the central portion of the site with minor drainages with the main drainage located in the northern and northeastern portion of the site, and low-lying areas and blowouts that have the potential for seasonally ponded water. The minor drainages on site generally flow in northerly southerly directions, and the main drainage flows to the southeast through the site. Water was not observed in any of the drainages at the time of our site investigation. Several stock ponds/tanks are located across the site which are fed by existing water wells. The site contains primarily field grasses, weeds, yucca, and cacti in with areas of scattered trees around the existing ranch house in the north-central portion of the site. Site photographs are included in Appendix A. The locations and directions of the photographs are indicated in Figure 3.

Flying Horse East sketch plan consist of 1824.2 acres with proposed development consisting of low to high density residential, commercial, business park, hotel, school site, open space along the main drainage in the northern and northeastern portions of the site, and other associated site improvements. The development will be serviced by Cherokee Metro District. Seven detention ponds across the site are indicated on the sketch plan. Proposed development and grading plans were not available at the time of this report. The Site and Exploration Plan is presented in Figure 3, and the Sketch Plan is presented in Figure 4.

3 SCOPE OF THE REPORT

The scope of the report will include 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.

4 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 air 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. in November and December of 2024.

Eighty (80) test borings were drilled across the site as part of this study to determine the soils classification and engineering characteristics. The borings were drilled to depths of 20 feet using a truck-mounted, continuous flight auger drilling rig supplied and operated by Entech. The location Test Borings is indicated on the Site and Exploration Plan, Figure 3.

Laboratory testing was performed on some of the soils to classify and determine the soils engineering characteristics. Laboratory tests included moisture content testing, ASTM D-2216, tests included grain-size analysis ASTM D-422, Atterberg Limits ASTM D-4318, volume change testing using one dimensional swell/collapse testing. Sulfate testing was performed on select samples to evaluate potential for below grade concrete degradation due to sulfate attack. Results of the laboratory testing are included in Appendix C. A Summary of Laboratory Test Results is presented in Table C-1.

5 SOIL, GEOLOGY, AND ENGINEERING GEOLOGY

5.1 General Geology

Physiographically, the site lies in the western portion of the Great Plains Physiographic Province. Approximately 19 miles to the west is a major structural feature known as the Ute Pass Fault. This fault marks the boundary between the Great Plains Physiographic Province and the Southern Rocky Mountain Province. The site exists within the southern edge of a large structural feature known as the Denver Basin. Bedrock in the area tends to be very gently dipping in a northerly direction (Reference 5). The rocks in the area of the site are sedimentary in nature, and typically Tertiary to Cretaceous in age. The bedrock underlying the site consists of the Dawson Formation of Tertiary to Cretaceous Age. Overlying this formation are unconsolidated deposits of man-

placed fills, eolian sands and alluvial soils of the Quaternary Age. Some colluvial soils exist which are deposited by gravity and sheetwash. The alluvial soils were deposited by water in the drainages on site. Man-made soils exist as earthen dams and erosion berms. The site's stratigraphy will be discussed in more detail in Section 5.3.

5.2 Soil Conservation Survey

The Natural Resource Conservation Service (Reference 6), previously the Soil Conservation Service (Reference 7) has mapped nine soil types within Flying Horse East (Figure 5). In general, the soils classify as sandy loam. The soils are described as follows:

Type	Description
2	Ascalon sandy loam, 1 – 3% slopes
3	Ascalon sandy loam, 3 – 9% Slopes
8	Blakeland loamy sand, 1 – 9% slopes
10	Blendon sandy loam, 0 – 3% slopes
11	Bresser sandy loam, cool, 0 – 3% slopes
12	Bresser sandy loam, cool, 3 – 5% slopes
96	Truckton sandy loam, 0 – 3% slopes
100	Truckton-Bresser complex, eroded
116	Udic Haplusterts

Complete description of the soil type is presented in Appendix E. The soils have generally been described to have moderate to rapid permeabilities. Limitations on development include limited ability to support a load, shrink swell potential, slopes and frost action potential. Possible hazards with soil erosion are present on the site. The erosion potential can be controlled with vegetation. The majority of the soils have been described to have moderate erosion hazards.

5.3 Site Stratigraphy

The Geologic Map of the Pueblo 1ºx2º Quadrangle South-Central Colorado showing the site is presented in (Figure 6, Reference 3). The Geology Map prepared for the site is presented in Figure 6. Four mappable units were identified on this site which are described as follows:

Qaf **Artificial Fill of Holocene Age:** These are man placed fill deposits associated with erosion berms, earthen dams, and stockpiles of fill located across the site. Other areas of fill may exist on the site other than those mapped due to on-going construction.

Qp **Piney Creek Alluvium of Holocene Age:** This material is a water-deposited alluvium, typically classified as a silty to well-graded sand, brown to dark brown in color and of moderate density. The Piney Creek Alluvium can sometimes be very highly stratified containing thin layers of very silty and clayey soil.

Qpl **Playa Deposits of Holocene Age:** These are moderately consolidated clay, silt and sand formed by blowouts in the eolian sands that form seasonal ponds during wet seasons.

Qes **Eolian Sand of Quaternary Age:** These deposits are fine to medium grained soil deposited on the site by the action of prevailing winds from the west and northwest. They typically occur as large dune deposits or narrow ridges. These soils are typically tan to brown in color and tend to have very uniform or well-sorted gradation. These materials tend to have a relatively high permeability and low density.

The bedrock underlying the site consists of the 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 are variable layers of man placed fill deposits, eolian, alluvial deposits, and 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 Pueblo 1ºx2º Quadrangle South-Central Colorado by the Unite States Geologic Survey in 1978 (Reference 3), the *Geologic Map of the Corral Bluffs Quadrangle* distributed by the United States Geological Survey in 1968 (Reference 4), and the *Geologic Map of the Colorado Springs-Castle Rock Area*, distributed by the US Geological Survey in 1979 (Reference 9). The Test Boring Logs used in evaluating the site and are included in Appendix B. The Geology Map prepared for the site is presented in Figure 7.

5.4 Soil Conditions

The soils encountered in the Test Borings can be grouped into four general soil and rock types. The soils were classified using the Unified Soil Classification System (USCS).

Soil Type 1 classified as sand with varying amounts of silt and clay (SM, SW-SM, SC-SM, SW-SM-SC, SC). The sand was encountered in all of the borings at the surface grade to 8 feet and extended to approximately 3 feet bgs to the termination of the borings (20 feet). The sand was encountered at loose to dense states and dry to moist conditions. The majority of the sands were encountered at medium dense states. One dimensional swell/collapse testing on a samples of the sand resulted in volume changed of -2.0% to 1.8%, indicating low expansion potentials and low to moderate consolidation potentials.

Soil Type 2 classified as clay with varying amounts of sand and sandy silt (CL, ML). The clay and silt were encountered 23 of the test borings at depths ranging from the ground surface to 19 feet bgs and extending to depths ranging from 3 to 20 feet bgs. The clay and silt were encountered at medium stiff to hard consistencies and moist conditions. One dimensional swell/collapse testing on a samples of the clay resulted in volume changes of -1.5% to 0.9%, indicating low expansion potentials and low consolidation potentials.

Soil Type 3 classified as silty to clayey sandstone (SM, SC), or as a silty sand and clayey sand when classified as a soil. The sandstone was encountered in TB-3, TB-67, TB-69, and TB-74 at 18 to 19 feet bgs, and extended to the termination of the test borings (20 feet). The sandstone was encountered at dense to very dense states and moist conditions. The sandstone is typically nonexpansive.

Soil Type 4 classified as claystone and siltstone (CL, ML), or as a sandy clay, clay with sand, and sandy silt when classified as a soil. The claystone was encountered in TB-12, TB-48, TB-53, TB-62, TB-64 at depths of 14 to 18 feet bgs and extended to the termination of the test borings (20 feet). The claystone and siltstone were encountered at very stiff to hard consistencies and moist conditions. One dimensional swell/collapse testing on a sample of the siltstone resulted in volume change of 0%.

The Test Boring Logs are presented in Appendix B, and the depth to bedrock and groundwater are presented on Table B-1. Laboratory Test Results are presented in Appendix C, and a Summary of Laboratory Test Results is presented in Table C-1.

5.5 Groundwater

Groundwater was encountered in TB-3 at 18.5 feet, the remaining borings were dry to the depths drilled which were drilled to 20 feet. Due to livestock that was on the site at the time the borings were backfilled subsequent to drilling. Areas potentially seasonal shallow and seasonal

groundwater have been mapped in the drainages and low-lying areas on the site. These areas are discussed in the following section. Fluctuation in groundwater conditions may occur due to variations in rainfall and other factors not readily apparent at this time. It should be noted that in the sandy materials on-site, some groundwater conditions might be encountered due to the variability in the soil profile. Isolated sand and gravel layers within the soils, sometimes only a few feet in thickness and width, can carry water in the subsurface. Groundwater may also flow on top of the underlying bedrock. Builders and planners should be cognizant of the potential for the occurrence of such subsurface water features during construction on-site and deal with each individual problem as necessary at the time of construction.

6 ENGINEERING GEOLOGY – IDENTIFICATION AND MITIGATION OF GEOLOGIC HAZARDS

Detailed mapping has been performed on this site to produce an Engineering Geology Map Figure 7. This map shows the location of various geologic conditions of which the developers should be cognizant during the planning, design and construction stages of the project. These hazards and the recommended mitigation techniques are as follows:

Artificial Fill – Constraint

These are areas of man-placed fill associated with minor fill piles, erosion berms, and embankments across the site.

Mitigation: The fill will likely be mitigated with future site grading. The erosion berms can either be avoided or removed from building areas on each. The fill on this site is considered uncontrolled for construction purposes. Any uncontrolled fill encountered beneath foundations or drainage structures will require removal and recompaction at a minimum of 95% of its maximum Modified Procter Dry Density, ASTM D-1557.

Areas of Erosion – Constraint

These are isolated areas that are undergoing erosion by water and sheetwash producing gullies and rill erosion and are located along portions of the minor drainages across the site.

Mitigation: Due to the nature of the soils on this site, virtually all the soils are subject to erosion by wind and water. Areas of erosion can occur across the entire site, particularly if the soils are disturbed during construction. Vegetation reduces the potential for erosion. In areas where erosion is actively taking place check dams, regrading and revegetation using channel lining mats to anchor vegetation may be needed. Further recommendations for erosion control are discussed under Section 9.0 "Erosion Control" of this report. Recommendations pertaining to revegetation

may require input from a qualified landscape architect and/or the Natural Resource Conservation Service (previously Soil Conservation Service).

Expansive Soils – Constraint

Potentially expansive soils were encountered in some of the test borings drilled on the site. These occurrences are typically sporadic; therefore, none have been indicated on the maps. These clays or claystone, if encountered beneath foundations, can cause differential movement in the structure foundation. These occurrences should be identified and dealt with on an individual basis.

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. Another alternative in areas of highly expansive soils is the use of drilled pier foundation systems. Typical minimum pier depths are on the order of 25 feet or more and require penetration into the bedrock material a minimum of 4 to 6 feet, depending upon building loads. Floor slabs on expansive soils should be expected to experience movement. Overexcavation and replacement has been successful in minimizing slab movements. The use of structural floors should be considered for basement construction on highly expansive clays. Final recommendations should be determined after additional investigation of each building site.

Hydrocompaction – Constraint

Areas in which hydrocompaction have been identified are acceptable as building sites. In areas identified for this hazard classification, however, we anticipate a potential for settlement movements upon saturation of these surficial soils. The low density, uniform grain sized, windblown sand deposits are particularly susceptible to this type of phenomenon. Additionally, loose or collapsible soils other than those mapped may be encountered on this site.

Mitigation: The potential for settlement movement is directly related to saturation of the soils below the foundation areas. Therefore, good surface and subsurface drainage is extremely critical in these areas in order to minimize the potential for saturation of these soils. The ground surface around all permanent structures should be positively sloped away from the structure to all points, and water must not be allowed to stand or pond anywhere on the site. We recommend that the ground surface within 10 feet of the structures be sloped away with a minimum gradient of five percent. If this is not possible on the upslope side of the structures, then a well-defined swale should be created to intercept the surface water and carry it quickly and safely around and away

from the structures. Roof drains should be made to discharge well away from the structures and into areas of positive drainage. Where several structures are involved, the overall drainage design should direct water away from structures. Planting and watering in the immediate vicinity of the structures, as well as general lawn irrigation, should be minimized

Areas of loose or collapsible soils may also be encountered in these areas. Should loose or collapsible soils be encountered beneath foundations, removal and recompaction of the upper 2 to 3 feet with thorough moisture conditioning at a minimum of 95 percent of its maximum Modified Proctor Dry Density, ASTM D-1557 will be necessary. Specific recommendations should be made after additional investigation of each building site.

Slope Stability and Landslide Susceptibility - Hazard

The majority of the slopes on-site are gradually sloping and do not exhibit any past or potential unstable slopes or landslides. It is recommended that any future grading or fill slopes should be 3:1 or flatter.

Subsidence Area – Hazard

Based on a review of a Subsidence Investigation Report for the Colorado Springs area by Dames and Moore, 1985 (Reference 10) and the mining report for the Colorado Springs coalfield (Reference 11), the site is not undermined. The closest underground mine in the area is the Franceville Coal Mine, approximately 3½ miles to the southwest of the site. The site is not mapped within any potential subsidence zones.

Groundwater and Floodplain Areas – Constraint

Several minor drainages are located across the site with the main drainage located in the northern and northeastern portion of the site, and low-lying areas and blowouts that have the potential for seasonally ponded water. The main drainage on the site has been mapped within a floodplain according to the FEMA Map Nos. 08041C0785G and 08041C0805G, (Figure 8, Reference 8). This main drainage will be open space. Areas where potential seasonally shallow and shallow groundwater have been indicated on the site geology/engineering geology map, Figure 7. Lots adjacent to the drainages may experience higher groundwater levels during peak flows. Finished floor levels must be a minimum of one floor above any floodplain level. **Exact floodplain locations and drainage studies are beyond the scope of this report.**

The potential seasonally shallow groundwater and seasonally shallow groundwater areas located on the site are shown on the Geology Map, Figure 6. Portions of these areas mapped with these

constraints have been identified in the National Wetland Inventory as Freshwater Emergent Wetland habitats classified as R4SBC (Riverine – R, Intermittent – 4, Streambed – SB, Seasonally Flooded – C) PUSA (Palustrine – P, Unconsolidated Shore – US, Temporary Flooded – A), and PEM1A (Palustrine – P, Emergent – EM, Persistent – 1, Temporary Flooded – A) (Figure 9, Reference 9).

Groundwater was encountered in TB-3 at 18.5 feet, the remaining borings were dry to the depths drilled which were drilled to 20 feet. Due to livestock that was on the site at the time the borings were backfilled subsequent to drilling. Buildings should maintain a minimum separation of 3 feet between the lowest foundation grade and the maximum anticipated groundwater level. Subsurface perimeter drains are recommended for structures with useable below grade space. Additional drains may be required in building areas close drainages to help prevent the intrusion of water into areas below grade. Shallow groundwater areas can be mitigated with the installation of drains. Typical drain options/details are presented in Figures 10 through 13. These areas are discussed as follows:

Potential Seasonally Shallow Groundwater – Constraint

The areas identified with this constraint are the minor drainages located across the site. In these areas, we would anticipate periodic high subsurface moisture conditions and frost heave potential on a seasonal basis. Additional, highly organic soils could be encountered in these areas. These areas lie within proposed drainage easements, or will likely be regraded as part of the proposed development. Minor drainage swales in building areas should be properly diverted away from the structures. Any structures in or adjacent to these areas should follow the mitigation discussed below.

Seasonal Shallow Groundwater: The areas identified with this constraint are the playa (Qpl) deposit in the western portion of the site, stock ponds located on the site, and the main drainage in the northern and northeastern portion of the site. In these areas, we would anticipate the potential for periodically high subsurface moisture conditions and possible frost heave potential, depending on the soil conditions. These areas are located along some of the minor drainages and behind earthen dams across the site. It is anticipated these areas would be regraded and filled or avoided by the development. Areas of shallow groundwater may exhibit unstable subgrade conditions in terms of bearing support of construction equipment during overlot grading. Areas immediately adjacent to drainage may also experience higher subsurface moisture conditions during periods of higher flows.

Mitigation: In these locations, foundations subject to severe frost heave potential should penetrate sufficient depth so as to discourage the formation of ice lenses beneath foundations. At this location and elevation, foundation depth for frost protection is 30 inches. In areas where high subsurface moisture conditions are anticipated periodically, a subsurface perimeter drain will be necessary to help prevent the intrusion of water into areas located below grade. Subsurface perimeter drains may be necessary to prevent the intrusion of water into areas below grade. Typical drain details are presented in Figure 9. Where shallow groundwater is encountered, underslab drains or interceptor drains may be necessary Figures 10 and 11. Specific recommendations should be made after additional investigation has been completed and building locations have been identified on a lot by lot basis. Swales should be created to intercept surface runoff and carry it safely around and away from structures.

Debris Fans/Debris Flow Susceptibility – Hazard

The site is not mapped within any area susceptible to debris flows according to the *Debris Flow Susceptibility Map of El Paso County, Colorado,* by McCoy, Morgan, and Berry (Reference 10).

Shallow Bedrock – Constraint

Bedrock was encountered in nine of the test borings at depths ranging from the 14 to 19 feet bgs. A Summary of the Depth to Bedrock is included in Table B-1. Where shallow bedrock is encountered, excavation/grading may be difficult requiring track-mounted excavators with ripper attachments. Depending on final grading plans, bedrock may be encountered in deeper cuts for utility excavations.

Faults – Hazard

The closest fault is the Ute Pass Fault, located approximately 19 miles west of the site. 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 11), 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 is a colorless, tasteless radioactive gas with a United States Environmental Protection Agency (EPA) specified action level of 4.0 picocuries per liter (pCi/L) of air. Radon gas has a very short half-life of 3.8 days. Radon levels for the 80930 area were not available in the report

by the Colorado Geologic Survey in the open file, Report No. 91-4 (Reference 12). Average Radon levels for the nearby zip codes 80808 and 80831 zip codes are presented in the table below:

Average Radon Levels of 14.60 for the 80908 Zip Code		Average Radon Levels of 4.50 for the 80831 Zip Code
0 < 4 pCi/L	50.00%	0.00%
4 < 10 pCi/L	0.00%	100.00%
10 < 20 pCi/L	0.00%	0.00%
> 20 pCi/L	50.00%	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.**

6.1 Relevance of Geologic Conditions to Land Use Planning

The proposed development will consist of low to high density residential, commercial, business park, hotel, school site, and open space along the main drainage in the northern and northeastern portion of the site. The development will be serviced by Cherokee Metro District. It is our opinion that the existing geologic and engineering geologic conditions will impose some constraints on the proposed development and construction. The most significant problems affecting development will be those associated with the drainages on site that can be avoided. Other hazards on site can be satisfactorily mitigated through proper engineering design and construction practices.

The upper sand soils are typically at medium states and should provide good support for foundations. Loose soils, if encountered at foundation depth, will require mitigation. Foundations anticipated for the site are standard spread footings possibly in conjunction with overexcavation in areas of expansive soils or recompaction in areas of loose soils. Excavation is anticipated to be moderate with rubber-tired equipment for the site sand materials and will require track mounted equipment for the dense sandstone. Expansive layers may also be encountered in the soil and bedrock on this site. Areas of expansive soils encountered on site are sporadic; therefore, none have been indicated on the maps. Expansive soils, if encountered, will require special foundation design and/or overexcavation. These soils will not prohibit development.

Areas of hydrocompaction have been identified on this site where there is the potential for settlement movements upon saturation of the surficial soils. Good surface and subsurface

drainage are critical in these areas, and the ground surface should be positively sloped away from structures at all points. Roof drains should be made to discharge well away from structures and planting and watering in the immediate vicinity of structures should be minimized.

Several minor drainages are located across the site with the main drainage located in the northern and northeastern portion of the site, and low-lying areas and blowouts that have the potential for seasonally ponded water. The main drainage on the site has been mapped within a floodplain according to the FEMA Map Nos. 08041C0785G and 08041C0805G, (Figure 8, Reference 8). This main drainage will be open space. Areas where potential seasonally shallow and shallow groundwater have been indicated on the site geology/engineering geology map, Figure 7. Lots adjacent to the drainages may experience higher groundwater levels during peak flows. Finished floor levels must be a minimum of one floor above any floodplain level. **Exact floodplain locations and drainage studies are beyond the scope of this report.**

Areas of fill were observed on site that are associated with erosion berms, embankments, and areas of man-placed fill piles. It is anticipated the fill piles and erosion berms will be mitigated during site grading. Any uncontrolled fill encountered beneath foundations should be removed and recompacted at a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D-1557.

In summary, development of the site can be achieved if the items mentioned above are mitigated. These items can be mitigated through proper design and construction or through avoidance. Investigation on each lot is also recommended prior to construction.

7 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 13), portions of the area are mapped as stream terrace and floodplain deposits. According to the *Atlas of Sand, Gravel and Quarry Aggregate Resources, Colorado Front Range Counties* distributed by the Colorado Geological Survey (Reference 14), areas of the site is mapped with E3 – eolian sand and U3 – upland deposits potential fine aggregate resources. According to the *Evaluation of Mineral and Mineral Fuel Potential* (Reference 15), the area of the site has been mapped as “Little or No Potential” for industrial minerals. It is possible sand materials on site could be an aggregate resource. However, considering the silty to clayey nature of much of these materials and

abundance of similar materials through the region and the close proximity to developed land, they would be considered to have little significance as an economic resource.

According to *the Evaluation of Mineral and Mineral Fuel Potential of El Paso County State Mineral Lands* (Reference 15), 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 15).

The site has been mapped as "Fair" for oil and gas resources (Reference 14). 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.

8 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.

9 ROADWAY, EMBANKMENT, and STORM WATER FACILITY CONSTRUCTION RECOMMENDATIONS

In general, the site soils are suitable for the construction of roadways and embankments. Groundwater is not anticipated to affect roadway or pond construction. If road or embankment excavations encroach on the groundwater level unstable soil conditions may be encountered. Unstable soils are not anticipated in areas of shallow bedrock. 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% of optimum moisture content and compacted to a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D-1557, prior to placing new fill. Areas receiving fill may require stabilization with rock or fabric if 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% of its maximum Modified Proctor Dry Density, ASTM D-1557. 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.

10 CLOSURE

It is our opinion that the existing geologic engineering and geologic conditions will impose some constraints on development and construction of the site. The majority of these conditions 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. Additional investigations will be required as development plans are prepared. 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 Flying Horse Development, LLC 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.

11 REFERENCES

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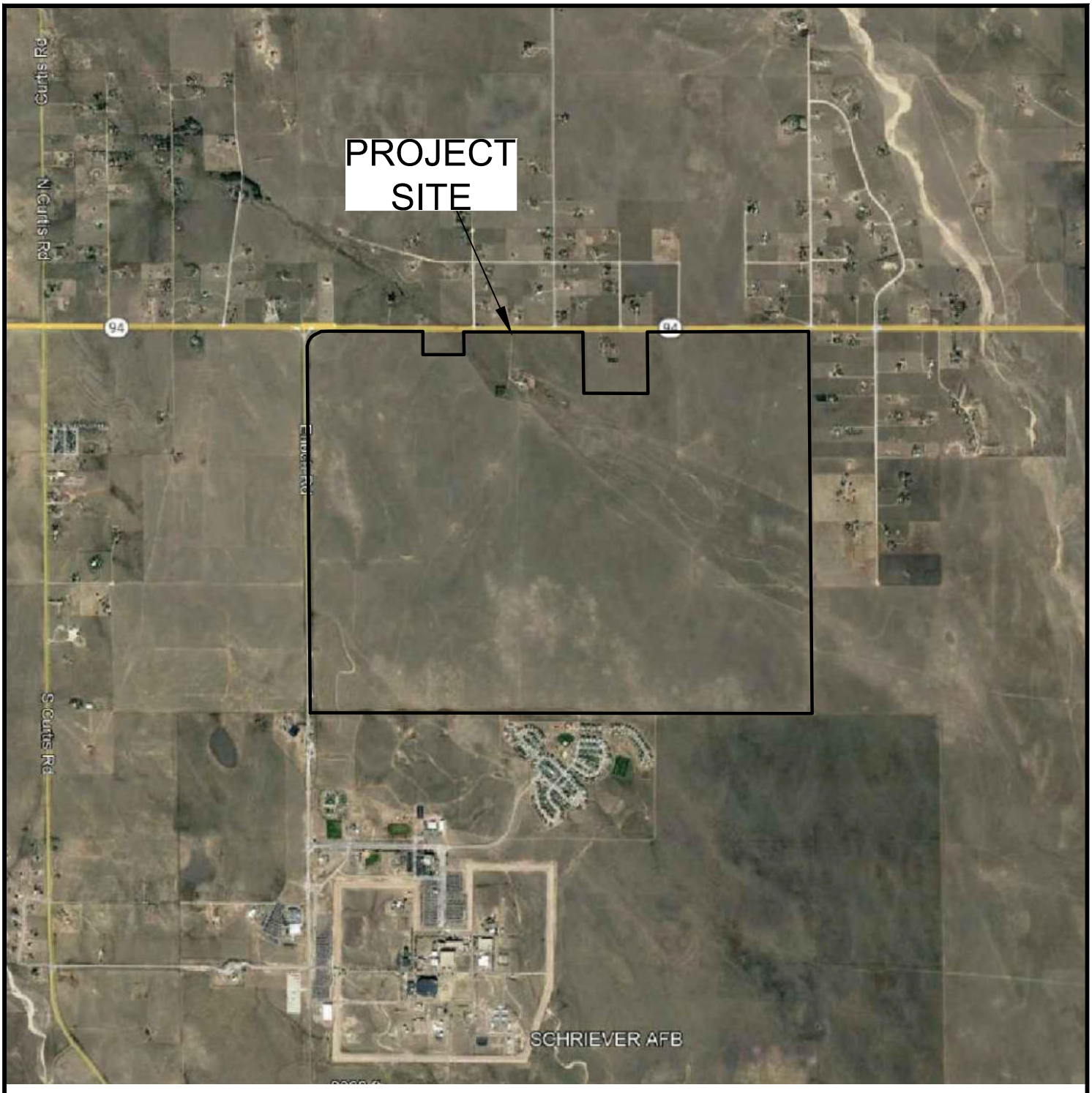
FIGURES



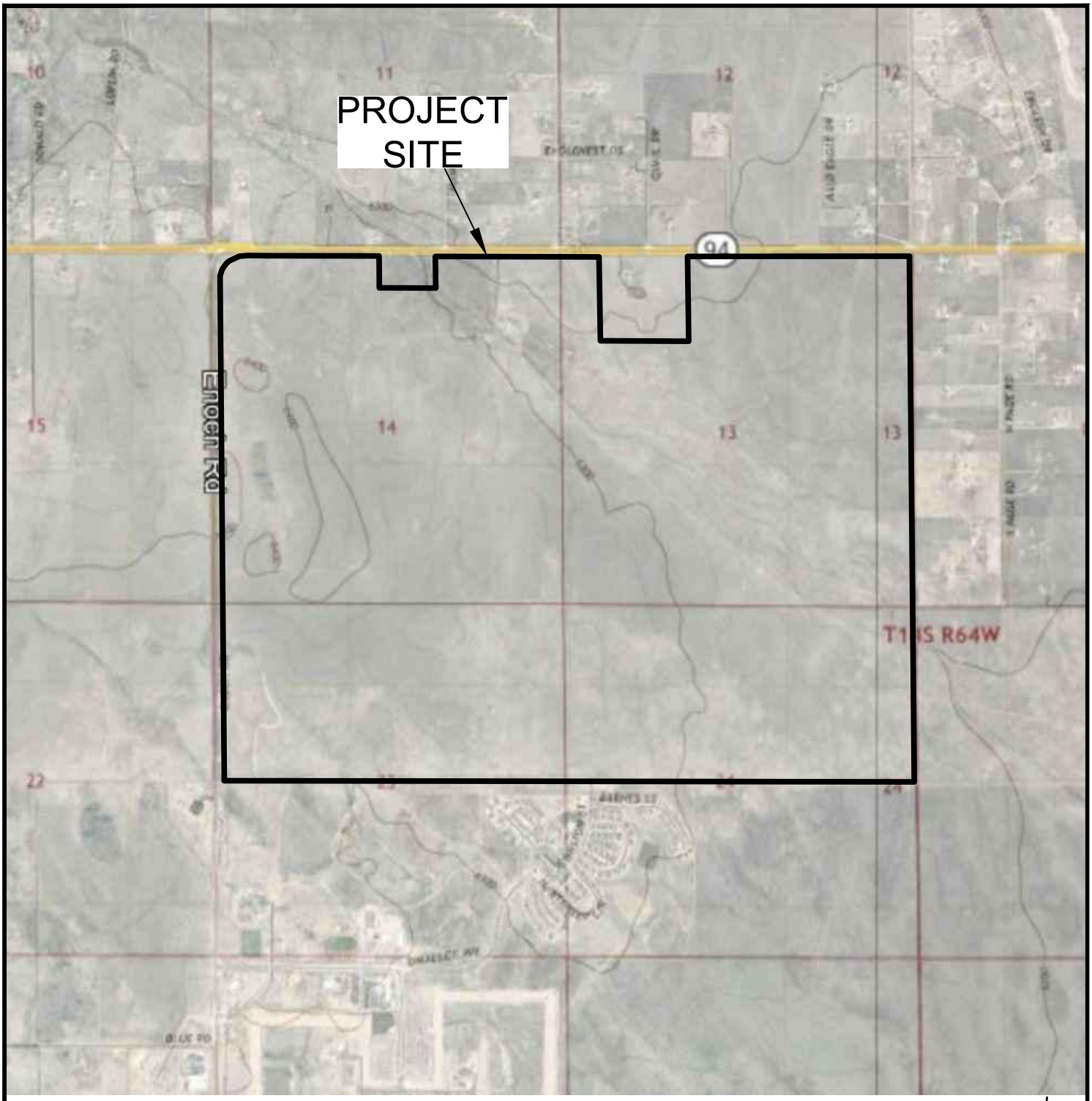
ENTECH ENGINEERING, INC.

VICINITY MAP

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO.
240074

FIG. 1



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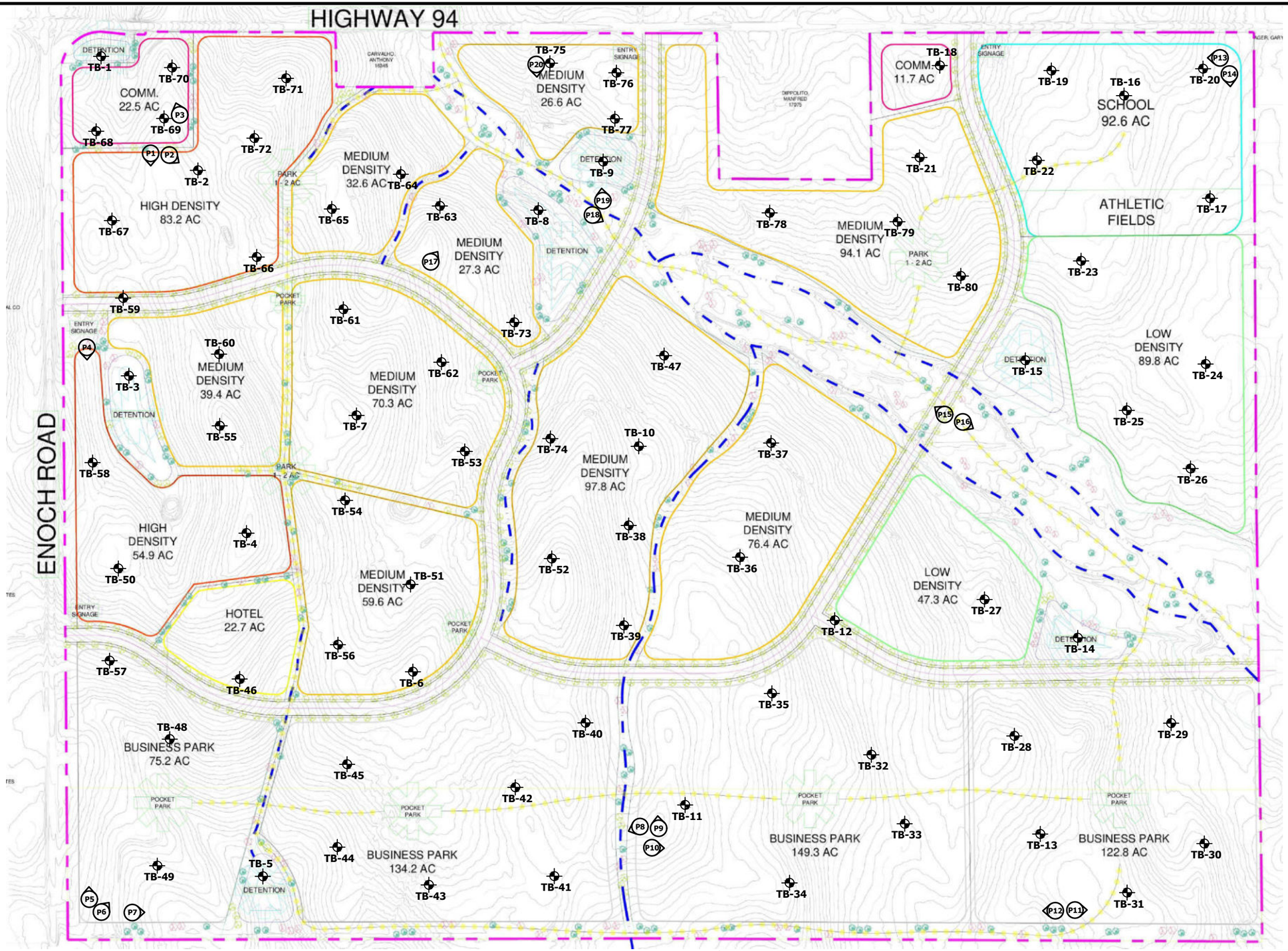
ENTECH ENGINEERING, INC.

USGS TOPOGRAPHY MAP

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO.
240074

FIG. 2



TB- APPROXIMATE TEST BORING LOCATION AND NUMBER

P2 - APPROXIMATE PHOTOGRAPH LOCATION AND NUMBER

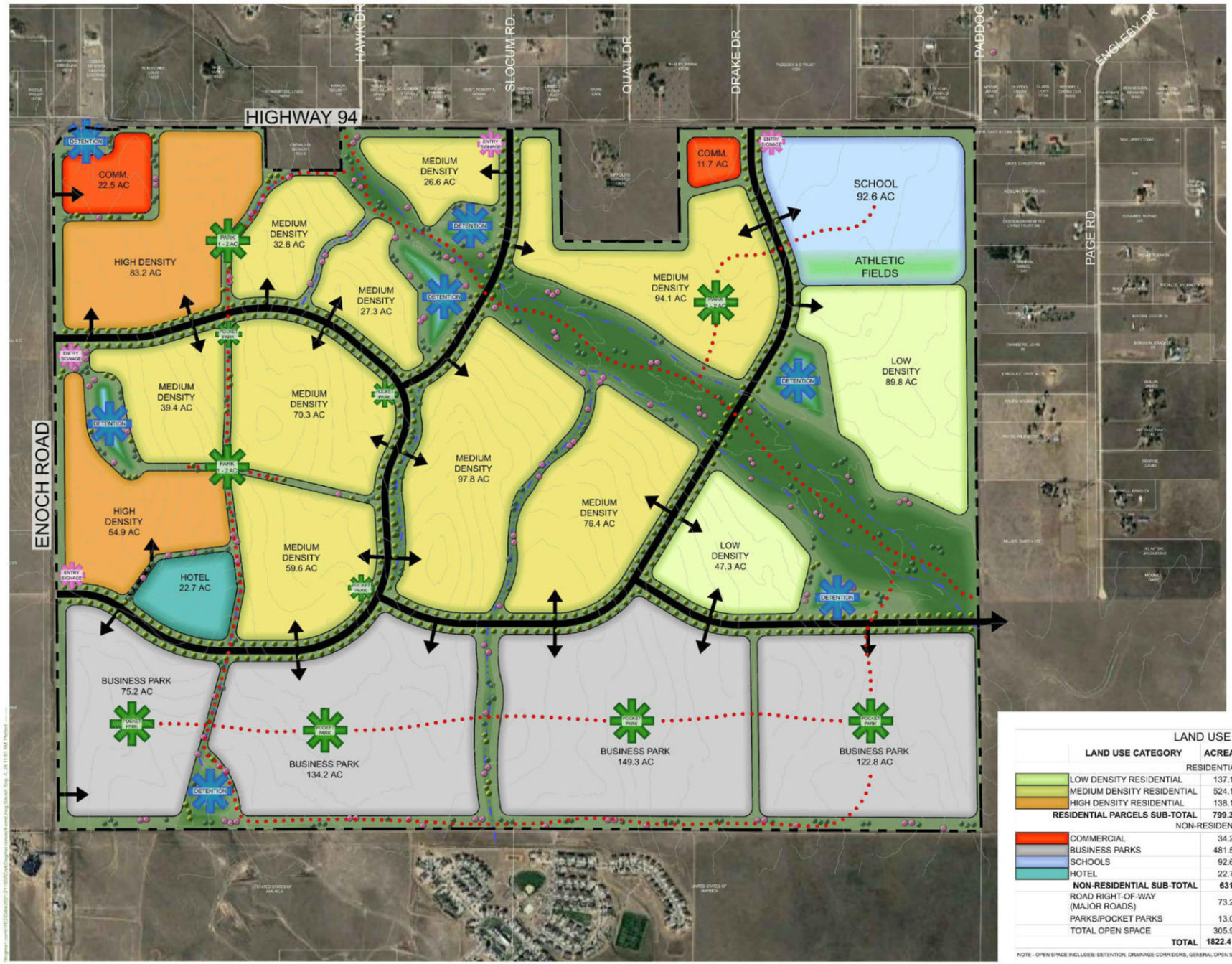
ENTECH ENGINEERING, INC.

SITE AND EXPLORATION PLAN

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO. 240074

FIG. 3



LAND USE SUMMARY

LAND USE CATEGORY	ACREAGE	SITE PERCENTAGE	DENSITY	UNIT RANGE
RESIDENTIAL PARCELS				
LOW DENSITY RESIDENTIAL	137.1 AC.	7.5%	1 - 3	137 - 411
MEDIUM DENSITY RESIDENTIAL	524.1 AC.	28.8%	3 - 5.5	1572 - 2883
HIGH DENSITY RESIDENTIAL	138.1 AC.	7.6%	5.5 - 14	759 - 1933
RESIDENTIAL PARCELS SUB-TOTAL	**799.3 AC.**	**43.9%**		2468 - 5227
NON-RESIDENTIAL PARCELS				
COMMERCIAL	34.2 AC.	1.9%		
BUSINESS PARKS	481.5 AC.	26.4%		
SCHOOLS	92.6 AC.	5.1%		
HOTEL	22.7 AC.	1.2%		
NON-RESIDENTIAL SUB-TOTAL	**631 AC.**	**34.6%**		
ROAD RIGHT-OF-WAY (MAJOR ROADS)	73.2 AC.	4.0%		
PARKS/POCKET PARKS	13.0 AC.	0.7%		
TOTAL OPEN SPACE	305.9 AC.	16.8%		
TOTAL	**1822.4 AC**	**100.0%**		2468 - 5227

NOTE - OPEN SPACE INCLUDES: DETENTION, DRAINAGE CORRIDORS, GENERAL OPEN SPACE, EASEMENTS AND LANDSCAPE BUFFERS.

BUBBLE PLAN

HRG

FLYING HORSE EAST

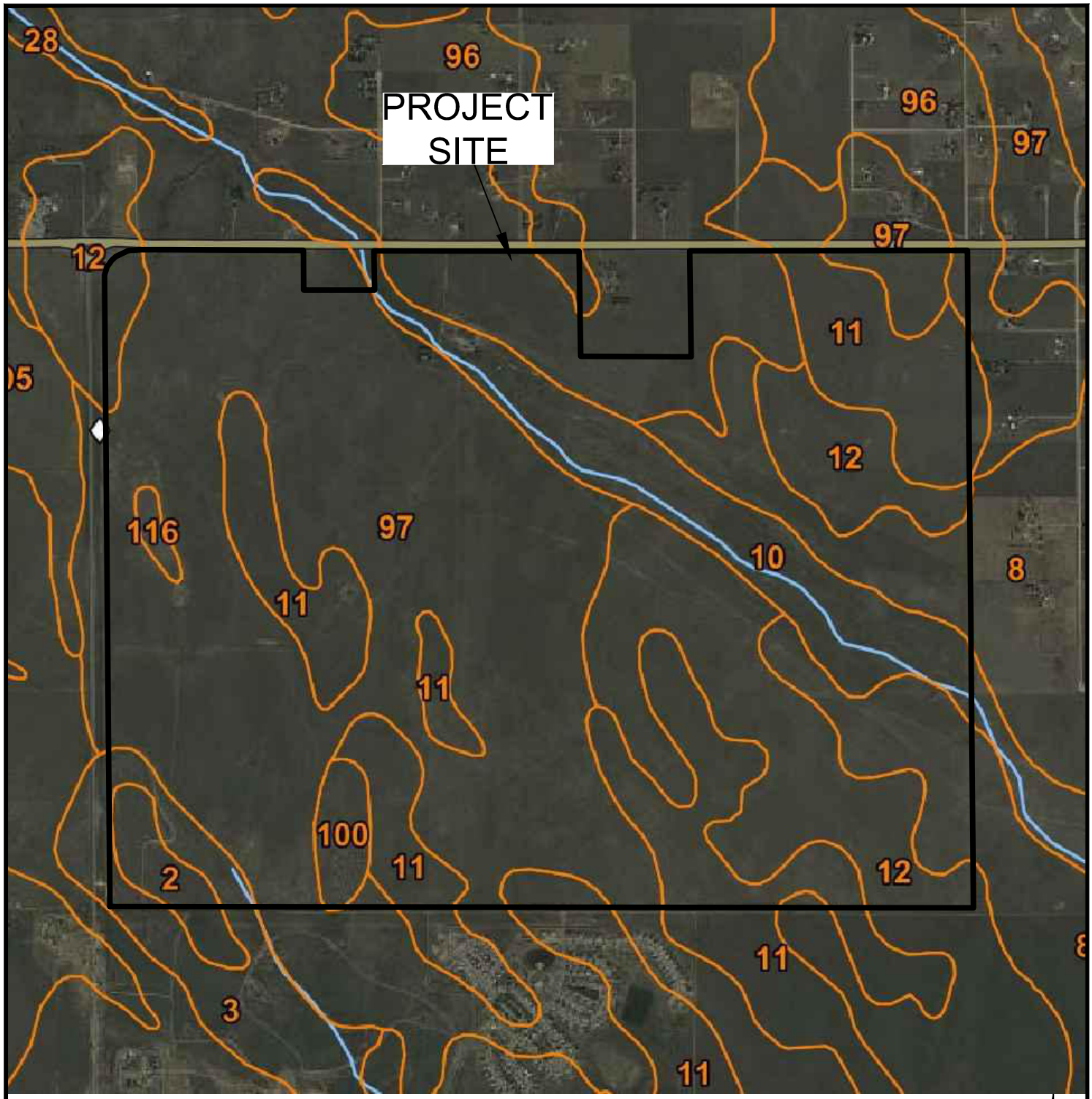
ENTECH ENGINEERING, INC.

SKETCH PLAN

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO. 240074

FIG. 4



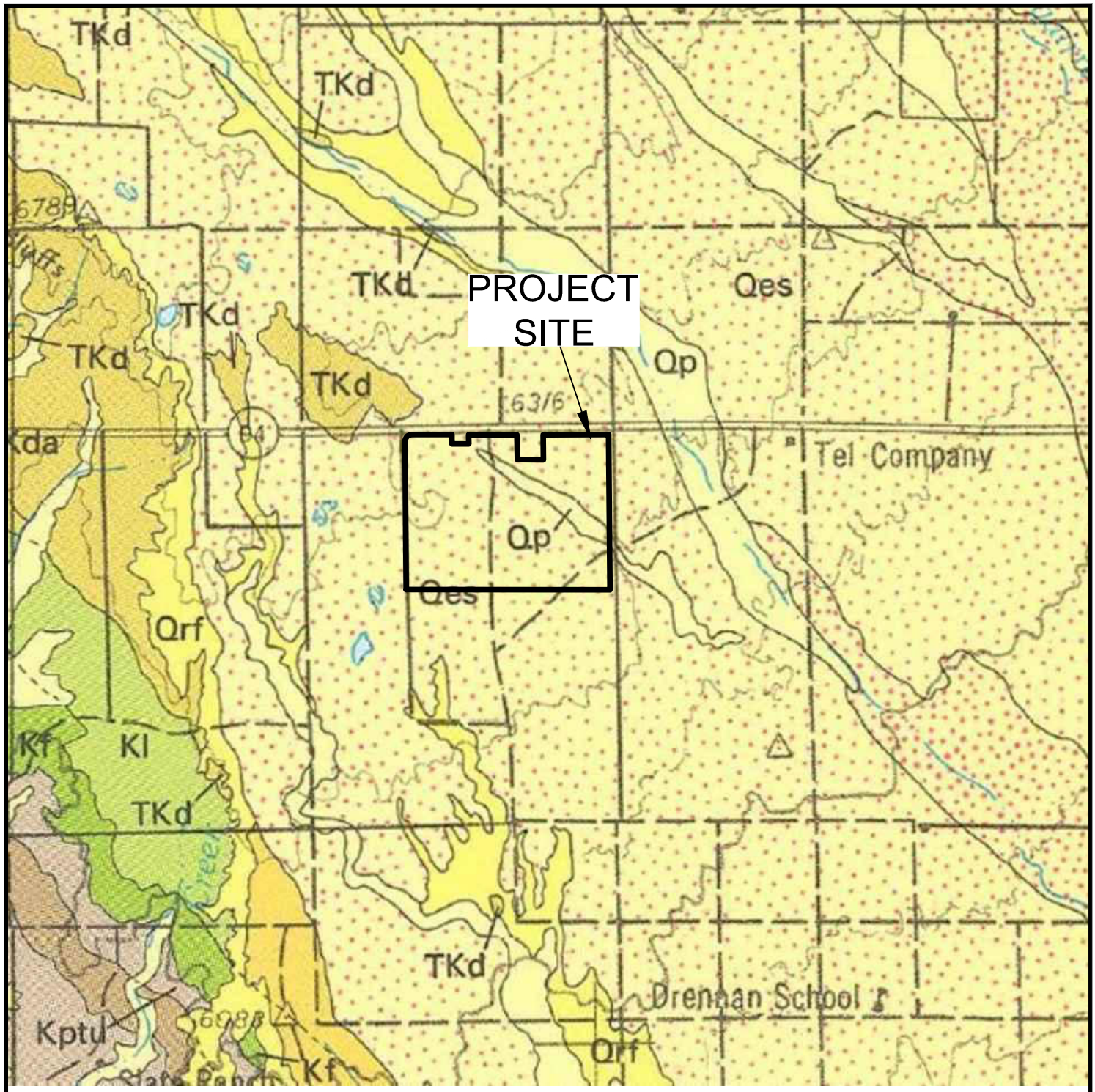
ENTECH ENGINEERING, INC.

SOIL SURVEY MAP

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO.
240074

FIG. 5



N

ENTECH ENGINEERING, INC.

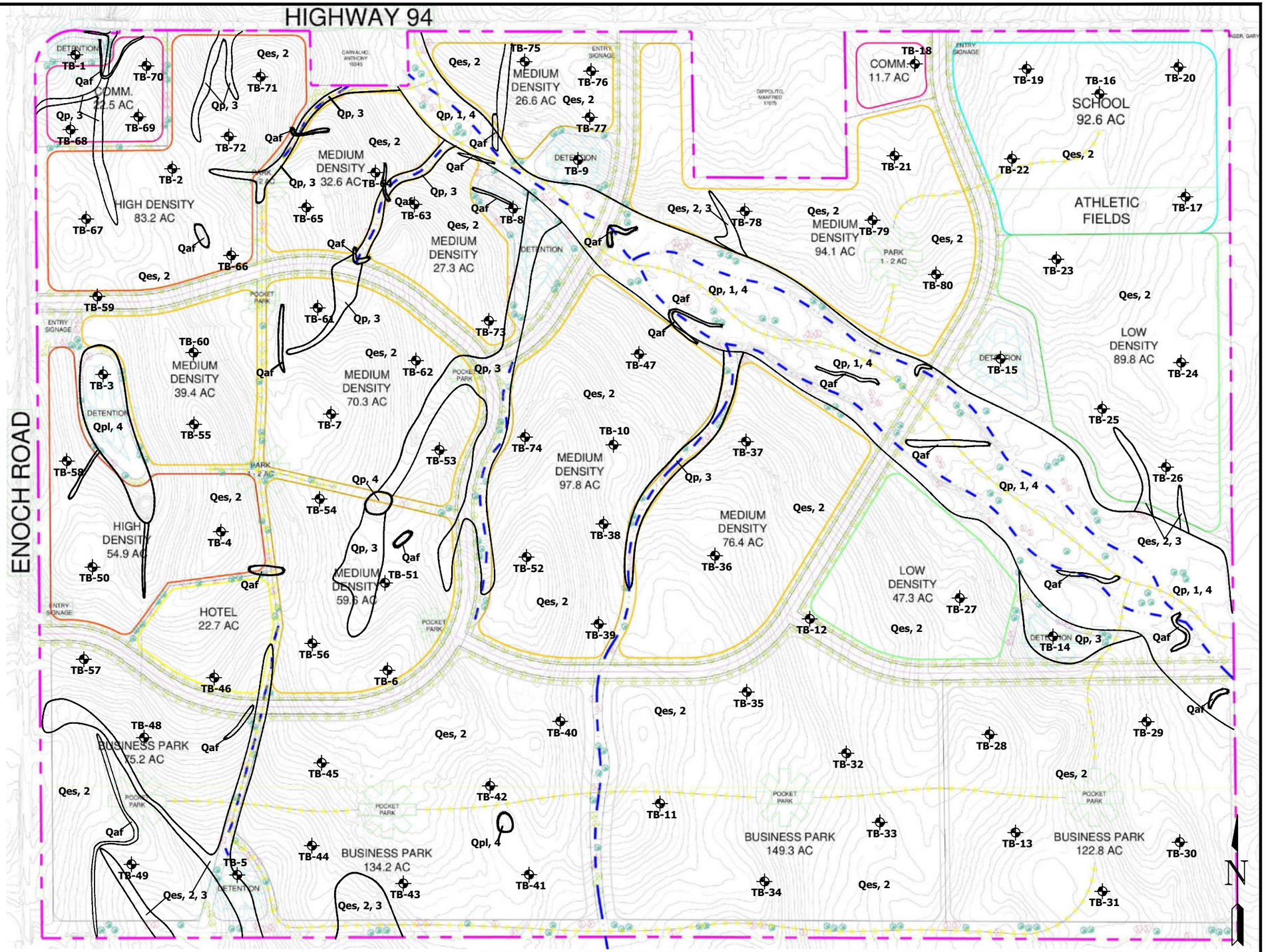
GEOLOGIC MAP OF THE PUEBLO 1°X2° QUAD SOUTH-CENTRAL CO

FLYING HORSE EAST - SKETCH PLAN

FLYING HORSE DEVELOPMENT, LLC

JOB NO. 240074

FIG. 6



Legend:

Qaf - Artificial Fill of Holocene Age:
man-placed fill deposits

Qp - Piney Creek Alluvium of Holocene Age:
water deposited sands and clays

Qpl - Playa Deposit of Holocene Age:
blowouts in eolian sand that form seasonal ponds

Qes - Eolian Sand of Holocene to late Pleistocene Age:
wind blown sand deposits

fp (1) - floodplain
h (2) - hydrocompaction
psw (3) - potential seasonally shallow groundwater area
sw (4) - seasonally shallow groundwater/seasonally ponded water

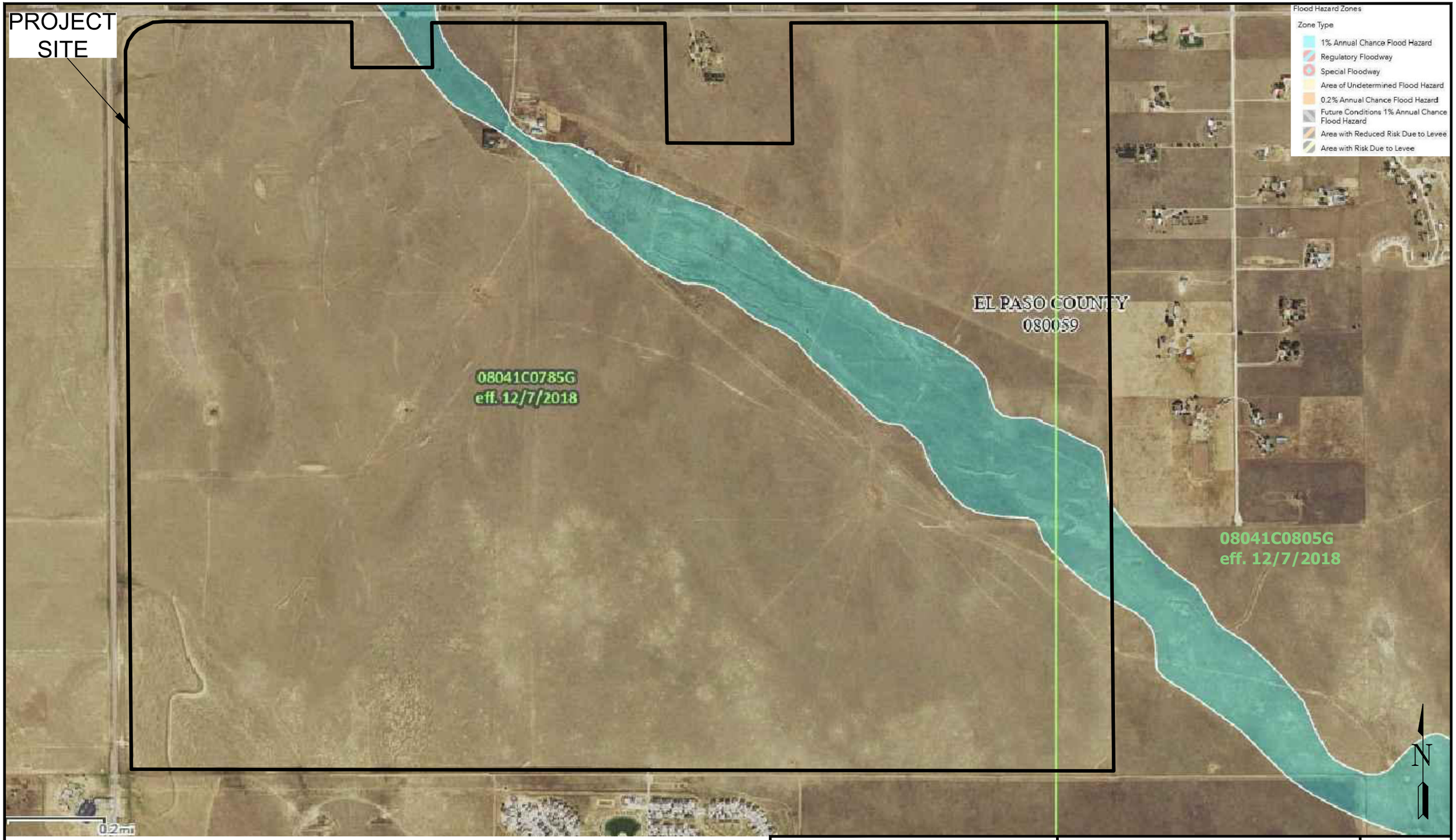
ENTECH ENGINEERING, INC.

GEOLOGY / ENGINEERING MAP

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO.
240074

FIG. 7



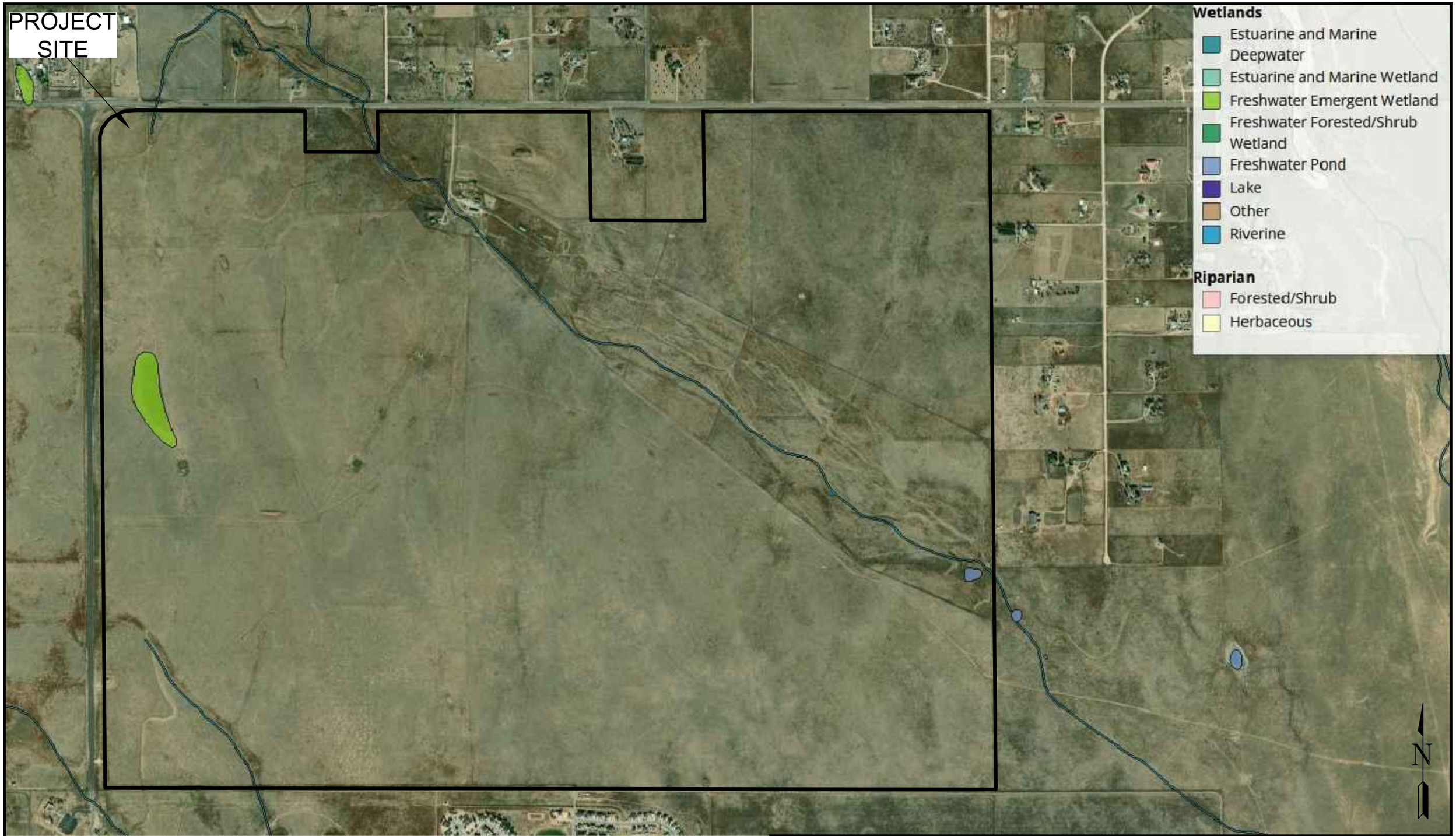
ENTECH ENGINEERING, INC.

FEMA FLOODPLAIN MAP

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO. 240074

FIG. 8



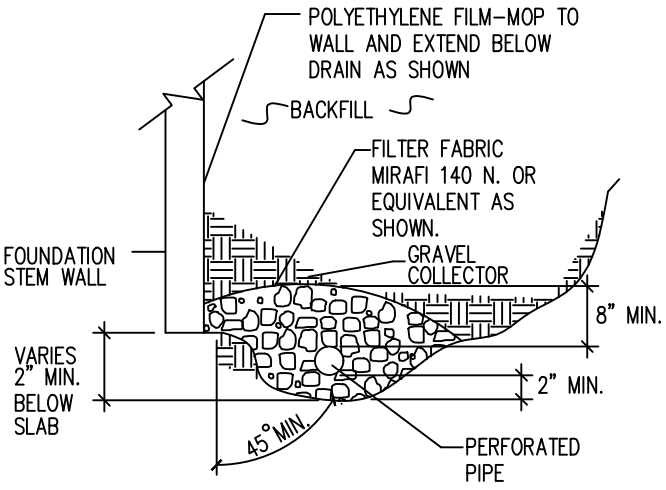
ENTECH ENGINEERING, INC.

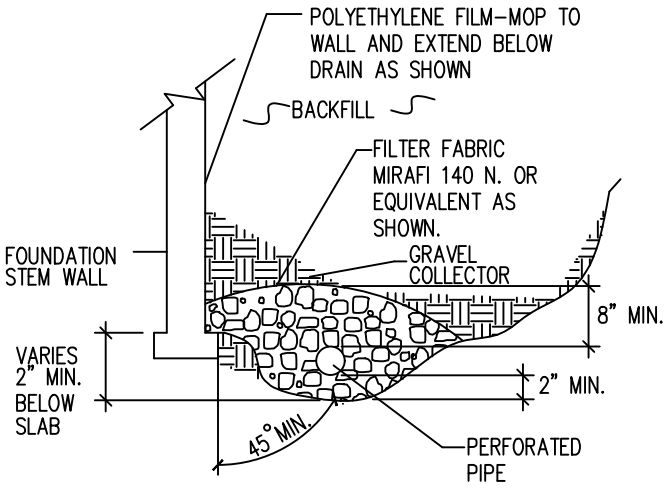
USFWS WETLANDS MAP

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO. 240074

FIG. 9





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.

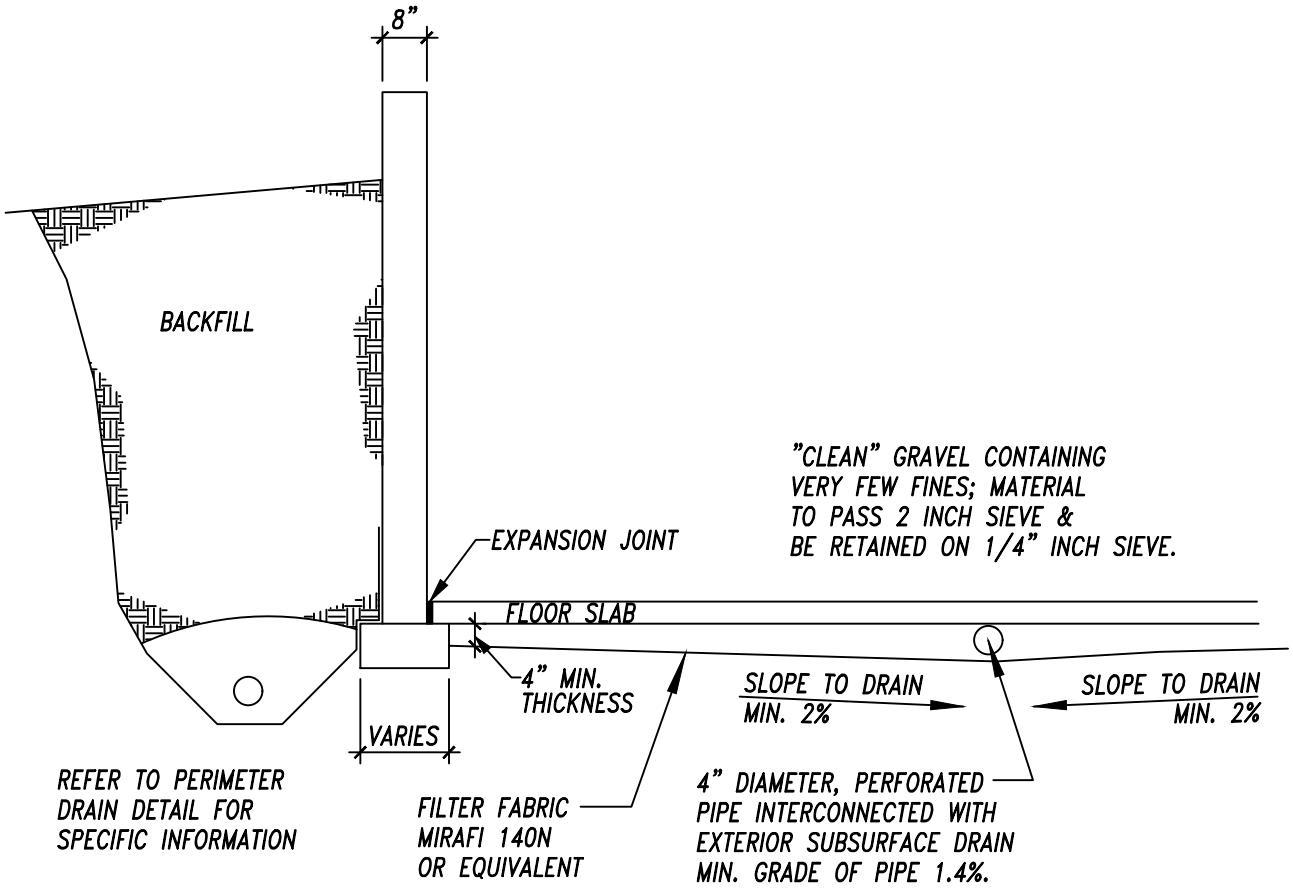
ENTECH ENGINEERING, INC.

PERIMETER DRAIN DETAIL

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO. 240074

FIG. 10



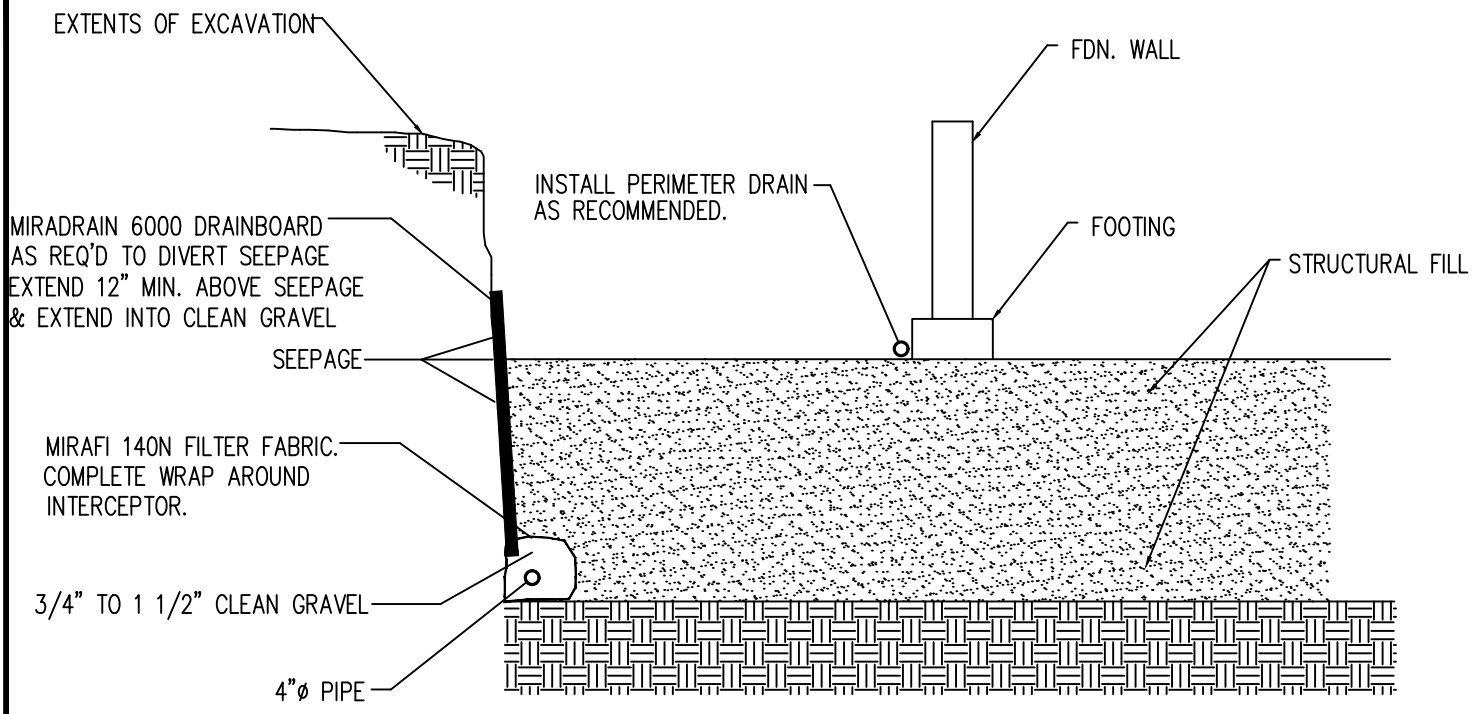
ENTECH ENGINEERING, INC.

TYP. UNDERSLAB DRAINAGE LAYER (CAPILLARY BREAK)

FLYING HORSE EAST - STECH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO.
241421

FIG. 11



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

INTERCEPTOR DRAIN DETAIL

N.T.S.

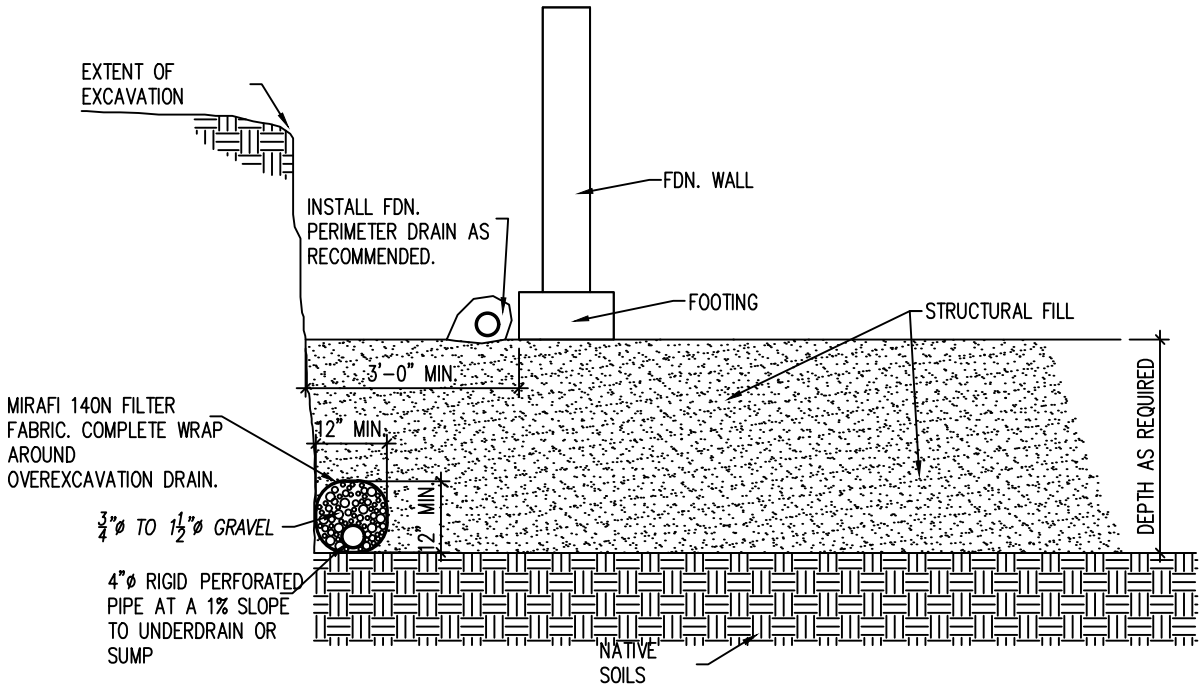
ENTECH ENGINEERING, INC.

INTERCEPTOR DRAIN DETAIL

FLYING HORSE EAST - SKETCH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO.
241421

FIG. 12



OVEREXCAVATION DRAIN DETAIL

N.T.S.

NOTE:

EXTEND DRAIN TO SUMP AS REQ'D.

ENTECH ENGINEERING, INC.

OVEREXCAVATION DRAIN

FLYING HORSE EAST - SKTECH PLAN
FLYING HORSE DEVELOPMENT, LLC

JOB NO. 240074

FIG. 13

APPENDIX A: Site Photographs

1

Looking south from the northwestern portion of the site.

November 5, 2024

2

Looking east from the northwestern portion of the site.

November 5, 2024

Job No. 240074

3

Looking north towards drainage in northwestern portion of the site.

November 5, 2024

4

Looking south from the western portion of the site.

November 5, 2024

Job No. 240074

5

Looking north from the southwestern portion of the site.

November 5, 2024

6

Looking northeast from the southwestern portion of the site.

November 5, 2024

Job No. 240074

7

Looking east from the southwestern portion of the site.

November 5, 2024

8

Looking west from the southern portion of the site.

November 5, 2024

Job No. 240074

9

Looking north from the southern portion of the site.

November 5, 2024

10

Looking east from the southern portion of the site.

September 19, 2024

Job No. 240074

11

Looking east from the southeastern portion of the site.

September 19, 2024

12

Looking west from the southeastern portion of the site.

September 19, 2024

Job No. 240074

13

Looking east from the northeastern portion of the site.

November 5, 2024

14

Looking south from the northeastern portion of the site.

November 5, 2024

Job No. 240074

15

Looking west along drainage in the east-central portion of the site.

November 5, 2024

16

Looking east along drainage in the east-central portion of the site.

November 5, 2024

Job No. 240074

17

Looking northeast from the northern portion of the site.

November 26, 2024

18

Looking east along drainage northern portion of the site.

November 26, 2024

Job No. 240074

19

Looking north from the northern portion of the site.

November 26, 2024

20

Looking south from the existing driveway northern side of the site.

November 26, 2024

Job No. 240074

APPENDIX B: Test Boring Logs

ENTECH ENGINEERING, INC.

TABLE B-1

DEPTH TO GROUNDWATER & BEDROCK

TEST BORING	DEPTH TO GROUNDWATER (ft.)	DEPTH TO BEDROCK (ft.)
1	>20	>20
2	>20	>20
3	18.5	19
4	>20	>20
5	>20	>20
6	>20	>20
7	>20	>20
8	>20	>20
9	>20	>20
10	>20	>20
11	>20	>20
12	>20	18
13	>20	>20
14	>20	>20
15	>20	>20
16	>20	>20
17	>20	>20
18	>20	>20
19	>20	>20
20	>20	>20
21	>20	>20
22	>20	>20
23	>20	>20
24	>20	>20
25	>20	>20
26	>20	>20
27	>20	>20
28	>20	>20
29	>20	>20
30	>20	>20
31	>20	>20
32	>20	>20
33	>20	>20
34	>20	>20
35	>20	>20
36	>20	>20

TEST BORING	DEPTH TO GROUNDWATER (ft.)	DEPTH TO BEDROCK (ft.)
37	>20	>20
38	>20	>20
39	>20	>20
40	>20	>20
41	>20	>20
42	>20	>20
43	>20	>20
44	>20	>20
45	>20	>20
46	>20	>20
47	>20	>20
48	>20	18
49	>20	>20
50	>20	>20
51	>20	>20
52	>20	>20
53	>20	18
54	>20	>20
55	>20	>20
56	>20	>20
57	>20	>20
58	>20	>20
59	>20	>20
60	>20	>20
61	>20	>20
62	>20	14
63	>20	>20
64	>20	14
65	>20	>20
66	>20	>20
67	>20	18
68	>20	>20
69	>20	18
70	>20	>20
71	>20	>20
72	>20	>20

Project: Flying Horse East
Client: Flying Horse Development
Job No: 240074

TABLE B-1

DEPTH TO GROUNDWATER & BEDROCK

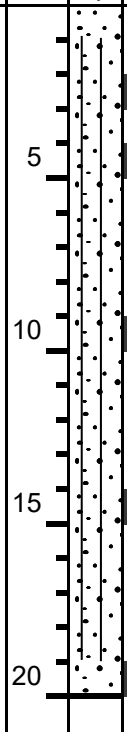
TEST BORING	DEPTH TO GROUNDWATER (ft.)	DEPTH TO BEDROCK (ft.)
73	>20	>20
74	>20	18
75	>20	>20
76	>20	>20
77	>20	>20
78	>20	>20
79	>20	>20
80	>20	>20

TEST BORING 1
DATE DRILLED 11/18/2024

REMARKS

DRY TO 20', 12/4/24

SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to LOOSE, MOIST



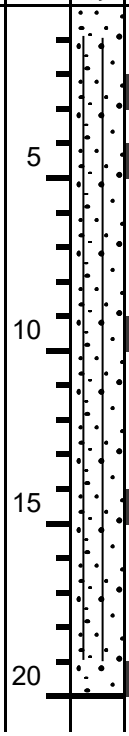
Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			16	5.5	1
5			8	8.6	1
10			19	4.4	1
15			8	6.7	1
20			11	8.8	1

TEST BORING 2
DATE DRILLED 11/15/2024

REMARKS

DRY TO 20', 12/4/24

SAND, SILTY, LIGHT BROWN to BROWN, DENSE to MEDIUM DENSE, MOIST



Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			46	4.6	1
5			40	5.3	1
10			38	4.2	1
15			25	4.4	1
20			30	6.7	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-1

TEST BORING 3
DATE DRILLED 11/18/2024

REMARKS

WATER @ 18.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			13	6.4	1
5			12	21.7	2
10			35	26.6	2
15			44	22.3	2
20			50/2"	16.1	3

SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST

CLAY, WITH SAND, GRAY to OLIVE, STIFF to HARD, MOIST

SANDSTONE, VERY WEAK, BROWN, MODERATELY WEATHERED (SAND, CLAYEY, VERY DENSE, MOIST)

TEST BORING 4
DATE DRILLED 11/15/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			19	4.7	1
5			13	6.8	1
10			12	5.4	1
15			14	3.9	1
20			17	4.2	1

6" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-2

TEST BORING 5
DATE DRILLED 11/15/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			19	4.7	1
5			14	5.8	1
10			17	1.8	1
15			19	3.2	1
20			15	13.1	1

6" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST to DRY

TEST BORING 6
DATE DRILLED 11/15/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			13	3.6	1
5			10	5.3	1
10			15	4.4	1
15			9	5.9	1
20			10	8.0	1

6" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to LOOSE, MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-3

TEST BORING 7
DATE DRILLED 11/15/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			14	3.3	1	12" TOPSOIL SAND, SILTY, BROWN, MEDIUM DENSE, MOIST
5			8	8.3	2	CLAY, SANDY, BROWN, STIFF, MOIST
10			27	5.1	1	SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to DENSE, MOIST
15			33	4.1	1	
20			18	5.8	1	

TEST BORING 8
DATE DRILLED 11/15/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			10	5.2	1	12" TOPSOIL SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST
5			14	4.9	1	
10			13	3.9	1	
15			27	3.1	1	
20			24	9.1	2	CLAY, SANDY, BROWN, VERY STIFF, MOIST

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-4

TEST BORING 9
DATE DRILLED 11/15/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			19	3.6	1
5			20	4.1	1
10			25	6.8	1
15			19	2.2	1
20			17	6.7	1

12" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST to DRY

TEST BORING 10
DATE DRILLED 11/18/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			16	4.9	1
5			14	2.9	1
10			9	4.9	1
15			8	7.5	1
20			9	6.4	1

12" TOPSOIL
SAND, WITH SILT, BROWN to TAN, MEDIUM DENSE to LOOSE, DRY to MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-5

TEST BORING 11
DATE DRILLED 11/18/2024

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 12/4/24						
6" TOPSOIL SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST				14	3.2	1
	5			20	4.5	1
	10			12	4.8	1
	15			12	3.8	1
	20			17	3.4	1

TEST BORING 12
DATE DRILLED 11/18/2024

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 12/4/24						
6" TOPSOIL SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to LOOSE, DRY to MOIST				14	2.6	1
	5			13	2.7	1
	10			9	5.6	1
	15			19	5.8	1
SILTSTONE, VERY WEAK, BROWN, HIGHLY WEATHERED (SILT, SANDY, HARD, MOIST)	20			50/11"	16.6	4

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-6

TEST BORING 13
DATE DRILLED 11/18/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						6" TOPSOIL SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to LOOSE, DRY to MOIST
			15	2.5	1	
5			10	3.0	1	
10			13	3.8	1	
15			6	4.0	1	
20			9	5.2	1	

TEST BORING 14
DATE DRILLED 11/18/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, SILTY, DARK BROWN to BROWN, MEDIUM DENSE, MOIST
			14	3.0	1	
5			11	4.2	1	
10			10	15.5	1	SAND, CLAYEY, DARK BROWN, MEDIUM DENSE, MOIST SAND, SILTY, LIGHT BROWN, MEDIUM DENSE, MOIST
15			16	5.6	1	
20			20	3.5	1	

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-7

TEST BORING 15
DATE DRILLED 11/18/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, WITH SILT, LIGHT BROWN to BROWN, MEDIUM DENSE to DENSE, DRY to MOIST		20	1.7	1
5			12	2.7	1
10			40	2.7	1
15			26	6.5	1
20			16	9.2	1

TEST BORING 16
DATE DRILLED 11/18/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	CLAY, WITH SAND, BROWN, VERY STIFF, MOIST		16	6.8	2
5	SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to DENSE, DRY to MOIST		27	2.0	1
10			39	5.8	1
15			24	2.9	1
20			12	6.3	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-8

TEST BORING 17
DATE DRILLED 11/19/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			19	2.9	1
5			22	2.2	1
10			22	2.2	1
15			17	3.5	1
20			20	9.7	1

6" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, DRY to MOIST

TEST BORING 18
DATE DRILLED 11/19/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			21	3.6	1
5			8	1.6	1
10			11	2.2	1
15			12	4.7	1
20			10	2.7	1

12" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to LOOSE, DRY to MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-9

TEST BORING 19
DATE DRILLED 11/19/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	6" TOPSOIL SAND, WITH SILT, LIGHT BROWN to BROWN, MEDIUM DENSE, DRY to MOIST		23	2.8	1
5			26	2.4	1
10			28	1.6	1
15			23	2.4	1
20	SAND, CLAYEY, BROWN, LOOSE, MOIST		8	15.9	1

TEST BORING 20
DATE DRILLED 11/19/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	12" TOPSOIL SAND, SILTY, LIGHT BROWN to BROWN, LOOSE to DENSE, DRY to MOIST		19	2.7	1
5			9	2.4	1
10			18	1.5	1
15			11	5.8	1
20			36	2.1	1

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-10

TEST BORING 21
DATE DRILLED 11/19/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			16	5.1	1
5			19	2.0	1
10			33	3.7	1
15			19	2.6	1
20			36	1.6	1

6" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to DENSE, DRY to MOIST

TEST BORING 22
DATE DRILLED 11/19/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			19	5.8	2
5			18	7.3	2
10			37	2.8	1
15			24	3.2	1
20			11	4.2	1

12" TOPSOIL
CLAY, SANDY, DARK BROWN, VERY STIFF, MOIST

SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to DENSE, DRY to MOIST

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-11

TEST BORING 23
DATE DRILLED 11/19/2024

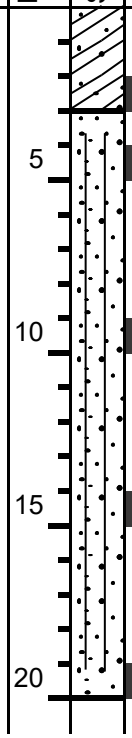
REMARKS

DRY TO 18.5', 12/4/24

12" TOPSOIL

CLAY, WITH SAND, BROWN, VERY STIFF, MOIST

SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to DENSE, DRY to MOIST



Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			20	6.9	2
5			13	3.1	1
10			17	3.4	1
15			27	2.6	1
20			13	6.2	1

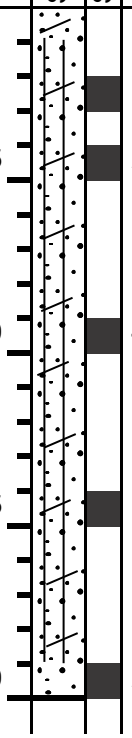
TEST BORING 24
DATE DRILLED 11/26/2024

REMARKS

DRY TO 19', 12/4/24

24" TOPSOIL

SAND, CLAYEY-SILTY, TAN, MEDIUM DENSE to DENSE, DRY to MOIST



Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			12	1.6	1
5			25	1.9	1
10			40	3.7	1
15			13	6.6	1
20			26	7.4	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-12

TEST BORING 25
DATE DRILLED 11/26/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			15	4.4	1
5			21	2.4	1
			25	1.6	1
10					
			34	1.5	1
15					
			35	5.9	1
20					

24" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to DENSE, MOIST to DRY

TEST BORING 26
DATE DRILLED 11/26/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			30	1.8	1
5			13	2.8	1
			14	3.6	1
10					
			30	6.2	1
15					
			36	3.2	1
20					

24" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to DENSE, DRY to MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

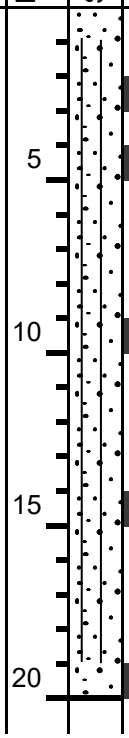
FIG. B-13

TEST BORING 27
DATE DRILLED 11/26/2024

REMARKS

DRY TO 20', 12/4/24

6" TOPSOIL
SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST



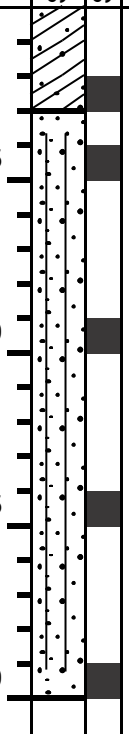
Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			12	5.3	1
5			11	4.3	1
10			11	3.3	1
15			27	8.0	1
20			28	15.2	1

TEST BORING 28
DATE DRILLED 11/26/2024

REMARKS

DRY TO 20', 12/4/24

18" TOPSOIL
CLAY, SANDY, BROWN, STIFF, MOIST
SAND, SILTY, BROWN to TAN, MEDIUM DENSE, MOIST to DRY



Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			15	7.8	2
5			15	7.5	1
10			14	2.7	1
15			17	3.5	1
20			18	5.6	1

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

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FIG. B-14

TEST BORING 29
DATE DRILLED 11/26/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	6" TOPSOIL SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, DRY to MOIST		11	3.7	1
5			10	3.9	1
10			11	4.3	1
15			18	1.7	1
20			22	7.0	1

TEST BORING 30
DATE DRILLED 11/26/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	6" TOPSOIL SAND, SILTY, TAN, MEDIUM DENSE to LOOSE, MOIST		13	3.7	1
5			10	3.1	1
10			5	6.4	1
15			19	4.1	1
20			13	5.7	1

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-15

TEST BORING 31
DATE DRILLED 11/26/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			15	9.5	1
5			10	12.9	1
10			8	7.8	1
15			24	11.6	1
20			27	10.1	1

12" TOPSOIL

SAND, CLAYEY-SILTY, BROWN, MEDIUM DENSE, MOIST

SAND, SILTY, TAN, LOOSE to MEDIUM DENSE, MOIST

TEST BORING 32
DATE DRILLED 11/25/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			11	6.8	1
5			11	3.5	1
10			20	4.3	1
15			27	23.7	2
20			37	27.4	2

SAND, SILTY, LIGHT BROWN, MEDIUM DENSE, MOIST

SILT, SANDY, GRAY, VERY STIFF to HARD, MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

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FIG. B-16

TEST BORING 33
DATE DRILLED 11/25/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	Description
			14	3.5	1	SAND, SILTY, LIGHT BROWN to BROWN, LOOSE to DENSE, MOIST to DRY
5			8	3.8	1	
10			30	2.6	1	
15			30	11.9	1	
20			33	10.8	1	

TEST BORING 34
DATE DRILLED 11/25/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	Description
			15	2.5	1	SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to LOOSE, DRY to MOIST
5			7	3.6	1	
10			9	6.8	1	
15			11	3.7	1	
20			9	4.3	1	

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

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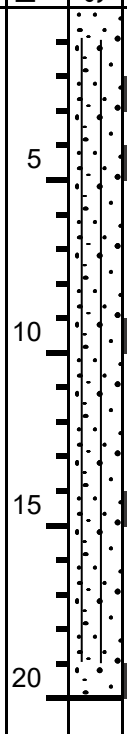
FIG. B-17

TEST BORING 35
DATE DRILLED 11/25/2024

REMARKS

DRY TO 20', 12/4/24

SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to DENSE, MOIST



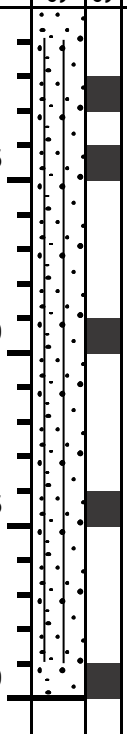
Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			18	3.7	1
5			12	3.8	1
10			13	4.2	1
15			18	4.7	1
20			44	3.4	1

TEST BORING 36
DATE DRILLED 11/25/2024

REMARKS

DRY TO 20', 12/4/24

SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to LOOSE, MOIST to VERY MOIST



Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			16	3.7	1
5			12	4.2	1
10			6	5.7	1
15			15	15.6	1
20			18	14.3	1

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

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FIG. B-18

TEST BORING 37
DATE DRILLED 11/25/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			13	5.8	1	SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to LOOSE, MOIST to DRY
5			9	3.4	1	
10			8	4.4	1	
15			10	6.4	1	
20			20	2.1	1	

TEST BORING 38
DATE DRILLED 11/25/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			15	2.5	1	SAND, SILTY, TAN, MEDIUM DENSE, DRY to MOIST
5			11	3.8	1	
10			19	3.4	1	
15			11	27.1	2	CLAY, SLIGHTLY SANDY, GRAY, STIFF to VERY STIFF, MOIST
20			24	22.4	2	

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

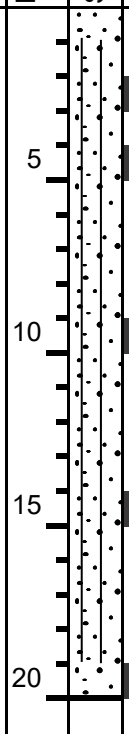
FIG. B-19

TEST BORING 39
DATE DRILLED 11/25/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, WITH SILT, LIGHT BROWN to BROWN, LOOSE to DENSE, MOIST		15	9.3	1
5			9	8.4	1
10			27	3.3	1
15			22	5.2	1
20			32	5.9	1

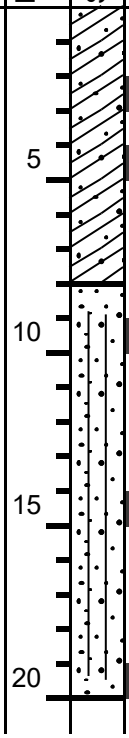


TEST BORING 40
DATE DRILLED 11/26/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	6" TOPSOIL CLAY, SANDY, BROWN, STIFF, MOIST		13	5.0	2
5			12	15.3	2
10	SAND, SILTY, TAN, DENSE, MOIST		31	4.1	1
15			44	3.3	1
20			35	5.2	1



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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-20

TEST BORING 41
DATE DRILLED 11/26/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	CLAY, SANDY, BROWN, VERY STIFF, MOIST		19	6.8	2
	SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST to DRY		12	5.2	1
5					
			18	4.8	1
10					
			15	3.1	1
15					
			14	2.8	1
20					

TEST BORING 42
DATE DRILLED 12/2/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	CLAY, SANDY, BROWN, VERY STIFF, MOIST		16	4.9	2
	SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST		14	6.3	1
5					
			20	4.2	1
10					
			18	4.8	1
15					
			18	3.0	1
20					

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

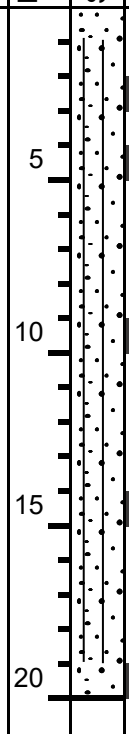
FIG. B-21

TEST BORING 43
DATE DRILLED 12/2/2024

REMARKS

DRY TO 19.5', 12/4/24

SAND, SILTY, BROWN, MEDIUM DENSE to DENSE, MOIST



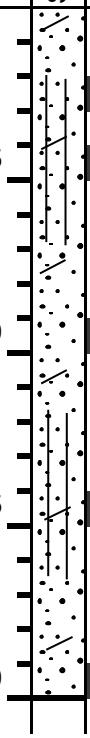
Depth (ft)	Blows per foot	Watercontent %	Soil Type
	14	3.1	1
5	11	8.9	1
10	11	9.6	1
15	10	4.5	1
20	44	3.2	1

TEST BORING 44
DATE DRILLED 12/2/2024

REMARKS

DRY TO 20', 12/4/24

SAND, WITH CLAY and SILT, BROWN, MEDIUM DENSE to DENSE, MOIST



Depth (ft)	Blows per foot	Watercontent %	Soil Type
	17	4.2	1
5	15	4.1	1
10	18	4.3	1
15	29	7.9	1
20	36	3.6	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

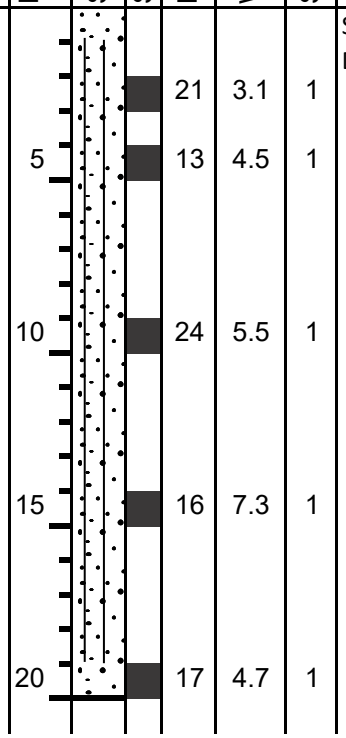
JOB NO. 240074

FIG. B-22

TEST BORING 45
DATE DRILLED 12/2/2024

REMARKS

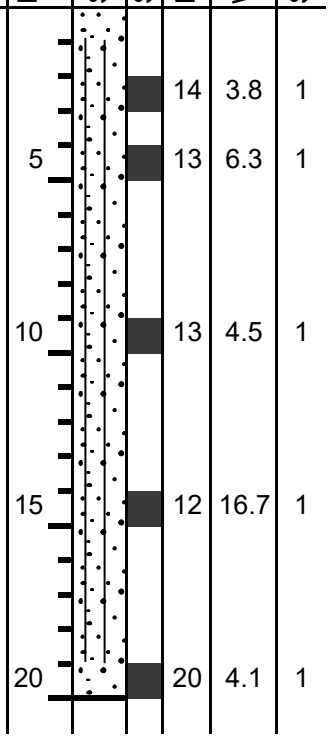
DRY TO 20', 12/4/24



TEST BORING 46
DATE DRILLED 12/3/2024

REMARKS

DRY TO 20', 12/4/24



ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-23

TEST BORING 47
DATE DRILLED 12/2/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			15	3.6	1	SAND, SILTY, BROWN, MEDIUM DENSE, MOIST to DRY
5			16	4.6	1	
10			18	6.0	1	
15			29	2.4	1	
20			25	4.9	1	

TEST BORING 48
DATE DRILLED 12/3/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			16	2.8	1	SAND, SILTY, LIGHT BROWN to TAN, MEDIUM DENSE to LOOSE, DRY to MOIST
5			13	3.2	1	
10			7	4.5	1	
15			14	26.3	1	SAND, CLAYEY, TAN, MEDIUM DENSE, MOIST
20			50	18.2	4	SILTSTONE, EXTREMELY WEAK, TAN, HIGHLY WEATHERED (SILT, SLIGHTLY SANDY, HARD, MOIST)

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-24

TEST BORING 49
DATE DRILLED 12/2/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, SILTY, DARK BROWN, MEDIUM DENSE, MOIST		22	6.9	1
5			15	8.3	1
10	CLAY, WITH SAND, DARK BROWN, VERY STIFF to HARD, MOIST		19	9.2	2
15			18	15.7	2
20			38	12.1	2

TEST BORING 50
DATE DRILLED 12/2/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, SILTY, BROWN, LOOSE to MEDIUM DENSE, DRY to MOIST		9	4.0	1
5			11	2.3	1
10			9	2.9	1
15			9	11.9	1
20			13	5.9	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-25

TEST BORING 51
DATE DRILLED 12/3/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			17	5.5	2
5			12	7.4	2
10			18	3.2	1
15			20	4.7	1
20			32	5.2	1

CLAY, SANDY, BROWN, VERY STIFF to STIFF, MOIST

SAND, SILTY, TAN, MEDIUM DENSE to DENSE, MOIST

TEST BORING 52
DATE DRILLED 12/3/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			10	2.9	1
5			9	4.5	1
10			7	4.1	1
15			10	3.5	1
20			10	3.7	1

SAND, SILTY, BROWN, MEDIUM DENSE to LOOSE, DRY to MOIST

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-26

TEST BORING 53
DATE DRILLED 11/27/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
SAND, SILTY, BROWN, MEDIUM DENSE to LOOSE, DRY to MOIST			19	2.8	1
5			11	5.1	1
10			29	5.0	1
SILT, SANDY, GRAY, HARD, MOIST 15			38	22.4	2
SILTSTONE, VERY WEAK, GRAY, WEATHERED (SILT, SANDY, HARD, MOIST) 20			50/11"	21.2	4

TEST BORING 54
DATE DRILLED 11/27/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
6" TOPSOIL SAND, SILTY, BROWN, MEDIUM DENSE to DENSE, DRY to MOIST			19	7.0	1
5			24	2.7	1
10			15	3.2	1
15			38	4.3	1
20			40	3.9	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-27

TEST BORING 55
DATE DRILLED 11/27/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			18	3.4	1
5			15	5.7	1
10			24	4.6	1
15			20	4.1	1
20			15	5.8	1

12" TOPSOIL

SAND, SILTY, TAN, MEDIUM DENSE, MOIST

TEST BORING 56
DATE DRILLED 12/3/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			10	8.4	2
5			13	7.8	2
10			21	2.9	1
15			21	3.2	1
20			37	3.7	1

CLAY, SANDY, BROWN, VERY STIFF to STIFF, MOIST

SAND, SILTY, TAN, MEDIUM DENSE to DENSE, DRY to MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

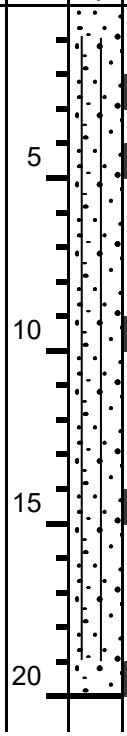
FIG. B-28

TEST BORING 57
DATE DRILLED 12/2/2024

REMARKS

DRY TO 20', 12/4/24

SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST



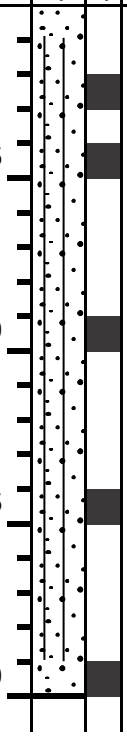
Depth (ft)	Blows per foot	Watercontent %	Soil Type
	16	5.1	1
5	13	5.0	1
10	29	5.3	1
15	17	6.0	1
20	12	8.6	1

TEST BORING 58
DATE DRILLED 12/2/2024

REMARKS

DRY TO 20', 12/4/24

SAND, SILTY, BROWN, MEDIUM DENSE, MOIST



Depth (ft)	Blows per foot	Watercontent %	Soil Type
	14	4.1	1
5	12	3.8	1
10	17	7.1	1
15	22	3.7	1
20	19	3.6	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-29

TEST BORING 59
DATE DRILLED 12/2/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, CLAYEY, BROWN, MEDIUM DENSE, MOIST		24	4.1	1
5			13	6.2	1
	SAND, SILTY, LIGHT BROWN, DENSE, DRY				
10			32	1.7	1
	SAND, CLAYEY, GRAY, DENSE, MOIST				
15			35	21.9	1
20			31	22.6	1

TEST BORING 60
DATE DRILLED 11/27/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	24" TOPSOIL SAND, CLAYEY, BROWN, MEDIUM DENSE, MOIST		14	3.6	1
5			10	4.5	1
10	SAND, SILTY, TAN, DENSE, DRY to MOIST		42	2.4	1
15			41	5.5	1
20			31	5.4	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-30

TEST BORING 61
DATE DRILLED 11/27/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, SILTY, BROWN, MEDIUM DENSE to DENSE, MOIST to DRY
			27	3.5	1	
5			25	13.3	1	
10			25	12.8	1	
15			31	2.8	1	
20			33	12.9	1	

TEST BORING 62
DATE DRILLED 11/27/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, SILTY, LIGHT BROWN, MEDIUM DENSE, MOIST
			16	7.4	1	
5			14	3.6	1	
10			19	9.6	1	
15			50/5"	12.2	4	CLAYSTONE, VERY WEAK, GRAY, WEATHERED (CLAY, SANDY, HARD, MOIST)
20			35	26.5	4	

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-31

TEST BORING 63
DATE DRILLED 11/27/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, WITH SILT, TAN, LOOSE to MEDIUM DENSE, MOIST to DRY
			12	3.8	1	
5			9	4.2	1	
10			12	2.1	1	
15			11	4.0	1	
20			16	15.9	1	

TEST BORING 64
DATE DRILLED 12/2/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, SILTY, BROWN, MEDIUM DENSE, MOIST
			14	3.9	1	
5			12	4.0	1	
10			23	9.7	1	
15			39	23.9	4	CLAYSTONE, VERY WEAK, GRAY, WEATHERED (CLAY, SANDY, HARD, MOIST)
20			50/10"	21.7	4	

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-32

TEST BORING 65
DATE DRILLED 11/21/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			13	3.0	1	SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE to LOOSE, MOIST
5			7	3.7	1	
10			9	2.7	1	
15			24	4.6	1	
20			21	5.2	1	

TEST BORING 66
DATE DRILLED 11/21/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			17	7.0	2	CLAY, WITH SAND, DARK BROWN, VERY STIFF, MOIST
5			10	3.0	1	SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST to DRY
10			24	2.0	1	
15			16	6.5	1	
20			25	5.5	1	

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-33

TEST BORING 67
DATE DRILLED 11/21/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, SILTY, LIGHT BROWN, MEDIUM DENSE, MOIST to DRY		24	3.8	1
5			15	4.5	1
10			18	1.8	1
15			12	3.3	1
20	SANDSTONE, VERY WEAK, GRAY, COMPLETELY WEATHERED (SAND, SILTY, DENSE, MOIST)		36	13.1	3

TEST BORING 68
DATE DRILLED 11/21/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to LOOSE, MOIST		24	3.8	1
5			17	3.0	1
10			21	5.7	1
15			16	3.0	1
20			7	13.2	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-34

TEST BORING 69
DATE DRILLED 11/21/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, SILTY, LIGHT BROWN, MEDIUM DENSE, MOIST
			21	3.7	1	
5			22	3.0	1	
10			21	3.8	1	
15			15	28.4	1	SAND, VERY SILTY, LIGHT BROWN, MEDIUM DENSE, MOIST
20			36	30.1	3	SANDSTONE, VERY WEAK, GRAY, COMPLETELY WEATHERED (SAND, SILTY, DENSE, MOIST)

TEST BORING 70
DATE DRILLED 11/21/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, SILTY, LIGHT BROWN, MEDIUM DENSE, DRY to MOIST
			16	1.7	1	
5			15	4.3	1	
10			17	4.1	1	
15			14	3.4	1	CLAY, SANDY, LIGHT BROWN, VERY STIFF, MOIST
20			25	24.1	2	

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-35

TEST BORING 71
DATE DRILLED 11/21/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to LOOSE, MOIST to DRY
			9	4.1	1	
5			16	9.9	1	
10			22	8.2	1	
15			28	2.7	1	
20			19	2.7	1	

TEST BORING 72
DATE DRILLED 11/21/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to DENSE, DRY to MOIST
			20	2.5	1	
5			12	2.4	1	
10			15	3.6	1	
15			30	4.5	1	
20			5	30.8	2	CLAY, SANDY, BLACK, MEDIUM STIFF, MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-36

TEST BORING 73
DATE DRILLED 12/3/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			15	2.5	1	SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST to DRY
5			13	4.4	1	
10			15	1.8	1	
15			22	2.7	1	
20			21	12.8	1	

TEST BORING 74
DATE DRILLED 12/3/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			12	3.0	1	SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to LOOSE, DRY
5			5	2.5	1	
10			17	13.4	2	CLAY, SANDY, BROWN to TAN, VERY STIFF, MOIST
15			17	11.4	2	
20			50/7"	17.4	3	SANDSTONE, EXTREMELY WEAK, BROWN, MODERATELY WEATHERED (SAND, SILTY, VERY DENSE, MOIST)

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TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-37

TEST BORING 75
DATE DRILLED 11/14/2024

REMARKS

DRY TO 20', 11/14/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			17	3.6	1
5			22	3.9	1
10			19	3.9	1
15			28	5.9	1
20			16	6.0	1

12" TOPSOIL

SAND, SILTY, LIGHT BROWN to BROWN, MEDIUM DENSE, MOIST

TEST BORING 76
DATE DRILLED 11/14/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			15	6.3	2
5			22	2.3	1
10			27	1.5	1
15			9	3.6	1
20			10	4.6	1

12" TOPSOIL

CLAY, SANDY, BROWN, STIFF, MOIST

SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to LOOSE, DRY to MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-38

TEST BORING 77
DATE DRILLED 11/14/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			14	6.7	2
5			20	2.7	1
10			22	4.4	1
15			14	3.3	1
20			15	14.0	2

12" TOPSOIL
CLAY, SANDY, DARK BROWN, STIFF, MOIST
SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to LOOSE, DRY to MOIST
CLAY, SANDY, DARK BROWN, STIFF, MOIST

TEST BORING 78
DATE DRILLED 11/19/2024

REMARKS

DRY TO 19', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			18	4.9	2
5			17	1.7	1
10			38	1.2	1
15			16	7.8	1
20			18	2.8	1

12" TOPSOIL
CLAY, SANDY, DARK BROWN, STIFF, MOIST
SAND, SILTY, LIGHT BROWN, MEDIUM DENSE to DENSE, DRY to MOIST

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-39

TEST BORING 79
DATE DRILLED 11/19/2024

REMARKS

DRY TO 20', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	12" TOPSOIL				
	SAND, SILTY, LIGHT BROWN, MEDIUM DENSE, DRY to MOIST		19	2.9	1
5			23	2.1	1
10			23	3.1	1
15			15	1.3	1
20			16	5.3	1

TEST BORING 80
DATE DRILLED 11/19/2024

REMARKS

DRY TO 19.5', 12/4/24

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	12" TOPSOIL				
	SAND, SILTY, LIGHT BROWN, MEDIUM DENSE, DRY to MOIST		23	3.3	1
5			15	2.6	1
10			16	2.8	1
15			19	1.5	1
20			17	3.3	1

ENTECH ENGINEERING, INC.

TEST BORING LOGS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. B-40

APPENDIX C: Laboratory Testing Results

ENTECH ENGINEERING, INC.

TABLE C-1
SUMMARY OF LABORATORY TEST RESULTS

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX	SULFATE (WT %)	SWELL/ CONSOL (%)	USCS	SOIL DESCRIPTION
1	1	5			25.5						SM	SAND, SILTY
1	2	2-3			15.3	29	27	2			SM	SAND, SILTY
1	4	10			23.4						SM	SAND, SILTY
1	5	5			20.1						SM	SAND, SILTY
1	6	2-3			23.8						SM	SAND, SILTY
1	8	2-3			25.5						SM	SAND, SILTY
1	9	10			20.3						SM	SAND, SILTY
1	10	5			7.5	NV	NP	NP	0.00		SW-SM	SAND, WITH SILT
1	11	10			29.4						SM	SAND, SILTY
1	13	2-3			22.8						SM	SAND, SILTY
1	14	5			33.4						SM	SAND, SILTY
1	15	10			7.9						SW-SM	SAND, WITH SILT
1	17	2-3			28.2	24	20	4			SM	SAND, SILTY
1	18	5			13.4						SM	SAND, SILTY
1	19	10			6.6						SW-SM	SAND, WITH SILT
1	20	15			47.2						SM	SAND, SILTY
1	21	10			41.1						SM	SAND, SILTY
1	24	2-3			30.7	22	17	5	<0.01		SC-SM	SAND, CLAYEY-SILTY
1	25	5			29.2						SM	SAND, SILTY
1	26	10			12.4						SM	SAND, SILTY
1	27	5			14.7						SM	SAND, SILTY
1	29	10			17.0						SM	SAND, SILTY
1	30	15			18.6						SM	SAND, SILTY
1	31	5	12.3	109.3	39.9	24	18	6	<0.01	-0.7	SC-SM	SAND, CLAYEY-SILTY
1	32	5	32.1	85.5	28.2					1.8	SM	SAND, SILTY
1	33	2-3			19.9						SM	SAND, SILTY
1	34	5			16.2						SM	SAND, SILTY
1	35	10			47.2						SM	SAND, SILTY
1	36	5			35.4						SM	SAND, SILTY
1	37	2-3			44.6						SM	SAND, SILTY
1	38	5			25.2						SM	SAND, SILTY
1	39	10			10.5	NV	NP	NP	<0.01		SW-SM	SAND, WITH SILT
1	43	5			46.2						SM	SAND, SILTY
1	44	15			11.6	23	16	7			SW-SC-SM	SAND, WITH CLAY and SILT

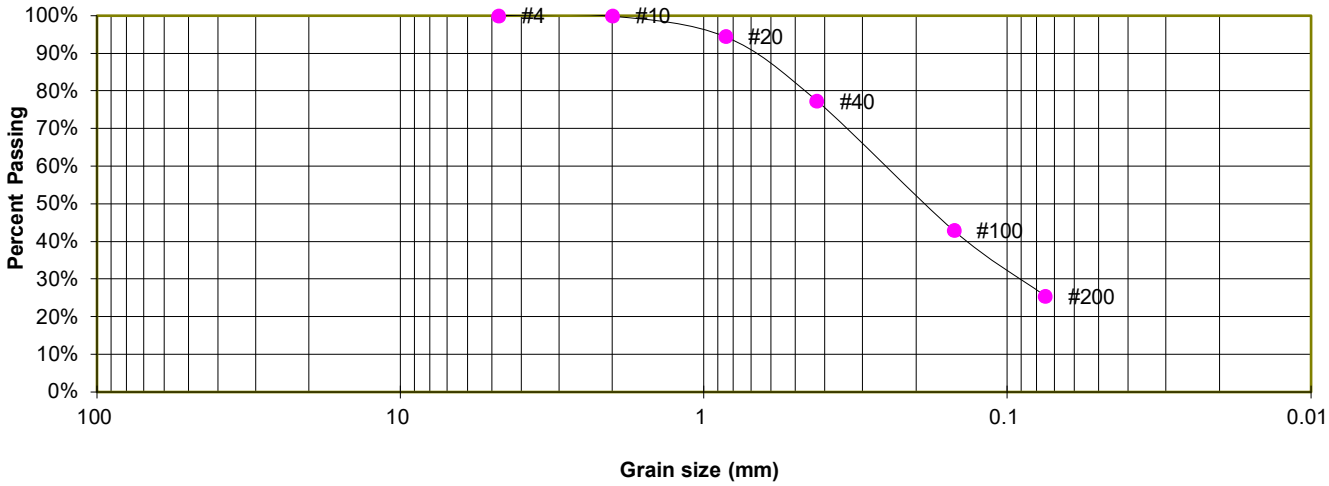
Project: Flying Horse East
Client: Flying Horse Development
Job No: 240074

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX	SULFATE (WT %)	SWELL/ CONSOL (%)	USCS	SOIL DESCRIPTION
1	45	5			22.3						SM	SAND, SILTY
1	46	10			35.5						SM	SAND, SILTY
1	47	5			18.7						SM	SAND, SILTY
1	50	2-3			31.4						SM	SAND, SILTY
1	52	10			14.3						SM	SAND, SILTY
1	53	5			16.4	NV	NP	NP			SM	SAND, SILTY
1	54	10			16.2						SM	SAND, SILTY
1	55	2-3			20.4						SM	SAND, SILTY
1	57	2-3			35.6						SM	SAND, SILTY
1	58	5			33.7						SM	SAND, SILTY
1	59	5			46.1						SC	SAND, CLAYEY
1	60	5	7.4	104.3	38.0	30	22	8		-2.0	SC	SAND, CLAYEY
1	61	2-3			42.4						SM	SAND, SILTY
1	62	5			12.0						SM	SAND, SILTY
1	63	2-3			11.4						SW-SM	SAND, WITH SILT
1	64	5			19.7						SM	SAND,S ILTY
1	65	5			28.6	NV	NP	NP	0.00		SM	SAND, SILTY
1	66	2-3			71.1				0.00		CL	CLAY, WITH SAND
1	68	5			18.2						SM	SAND, SILTY
1	70	5			18.4						SM	SAND, SILTY
1	71	10	8.9	98.1	40.6					-1.4	SM	SAND, SILTY
1	72	2-3			12.1						SM	SAND, SILTY
1	73	2-3			15.5						SM	SAND, SILTY
1	75	5			33.1						SM	SAND, SILTY
1	77	10			16.3	NV	NP	NP	<0.01		SM	SAND, SILTY
1	79	5			16.4						SM	SAND, SILTY
1	80	10			27.0						SM	SAND, SILTY
1	69	15			48.4	49	39	10			SM	SAND, SILTY
2	76	2-3	9.8	102.2	64.8	30	22	8	0.00	0.1	CL	CLAY, SANDY
2	3	5	24.1	99.2	76.2					0.6	CL	CLAY, WITH SAND
2	7	5	9.7	103.3	68.4	29	21	8		-0.8	CL	CLAY, SANDY
2	16	2-3	7.9	98.2	73.7	26	19	7	<0.01	-1.5	CL	CLAY, WITH SAND
2	22	5	8.5	103.7	68.5	30	21	9		0.2	CL	CLAY, SANDY
2	23	2-3	8.3	105.4	71.3					0.9	CL	CLAY, WITH SAND
2	28	2-3			59.9						CL	CLAY, SANDY
2	32	20			53.7	60	43	17	0.00		ML	SILT, SANDY
2	38	15	27.0	89.8	84.2	47	23	24	<0.01	-0.5	CL	CLAY, SLIGHTLY SANDY

Project: Flying Horse East
Client: Flying Horse Development
Job No: 240074

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX	SULFATE (WT %)	SWELL/ CONSOL (%)	USCS	SOIL DESCRIPTION
2	40	5			66.9						CL	CLAY, SANDY
2	41	2-3			65.5						CL	CLAY, SANDY
2	42	2-3			54.6	26	18	8			CL	CLAY, SANDY
2	49	10			74.6	36	23	13			CL	CLAY, WITH SAND
2	51	5			66.1						CL	CLAY, SANDY
2	56	5			69.5						CL	CLAY, SANDY
2	64	15	31.1	88.1	59.4					0.9	CL	CLAY, SANDY
2	74	10			69.0						CL	CLAY, SANDY
2	78	2-3	7.6	104.7	53.2					-0.9	CL	CLAY, SANDY
3	67	20			35.9	NV	NP	NP	0.00		SM	SANDSTONE (SAND, SILTY)
4	12	20			66.4				0.00		ML	SILTSTONE (SILT, SANDY)
4	48	20			87.7	NV	NP	NP			ML	SILTSTONE (SILT, SLIGHTLY SANDY)
4	62	20			61.3						CL	CLAYSTONE (CLAY, SANDY)

TEST BORING	1	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.9%
20	94.5%
40	77.4%
100	43.0%
200	25.5%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

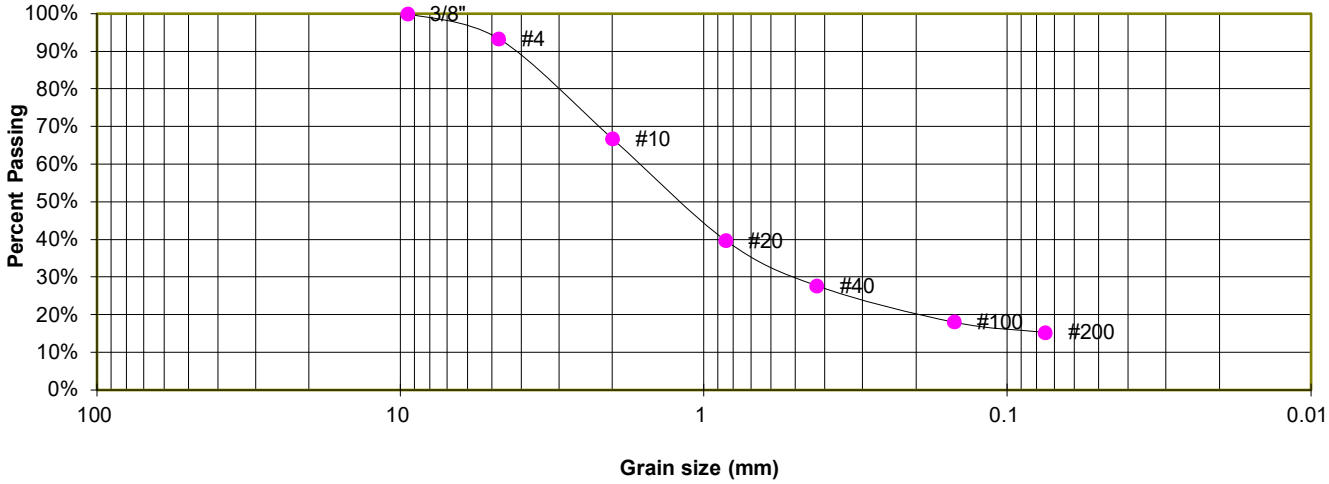
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-1

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"	
3/8"	100.0%
4	93.4%
10	66.8%
20	39.8%
40	27.7%
100	18.1%
200	15.3%

ATTERBERG LIMITS

Plastic Limit	27
Liquid Limit	29
Plastic Index	2

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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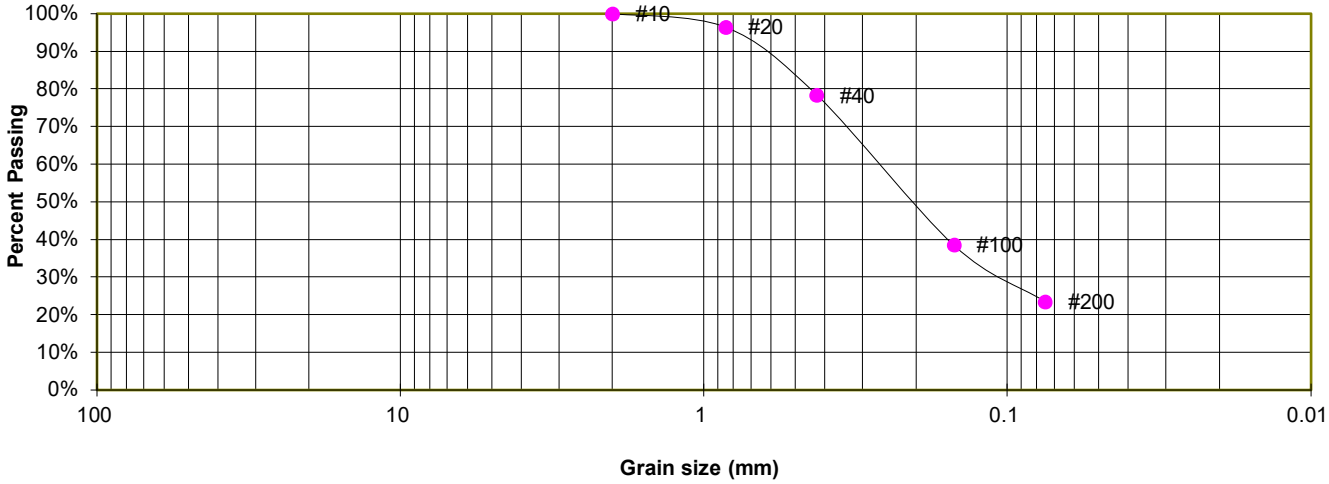
JOB NO. 240074

FIG. C-2

TEST BORING	4	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	96.5%
40	78.4%
100	38.5%
200	23.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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FLYING HORSE DEVELOPMENT

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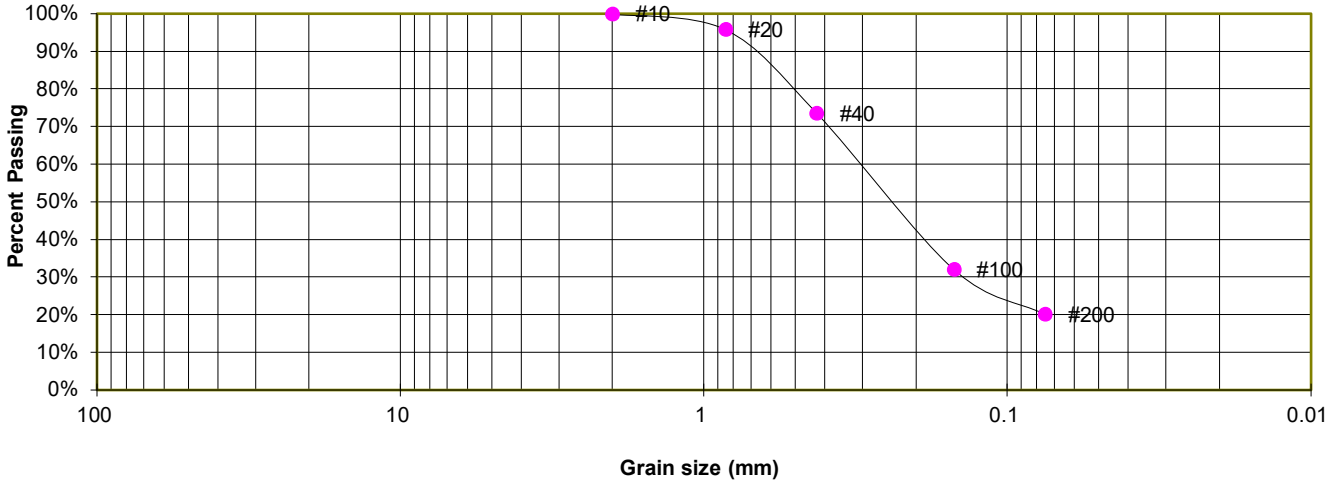
FIG. C-3

TEST BORING	5	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	95.8%
40	73.6%
100	32.0%
200	20.1%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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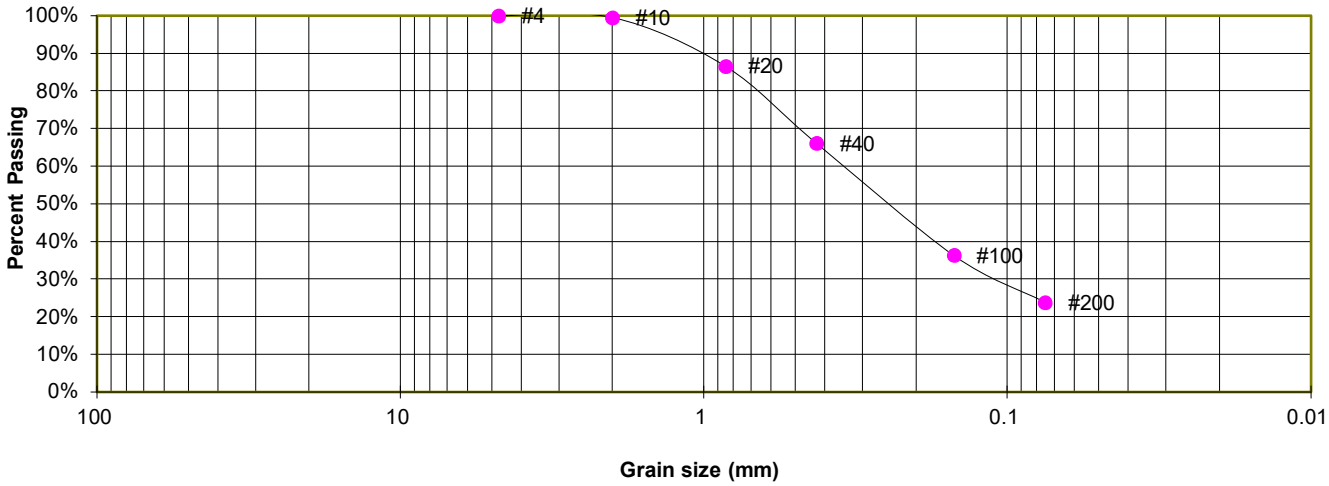
JOB NO. 240074

FIG. C-4

TEST BORING	6	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"	
3/8"	
4	100.0%
10	99.5%
20	86.6%
40	66.1%
100	36.3%
200	23.8%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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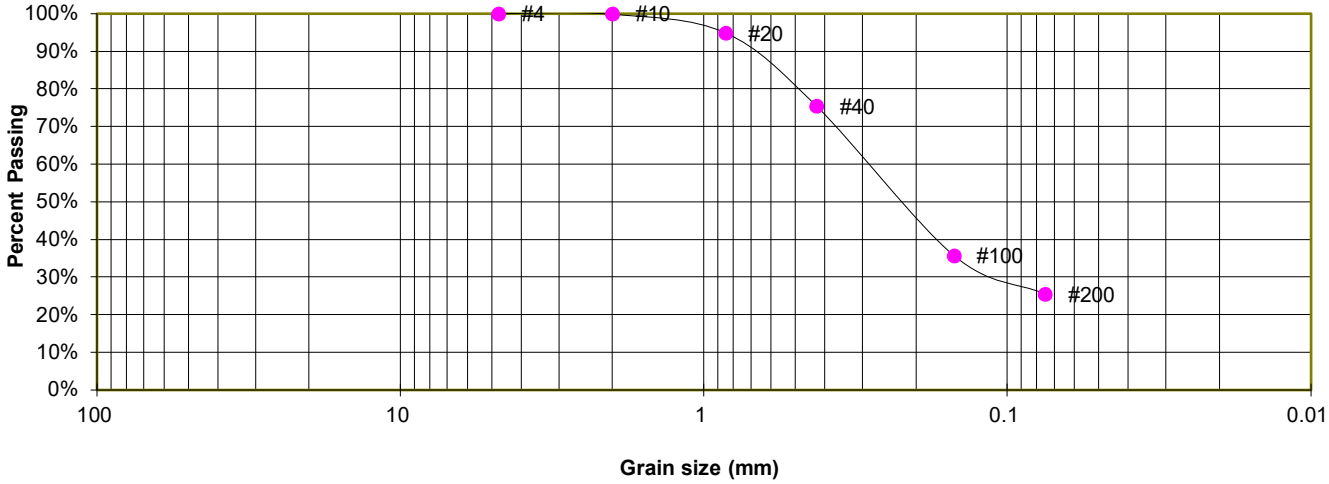
FIG. C-5

TEST BORING	8	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"	
3/8"	
4	100.0%
10	99.9%
20	94.9%
40	75.5%
100	35.8%
200	25.5%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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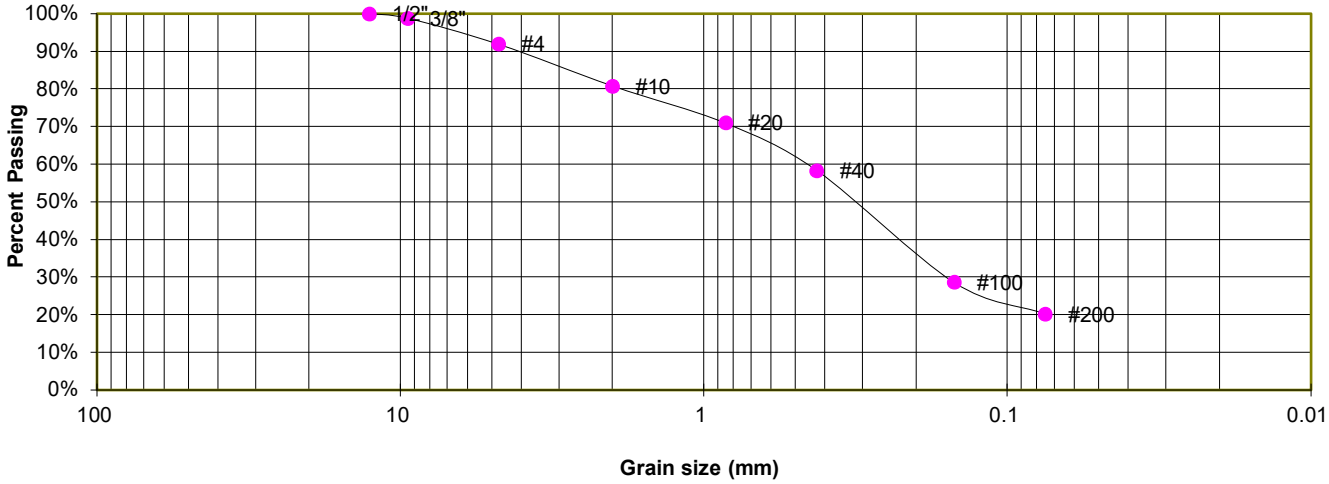
FIG. C-6

TEST BORING	9	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	98.8%
4	91.9%
10	80.8%
20	71.0%
40	58.3%
100	28.7%
200	20.3%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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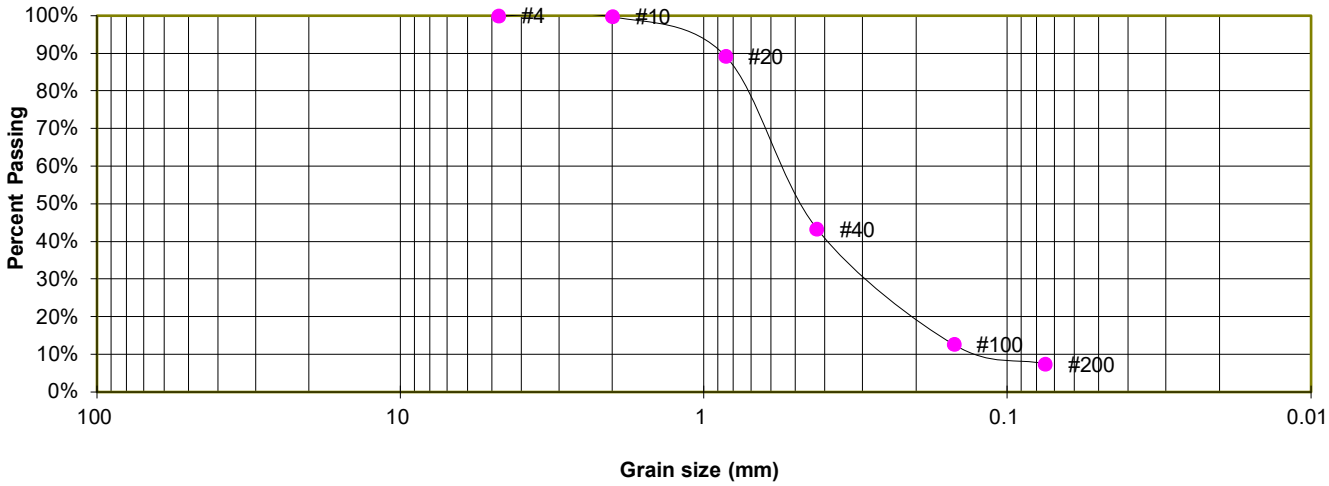
FIG. C-7

TEST BORING	10	SOIL DESCRIPTION	SAND, WITH SILT
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.7%
20	89.3%
40	43.3%
100	12.7%
200	7.5%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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FLYING HORSE DEVELOPMENT

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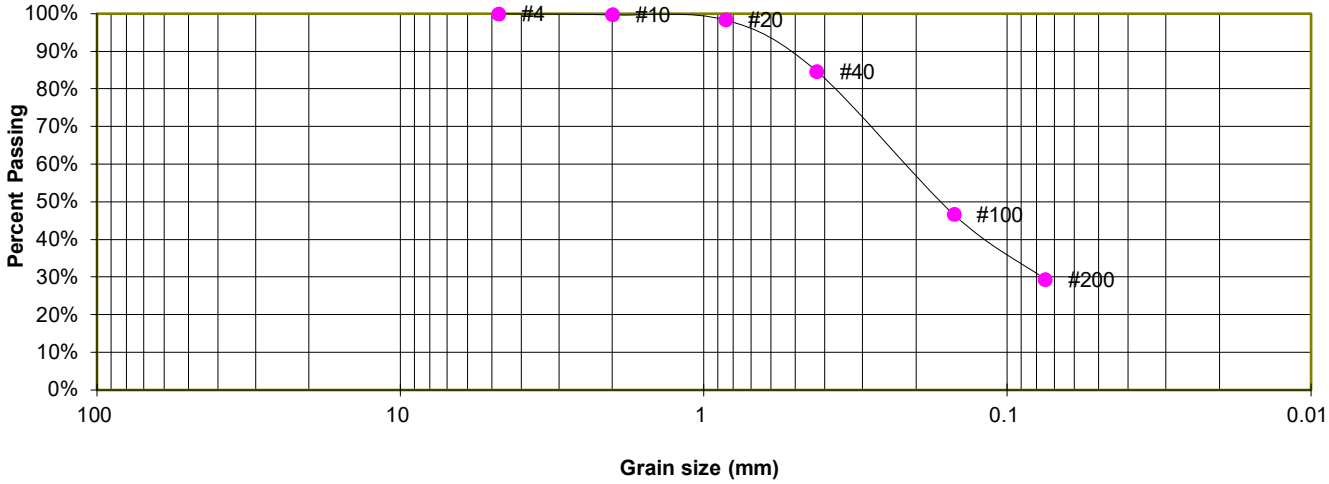
FIG. C-8

TEST BORING	11	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.8%
20	98.4%
40	84.7%
100	46.7%
200	29.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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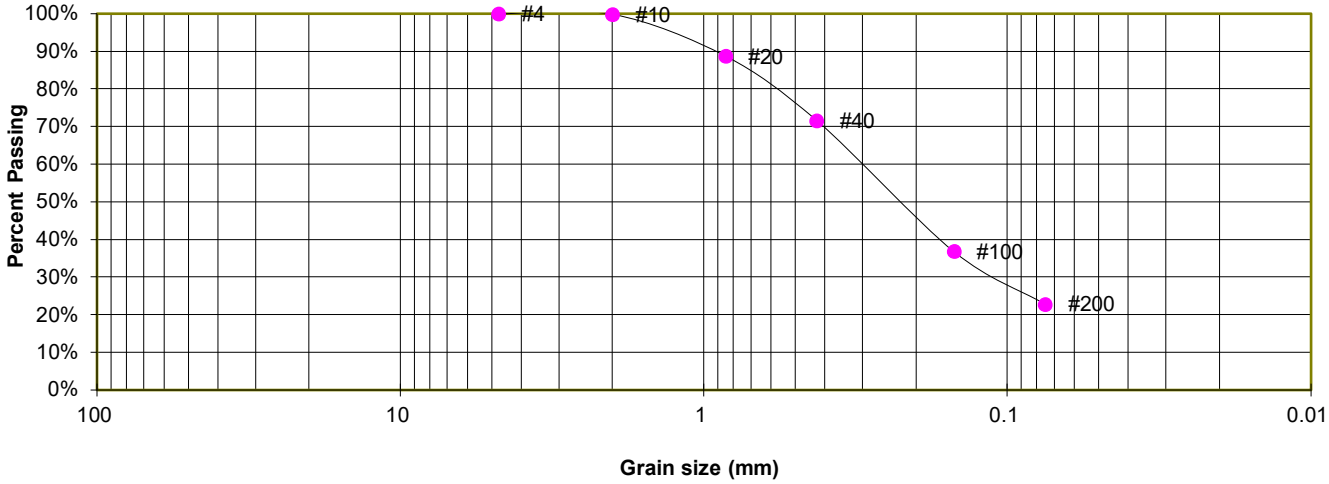
FIG. C-9

TEST BORING	13	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"	
3/8"	
4	100.0%
10	99.8%
20	88.8%
40	71.6%
100	36.9%
200	22.8%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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FLYING HORSE DEVELOPMENT

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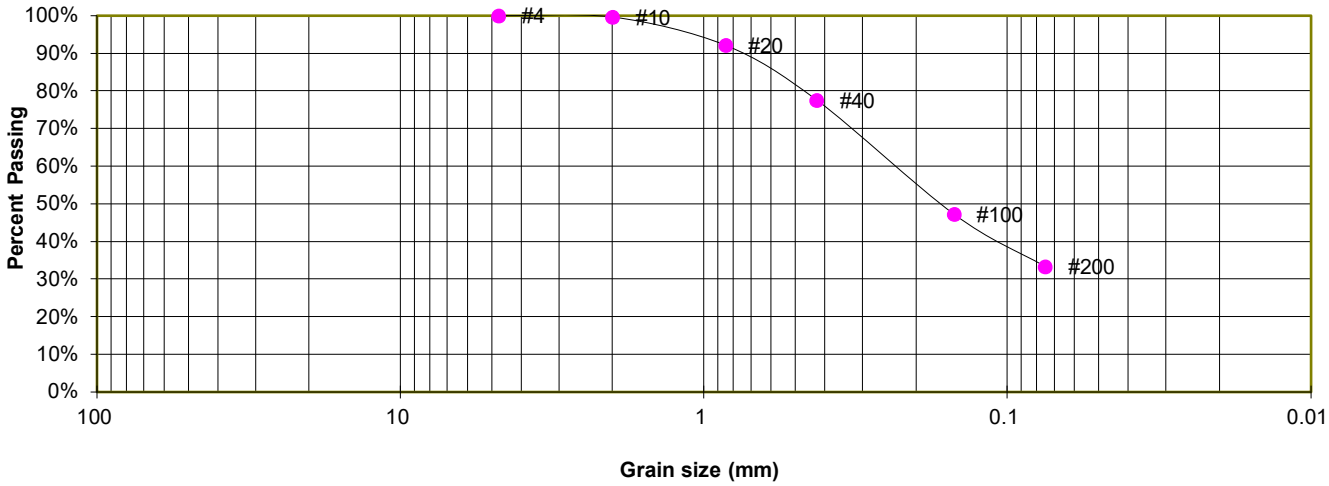
FIG. C-10

TEST BORING	14	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.6%
20	92.2%
40	77.6%
100	47.3%
200	33.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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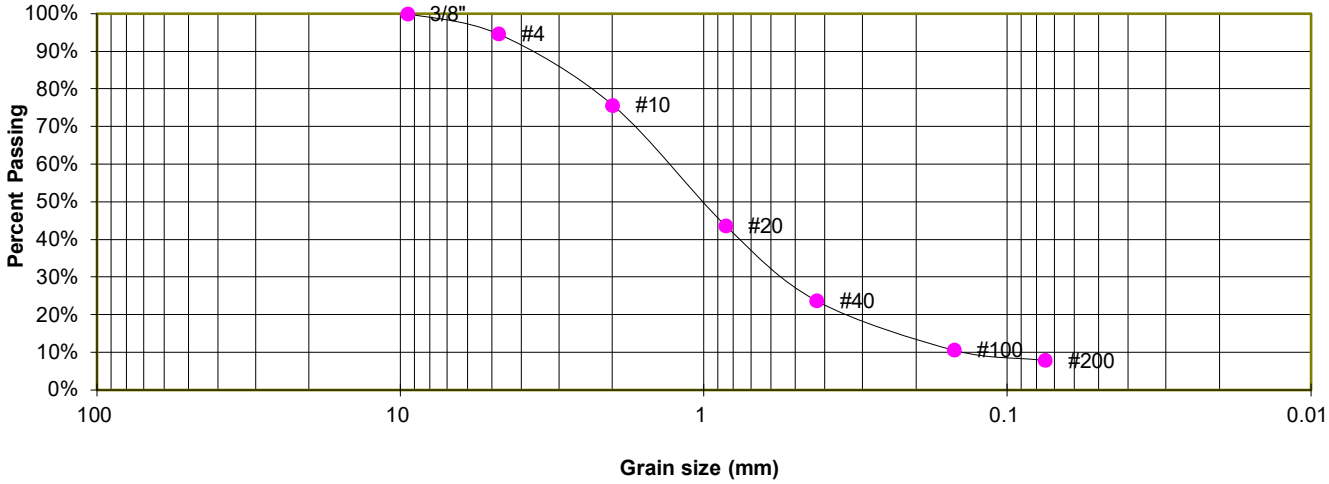
FIG. C-11

TEST BORING	15	SOIL DESCRIPTION	SAND, WITH SILT
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	94.6%
10	75.7%
20	43.7%
40	23.8%
100	10.6%
200	7.9%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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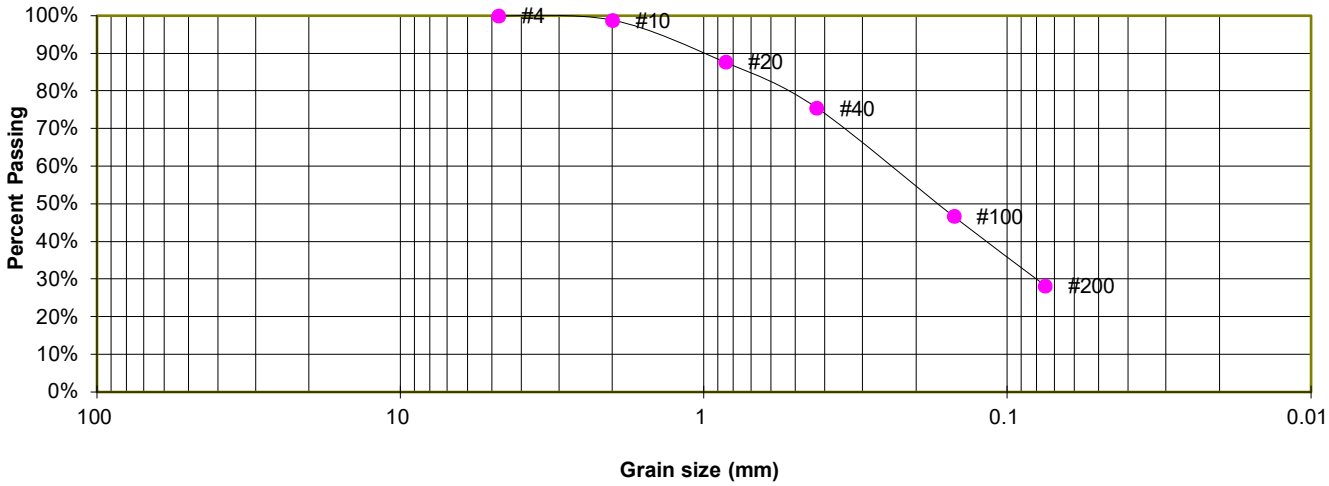
JOB NO. 240074

FIG. C-12

TEST BORING	17	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"	
3/8"	
4	100.0%
10	98.8%
20	87.7%
40	75.5%
100	46.7%
200	28.2%

ATTERBERG LIMITS

Plastic Limit	20
Liquid Limit	24
Plastic Index	4

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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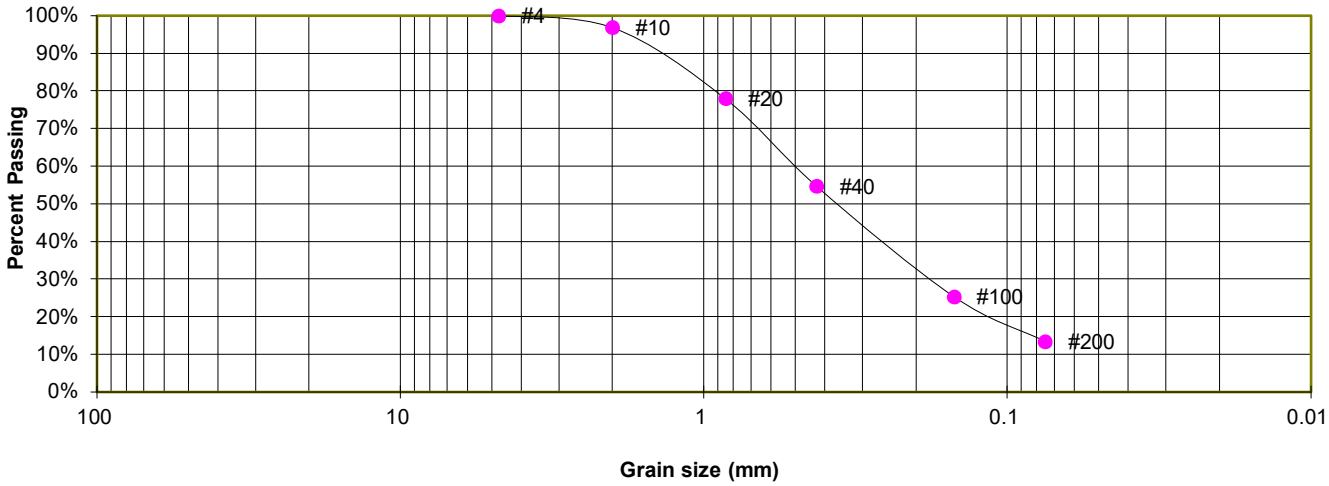
FIG. C-13

TEST BORING	18	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	96.9%
20	78.0%
40	54.7%
100	25.3%
200	13.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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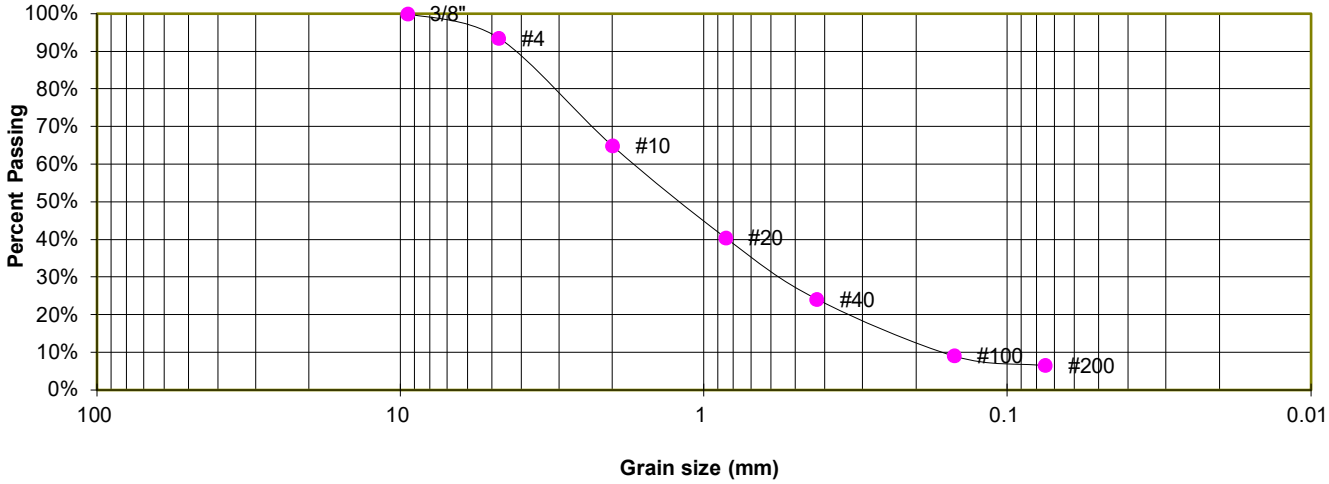
FIG. C-14

TEST BORING	19	SOIL DESCRIPTION	SAND, WITH SILT
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	93.5%
10	64.9%
20	40.5%
40	24.1%
100	9.1%
200	6.6%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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FLYING HORSE DEVELOPMENT

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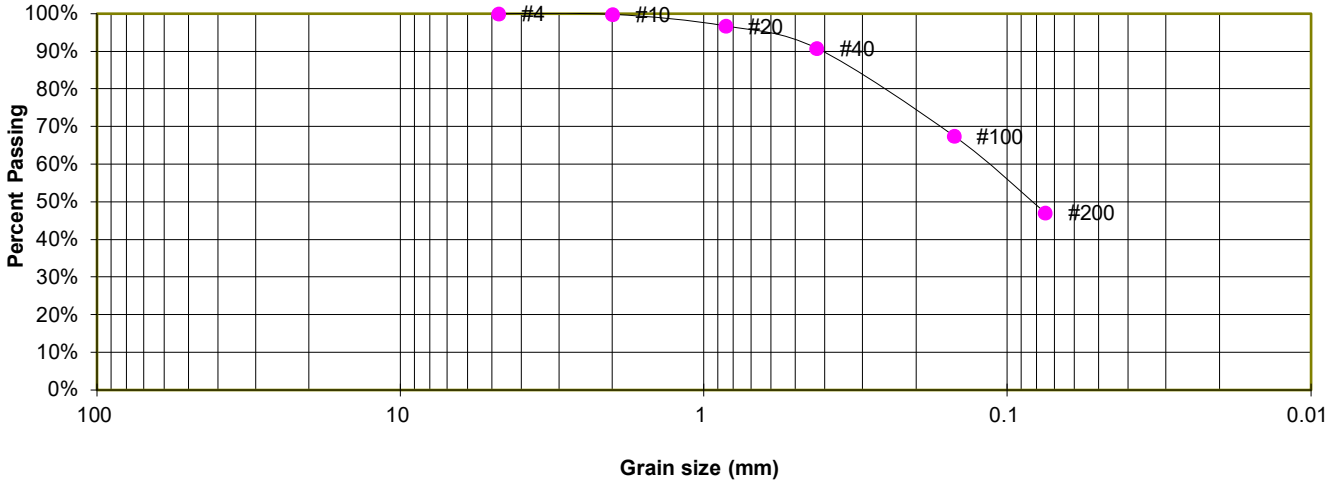
FIG. C-15

TEST BORING	20	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	15	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.9%
20	96.8%
40	90.8%
100	67.5%
200	47.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

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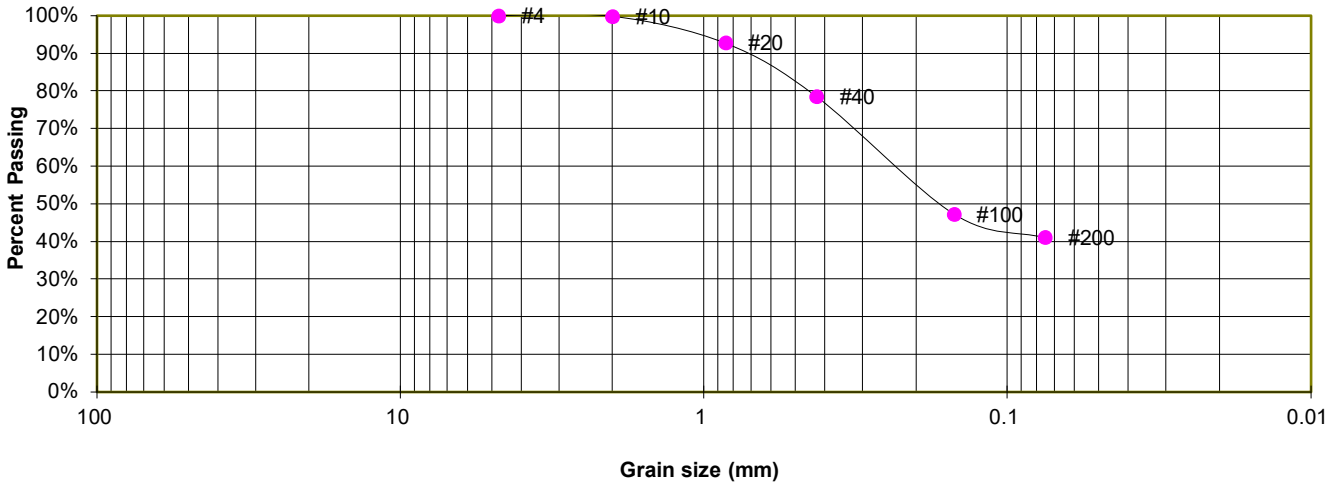
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-16

TEST BORING	21	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.8%
20	92.8%
40	78.5%
100	47.3%
200	41.1%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

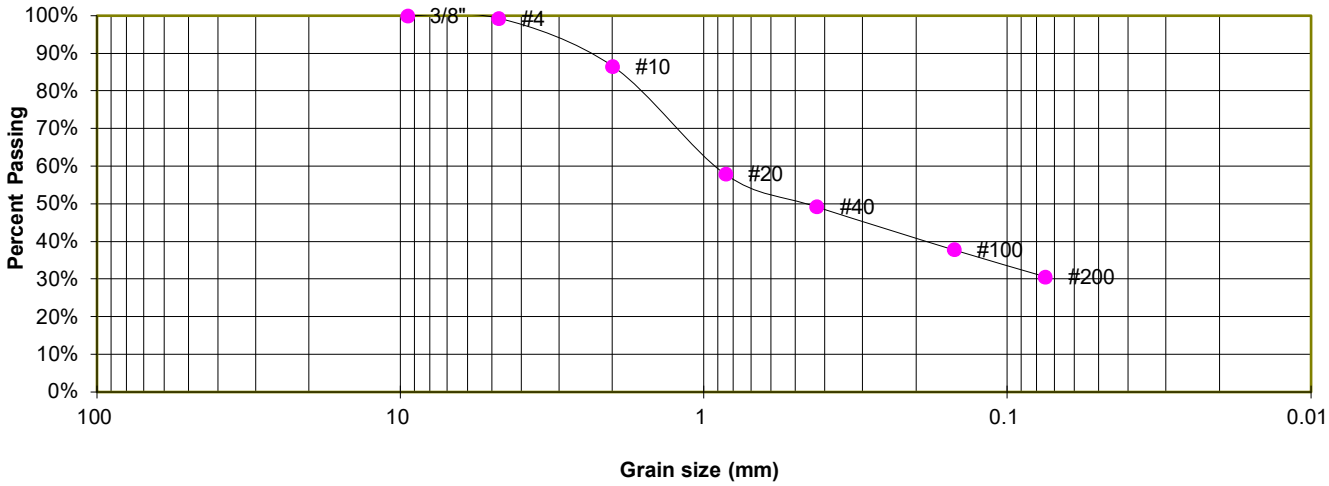
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-17

TEST BORING	24	SOIL DESCRIPTION	SAND, CLAYEY-SILTY
DEPTH (FT)	2-3	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.3%
10	86.6%
20	57.9%
40	49.3%
100	37.8%
200	30.7%

ATTERBERG LIMITS

Plastic Limit	17
Liquid Limit	22
Plastic Index	5

SOIL CLASSIFICATION

USCS CLASSIFICATION: SC-SM

ENTECH ENGINEERING, INC.

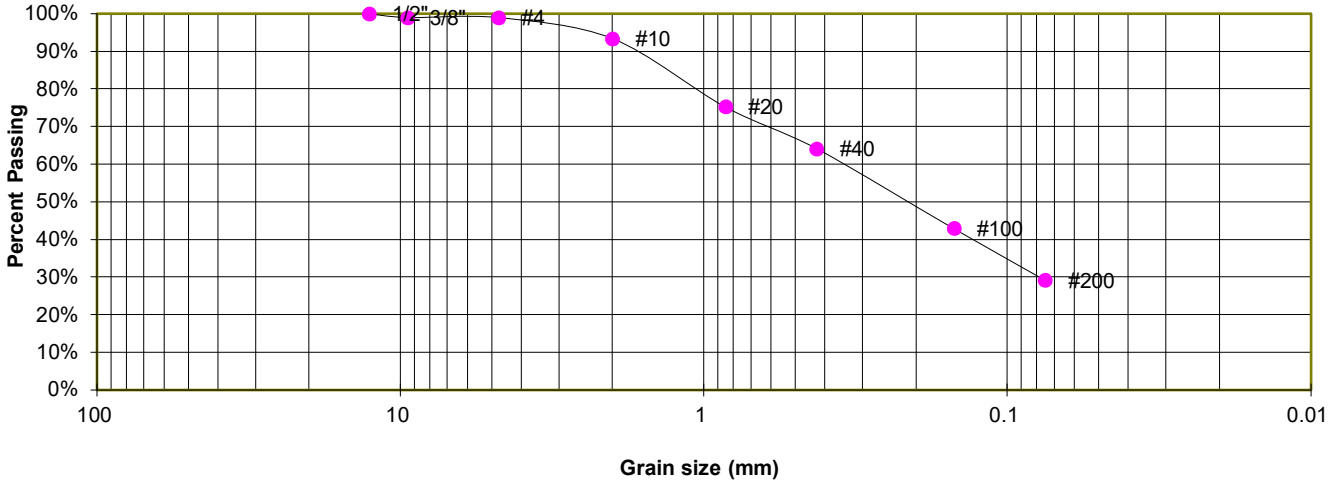
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-18

TEST BORING	25	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	99.0%
4	99.0%
10	93.4%
20	75.3%
40	64.1%
100	42.9%
200	29.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

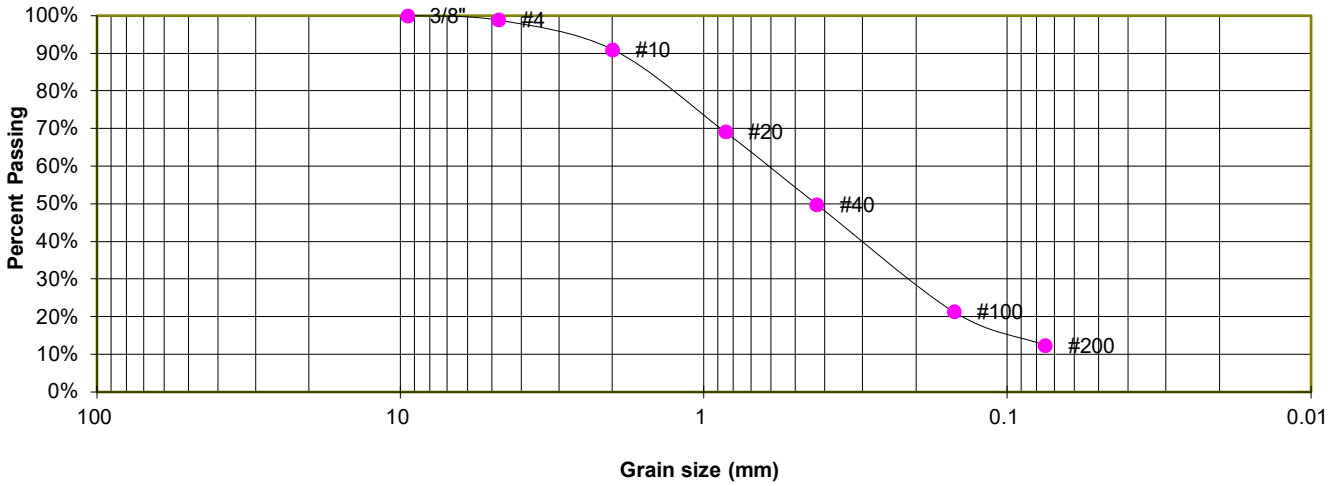
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-19

TEST BORING	26	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	98.9%
10	91.0%
20	69.1%
40	49.9%
100	21.4%
200	12.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

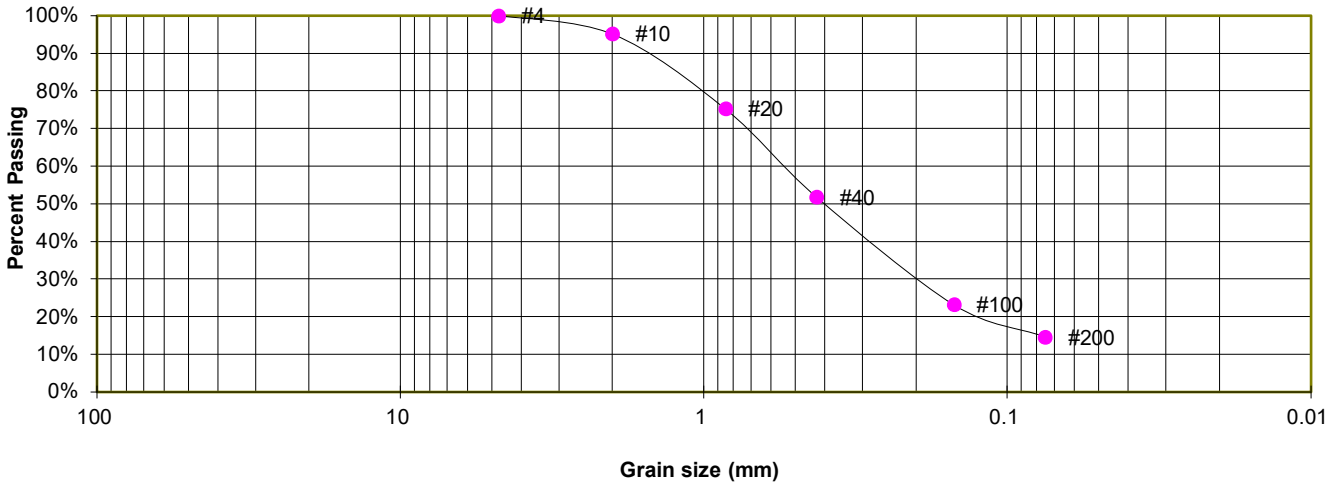
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-20

TEST BORING	27	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	95.2%
20	75.3%
40	51.8%
100	23.2%
200	14.7%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

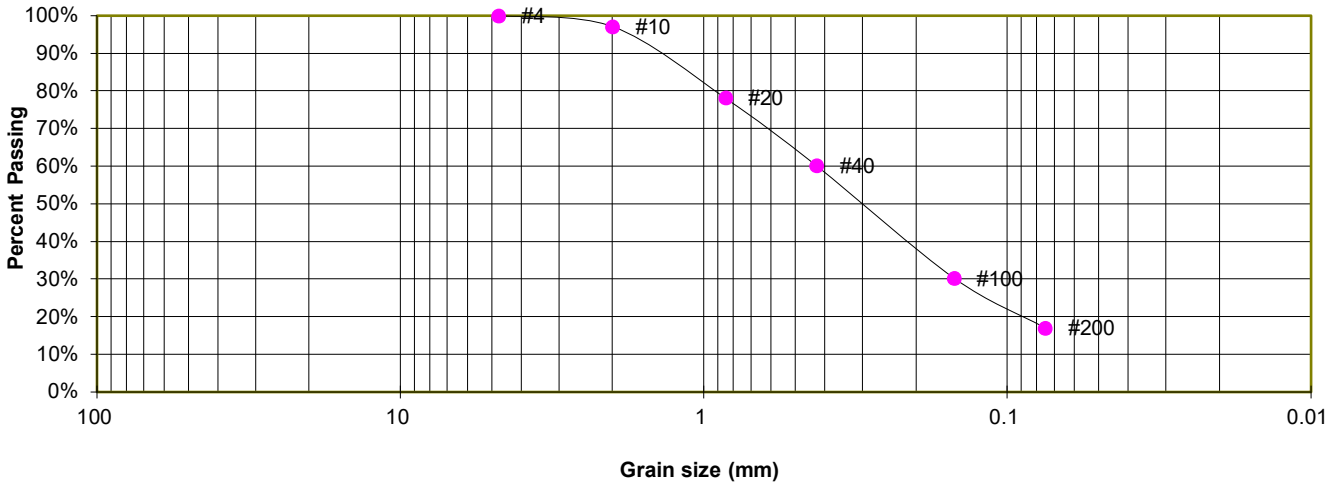
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-21

TEST BORING	29	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	97.1%
20	78.2%
40	60.1%
100	30.3%
200	17.0%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

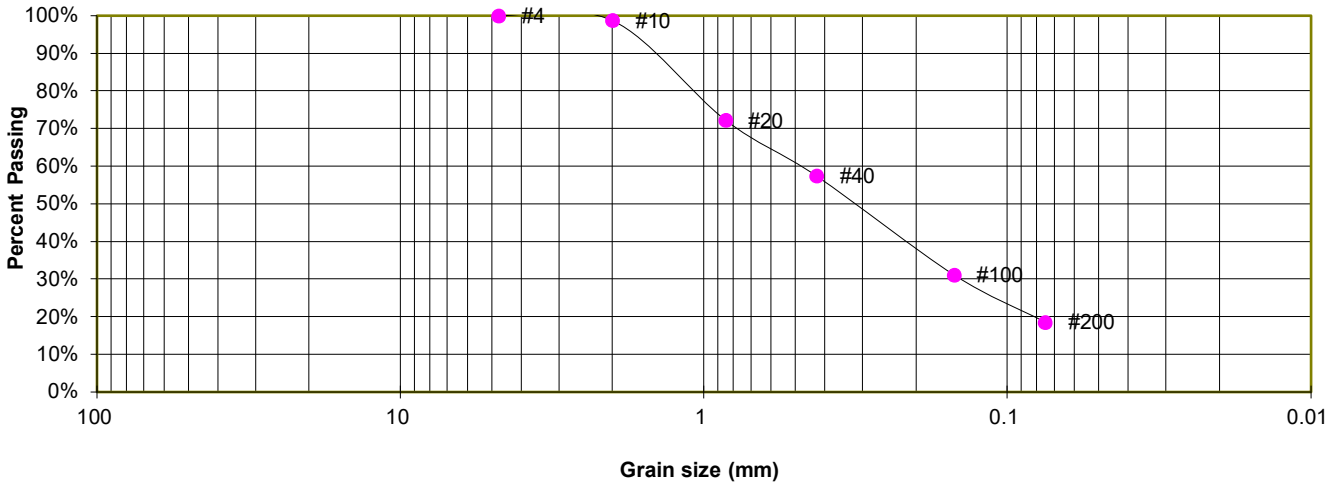
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-22

TEST BORING	30	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	15	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	98.8%
20	72.3%
40	57.4%
100	31.2%
200	18.6%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

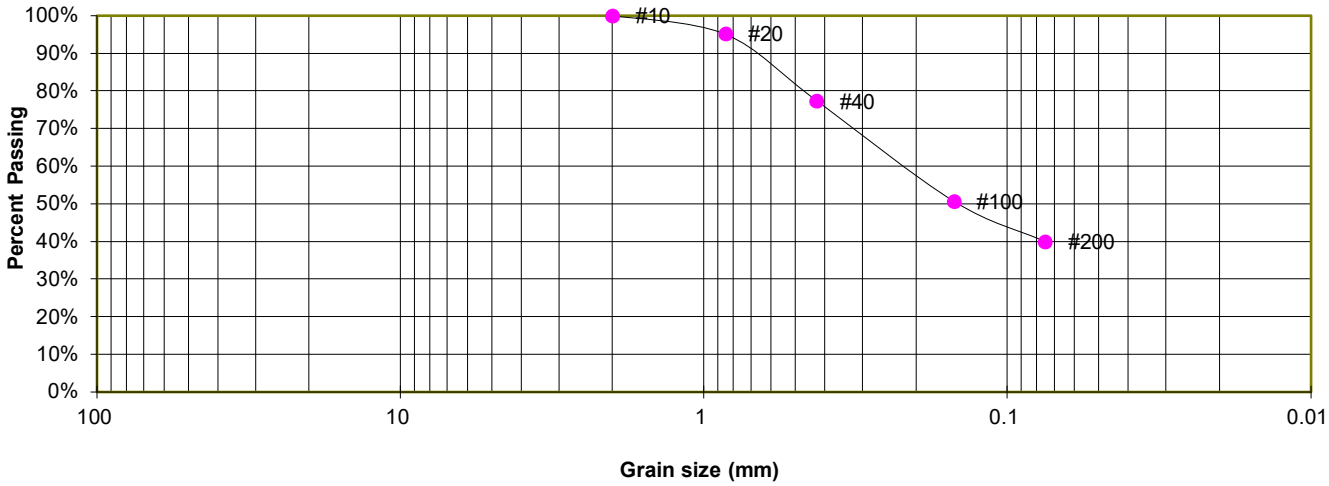
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-23

TEST BORING	31	SOIL DESCRIPTION	SAND, CLAYEY-SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	95.2%
40	77.4%
100	50.7%
200	39.9%

ATTERBERG LIMITS

Plastic Limit	18
Liquid Limit	24
Plastic Index	6

SOIL CLASSIFICATION

USCS CLASSIFICATION: SC-SM

ENTECH ENGINEERING, INC.

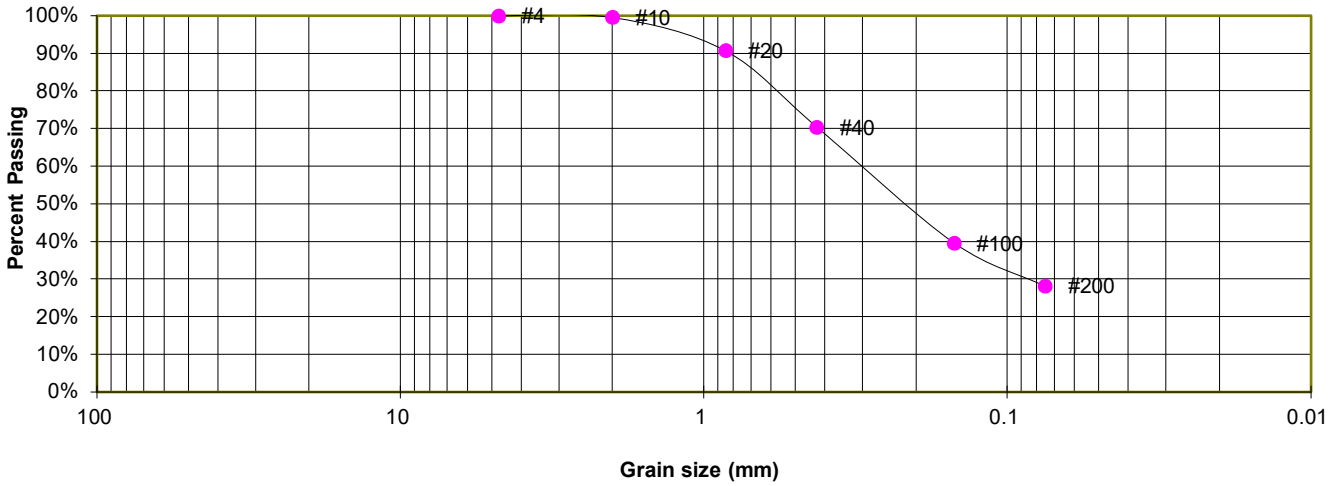
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-24

TEST BORING	32	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.6%
20	90.7%
40	70.4%
100	39.7%
200	28.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

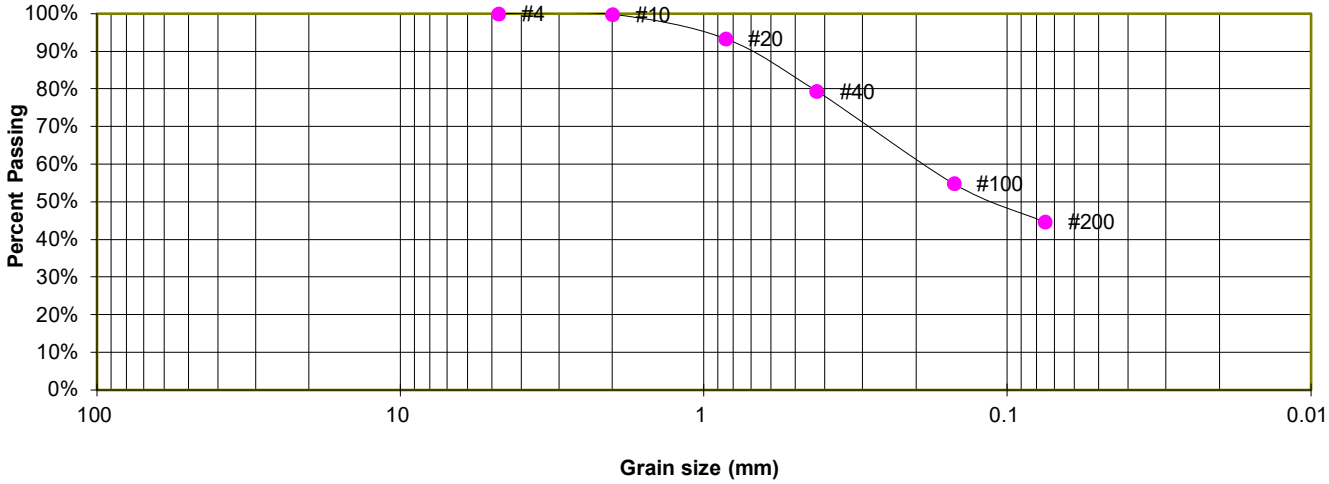
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-25

TEST BORING	37	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"	
3/8"	
4	100.0%
10	99.9%
20	93.4%
40	79.4%
100	54.9%
200	44.6%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

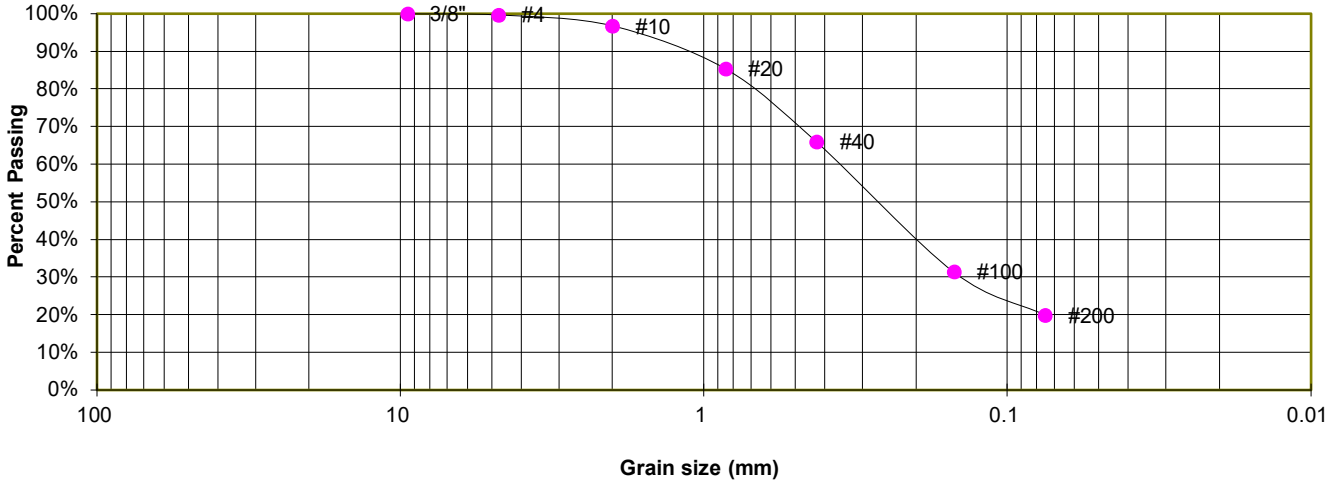
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-26

TEST BORING	33	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"	
3/8"	100.0%
4	99.7%
10	96.7%
20	85.4%
40	65.9%
100	31.4%
200	19.9%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

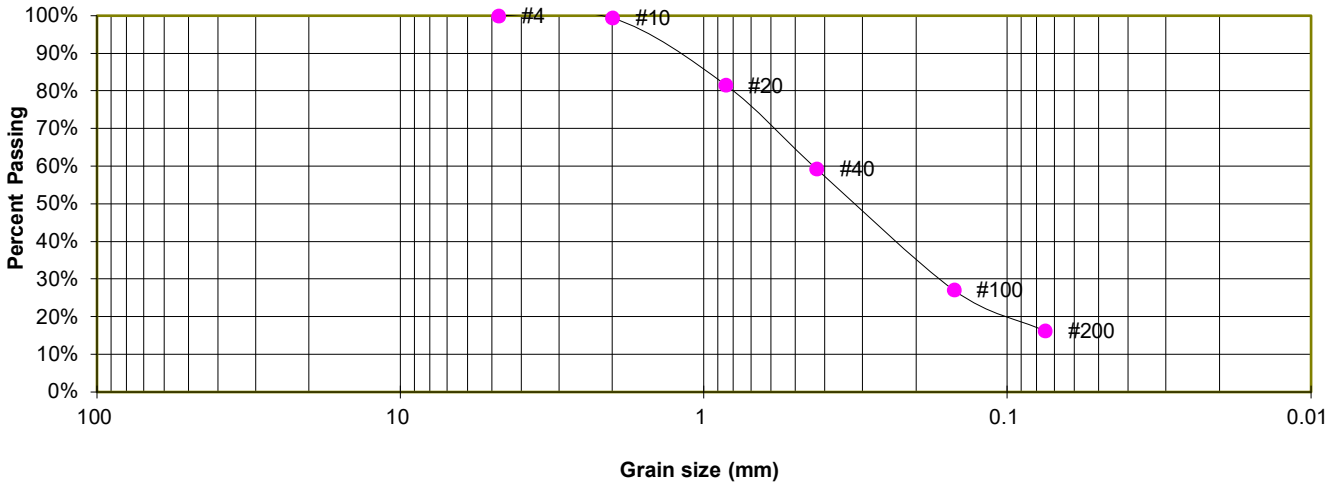
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-27

TEST BORING	34	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.4%
20	81.7%
40	59.3%
100	27.2%
200	16.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

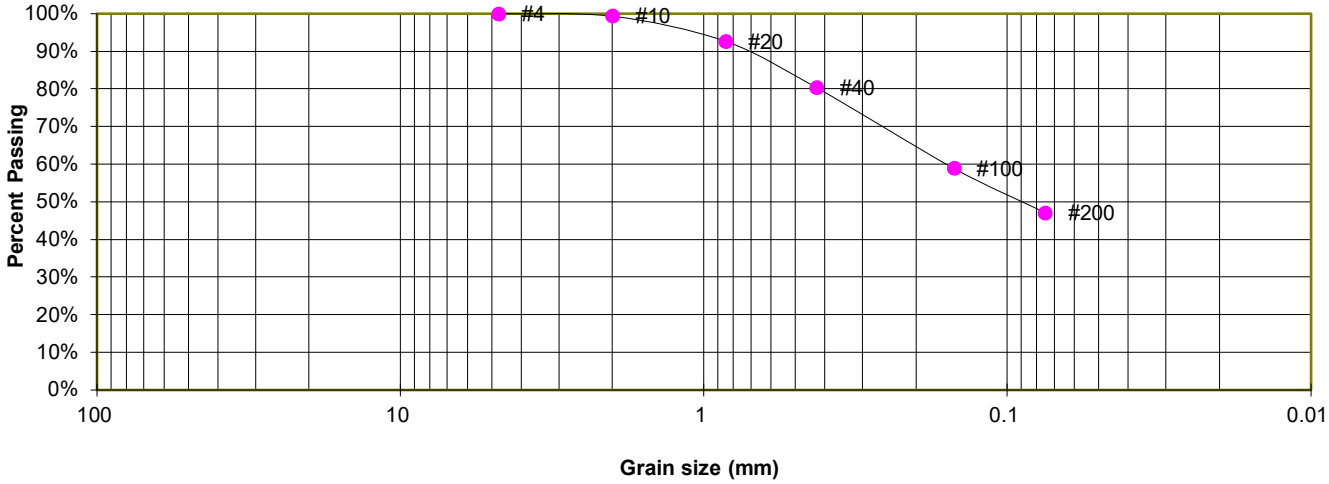
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-28

TEST BORING	35	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.4%
20	92.7%
40	80.4%
100	58.9%
200	47.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

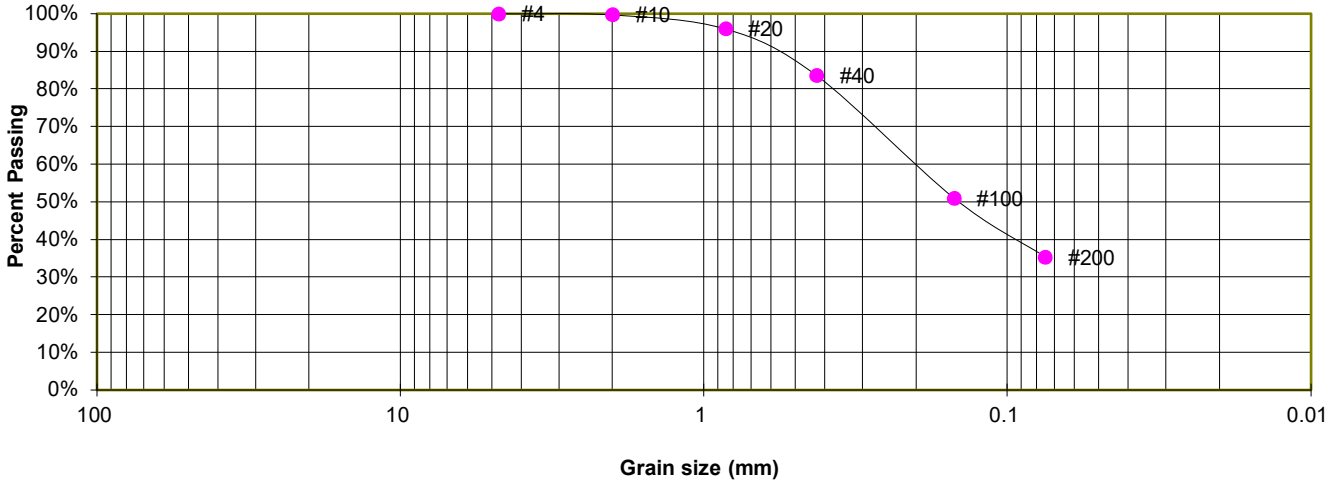
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-29

TEST BORING	36	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.7%
20	96.0%
40	83.6%
100	51.0%
200	35.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

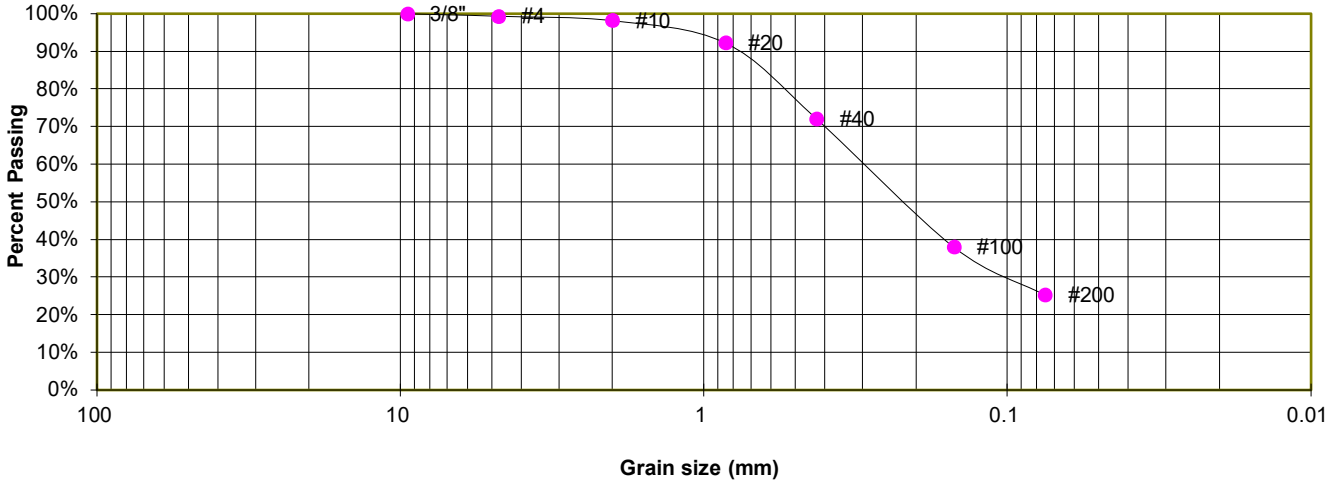
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-30

TEST BORING	38	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.4%
10	98.2%
20	92.3%
40	72.1%
100	38.0%
200	25.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

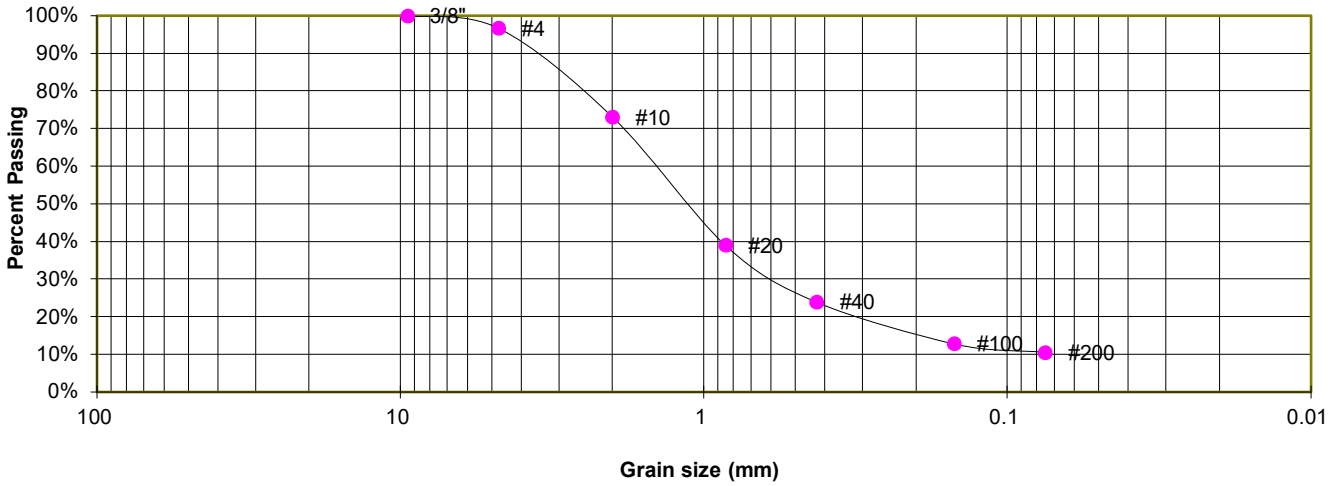
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-31

TEST BORING	39	SOIL DESCRIPTION	SAND, WITH SILT
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	96.7%
10	73.0%
20	39.1%
40	23.9%
100	12.9%
200	10.5%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM

ENTECH ENGINEERING, INC.

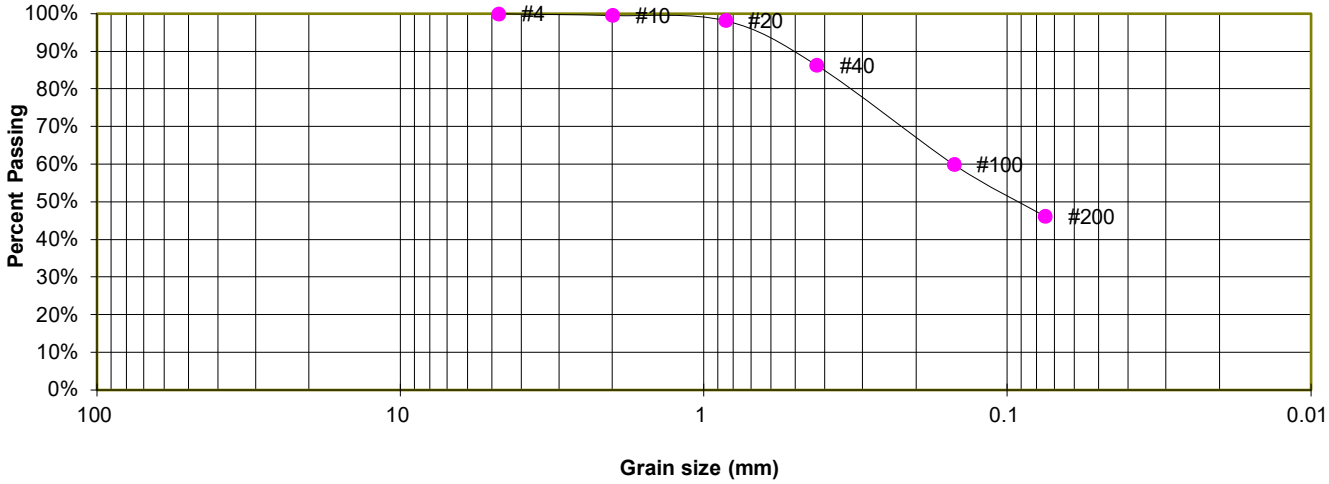
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-32

TEST BORING	43	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.6%
20	98.2%
40	86.4%
100	60.0%
200	46.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

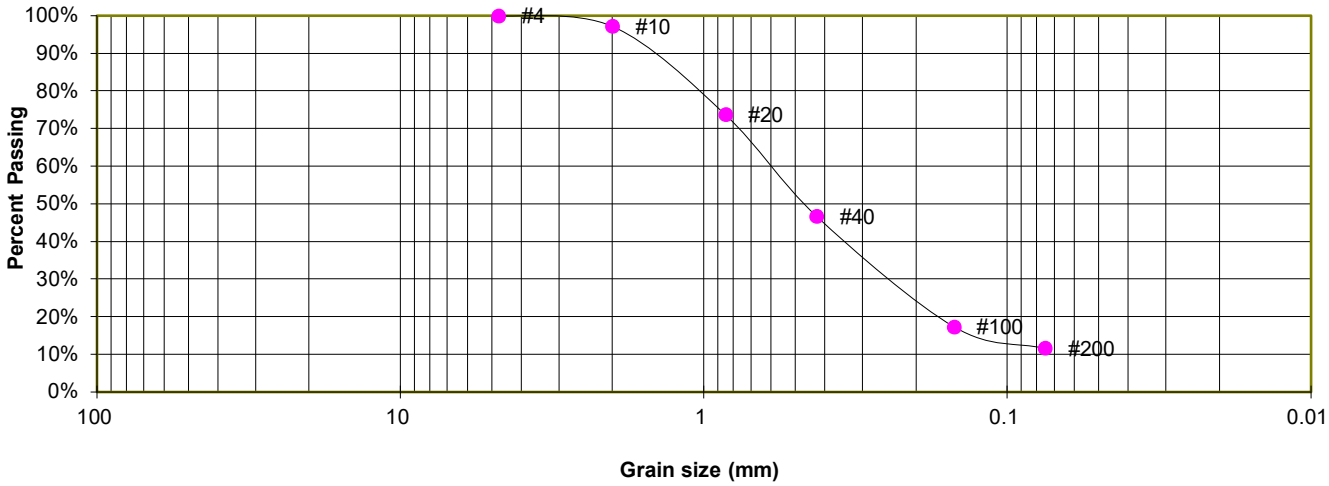
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-33

TEST BORING	44	SOIL DESCRIPTION	SAND, WITH CLAY and SILT
DEPTH (FT)	15	SOIL TYPE	1



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	73.7%
40	46.7%
100	17.4%
200	11.6%

ATTERBERG LIMITS

Plastic Limit	16
Liquid Limit	23
Plastic Index	7

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SC-SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

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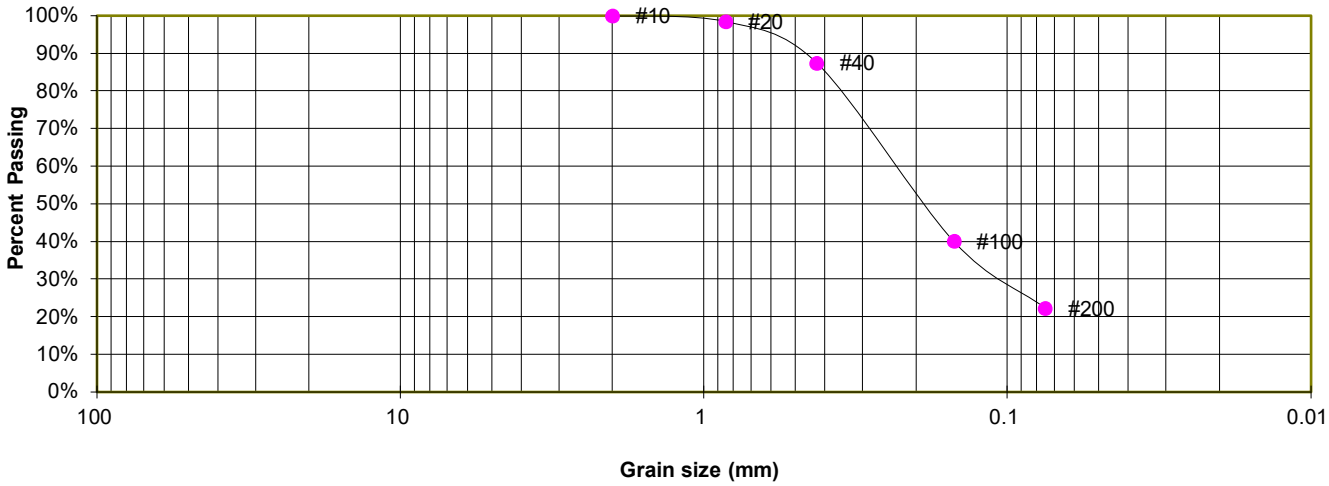
FIG. C-34

TEST BORING	45	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	98.5%
40	87.5%
100	40.1%
200	22.3%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

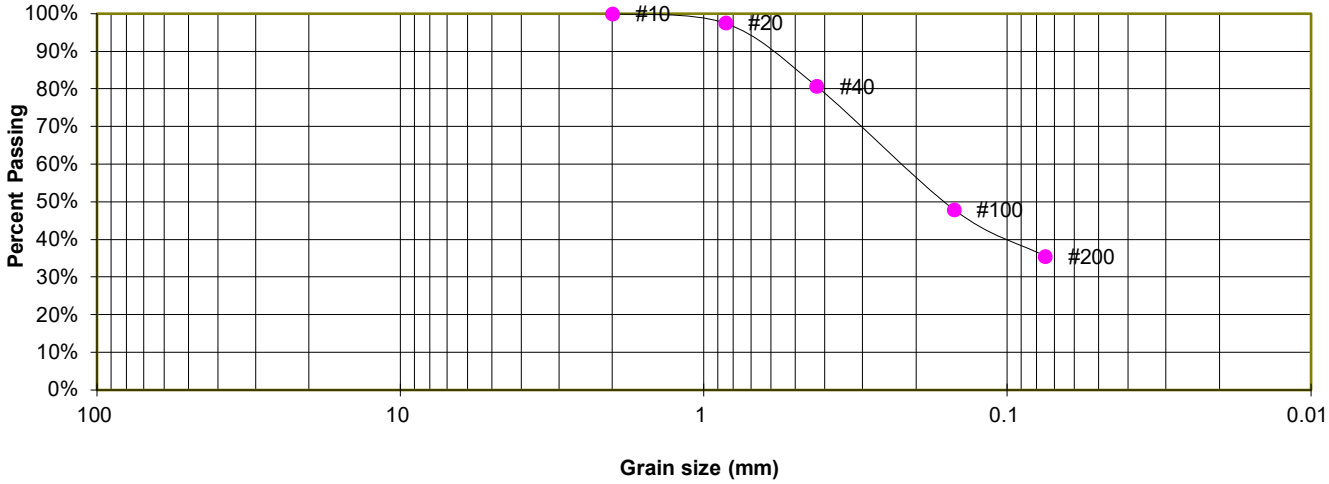
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-35

TEST BORING	46	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	97.5%
40	80.7%
100	48.0%
200	35.5%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

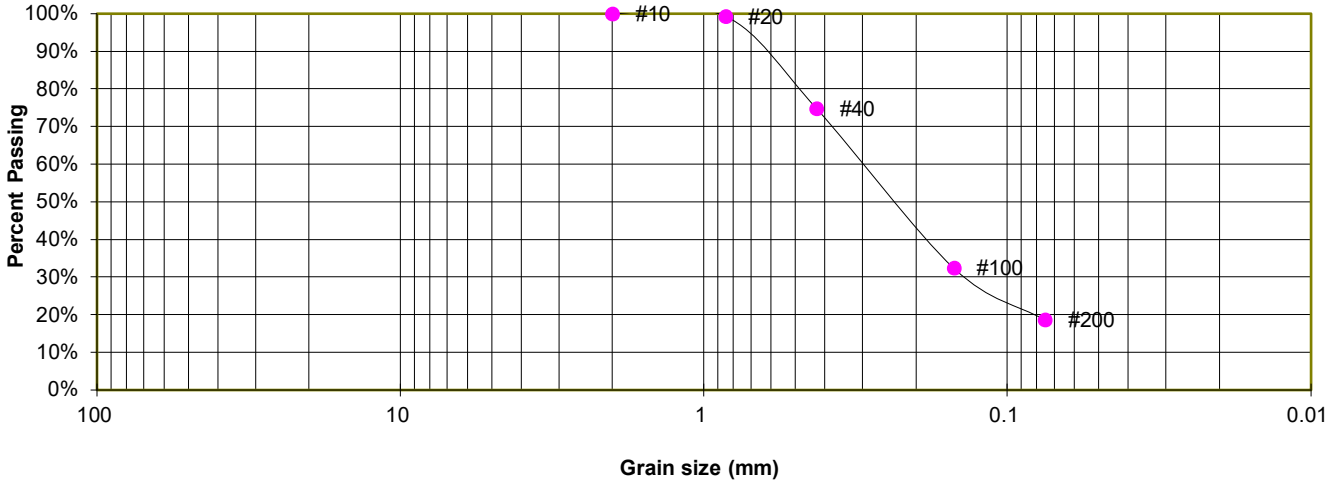
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-36

TEST BORING	47	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.3%
40	74.8%
100	32.4%
200	18.7%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

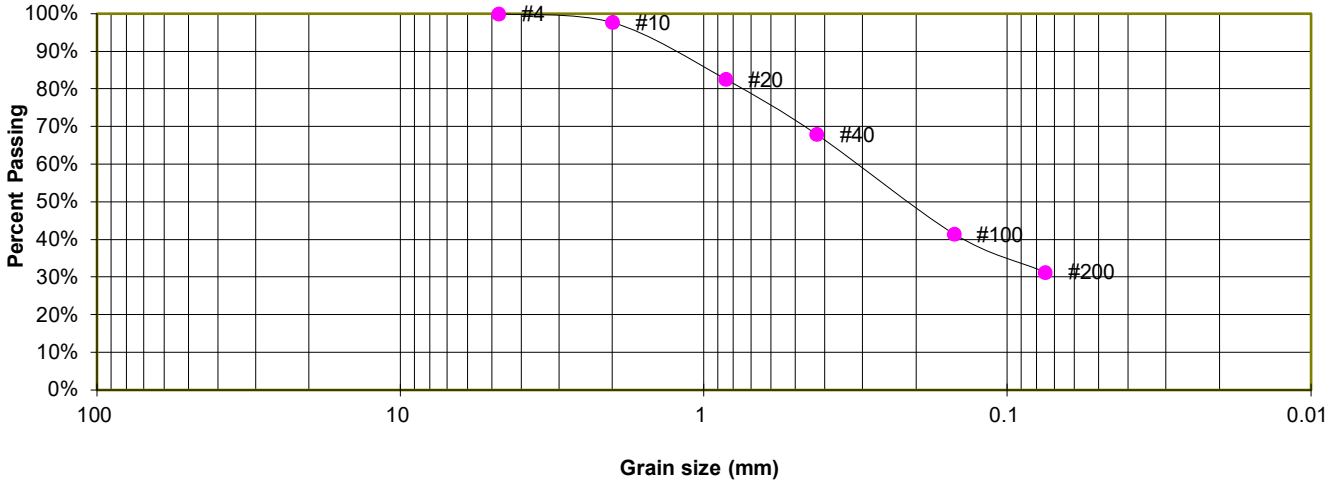
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-37

TEST BORING	50	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"	
3/8"	
4	100.0%
10	97.7%
20	82.6%
40	68.0%
100	41.5%
200	31.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

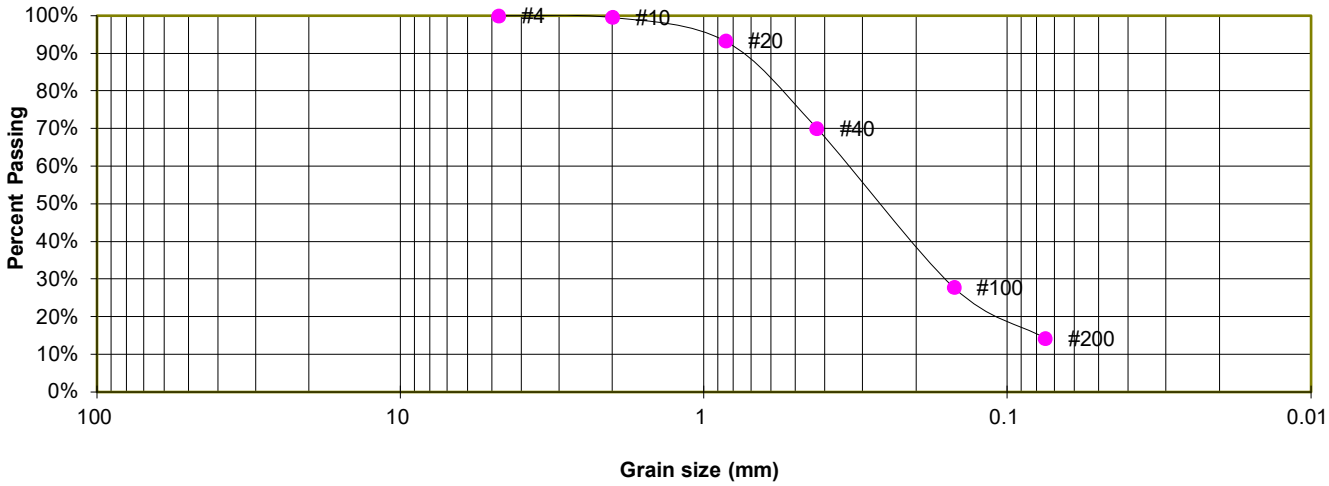
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-38

TEST BORING	52	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.6%
20	93.3%
40	70.1%
100	27.8%
200	14.3%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

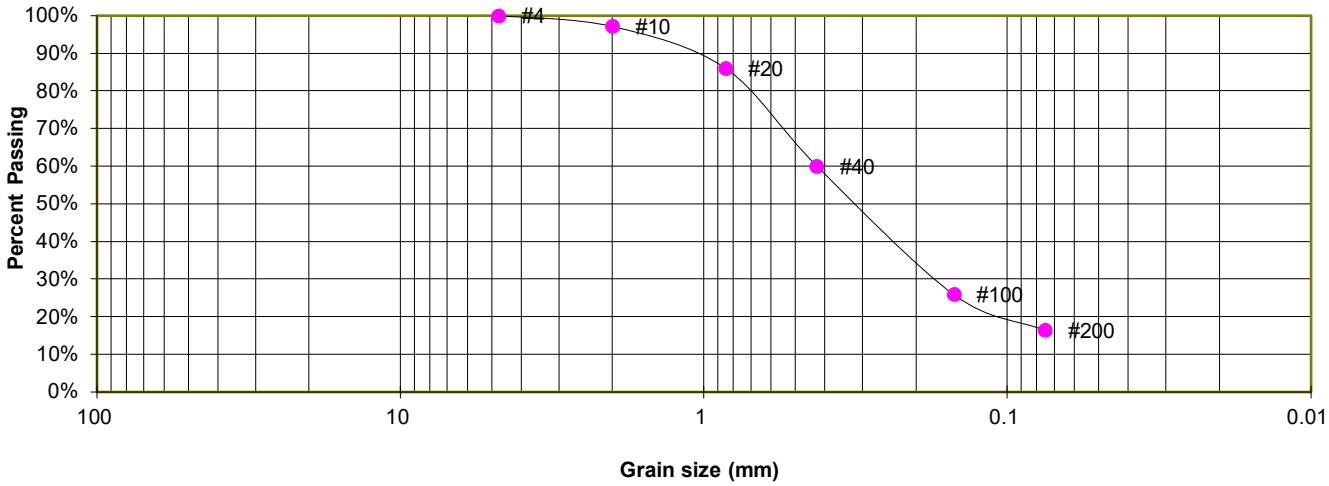
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-39

TEST BORING	53	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



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	86.0%
40	60.1%
100	25.9%
200	16.4%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

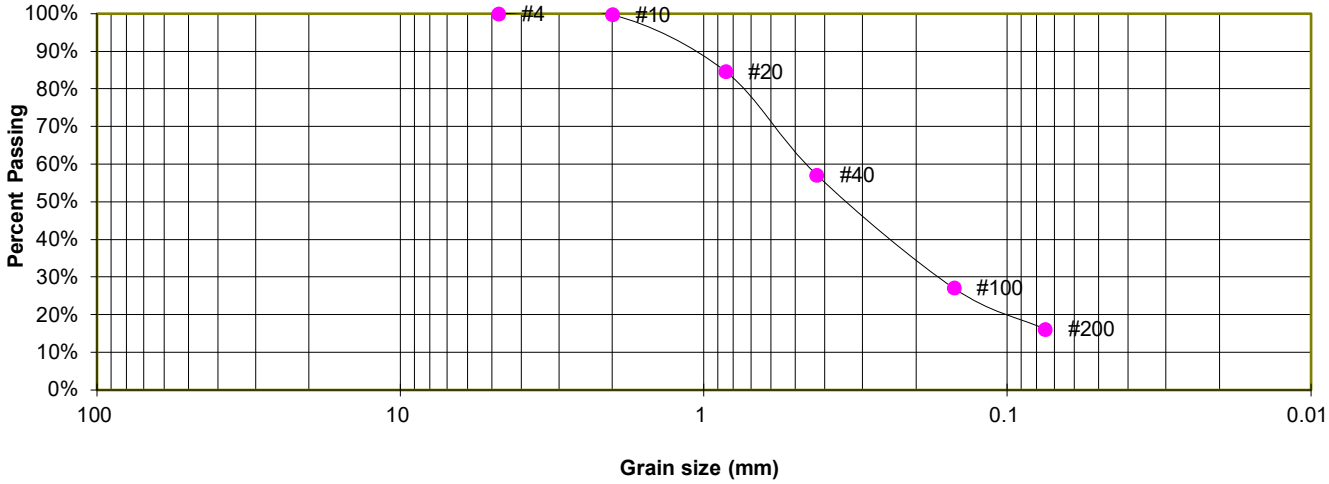
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-40

TEST BORING	54	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.8%
20	84.7%
40	57.2%
100	27.1%
200	16.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

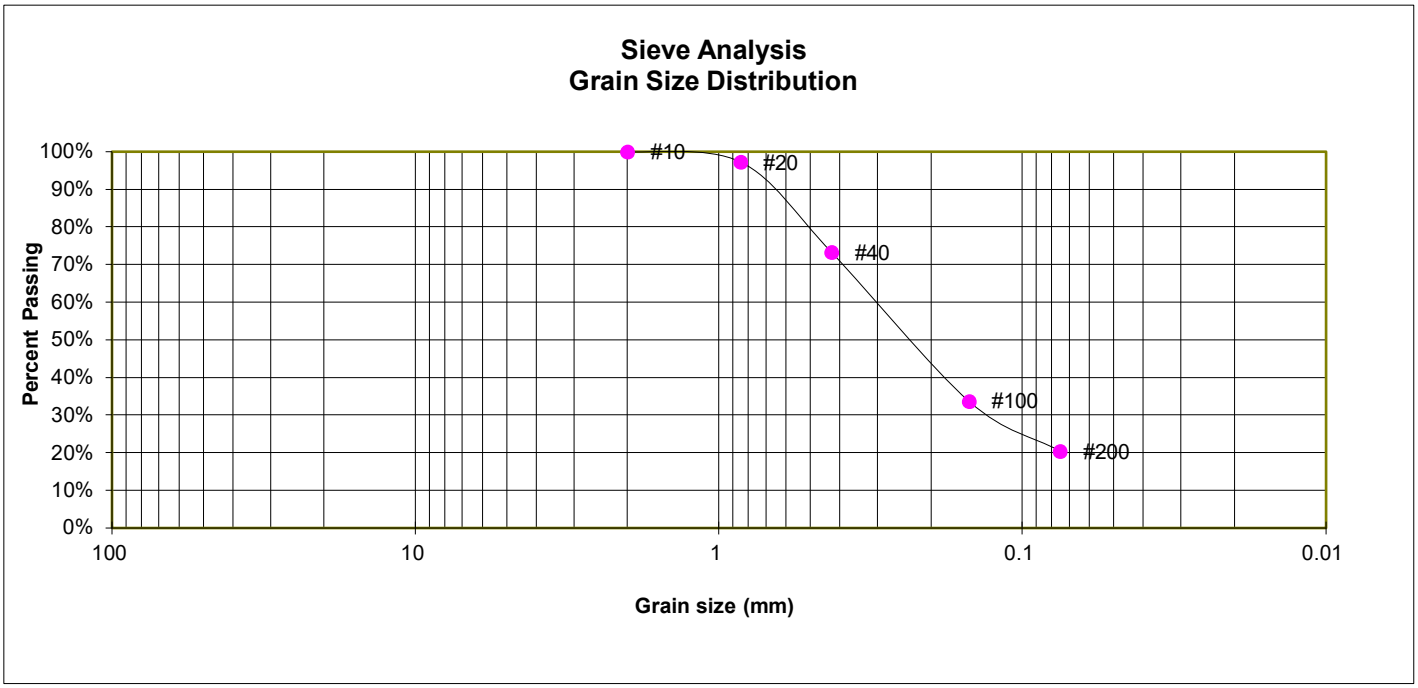
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-41

TEST BORING	55	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"	
3/8"	
4	
10	100.0%
20	97.3%
40	73.3%
100	33.7%
200	20.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

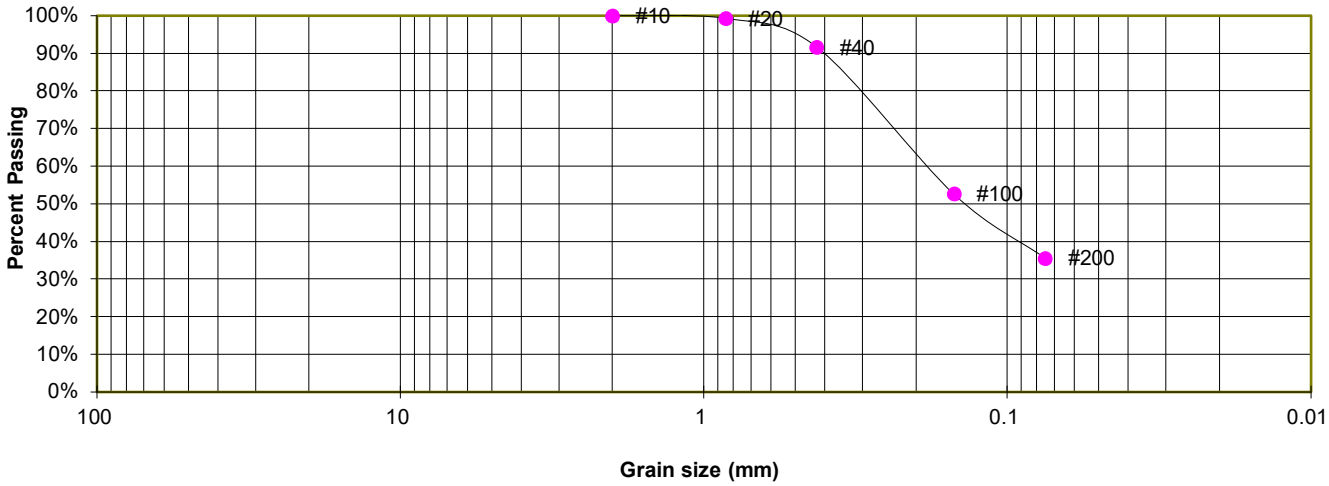
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-42

TEST BORING	57	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"	
3/8"	
4	
10	100.0%
20	99.3%
40	91.7%
100	52.6%
200	35.6%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

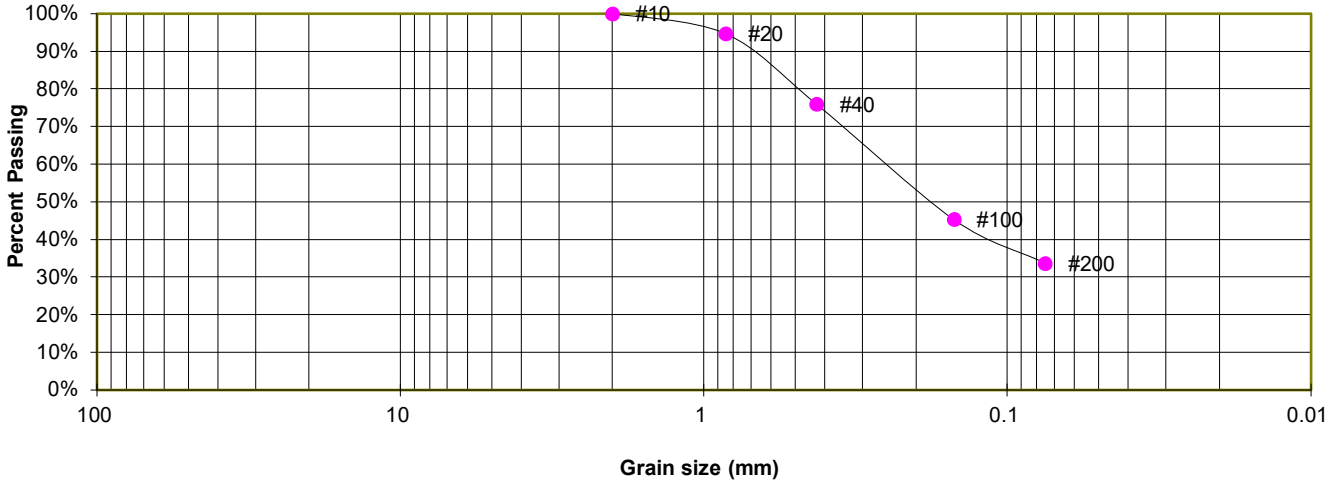
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-43

TEST BORING	58	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	94.8%
40	76.0%
100	45.3%
200	33.7%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

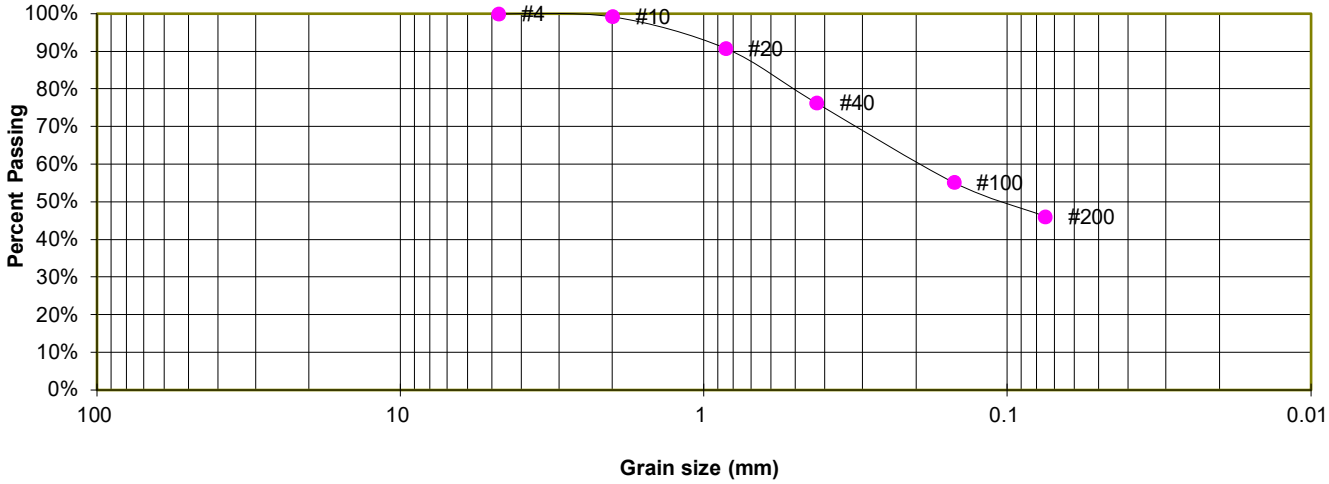
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-44

TEST BORING	59	SOIL DESCRIPTION	SAND, CLAYEY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.2%
20	90.8%
40	76.3%
100	55.2%
200	46.1%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SC

ENTECH ENGINEERING, INC.

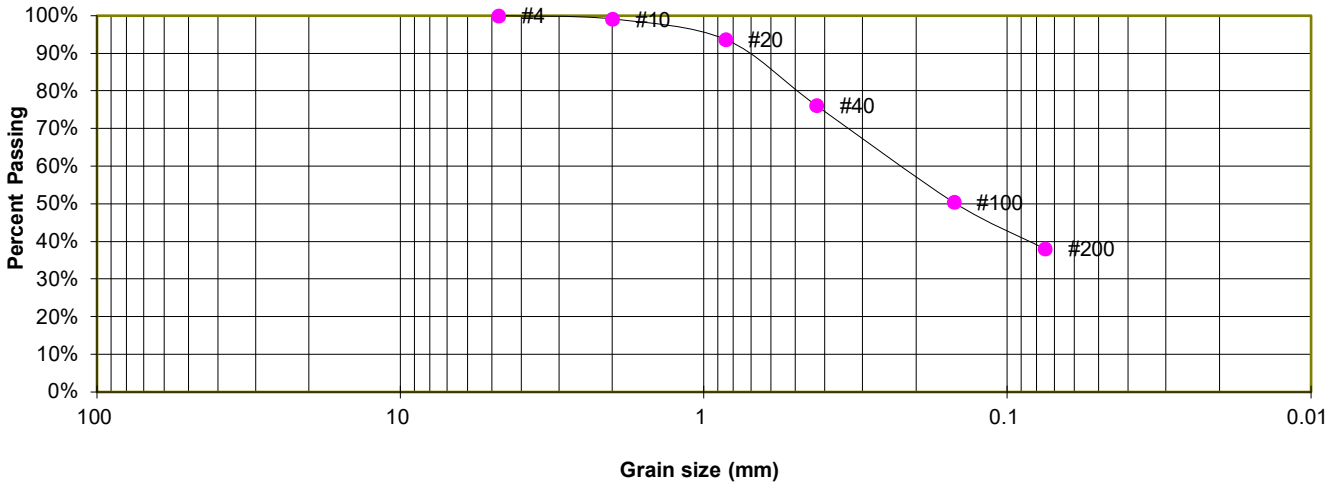
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-45

TEST BORING	60	SOIL DESCRIPTION	SAND, CLAYEY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.1%
20	93.7%
40	76.1%
100	50.5%
200	38.0%

ATTERBERG LIMITS

Plastic Limit	22
Liquid Limit	30
Plastic Index	8

SOIL CLASSIFICATION

USCS CLASSIFICATION: SC

ENTECH ENGINEERING, INC.

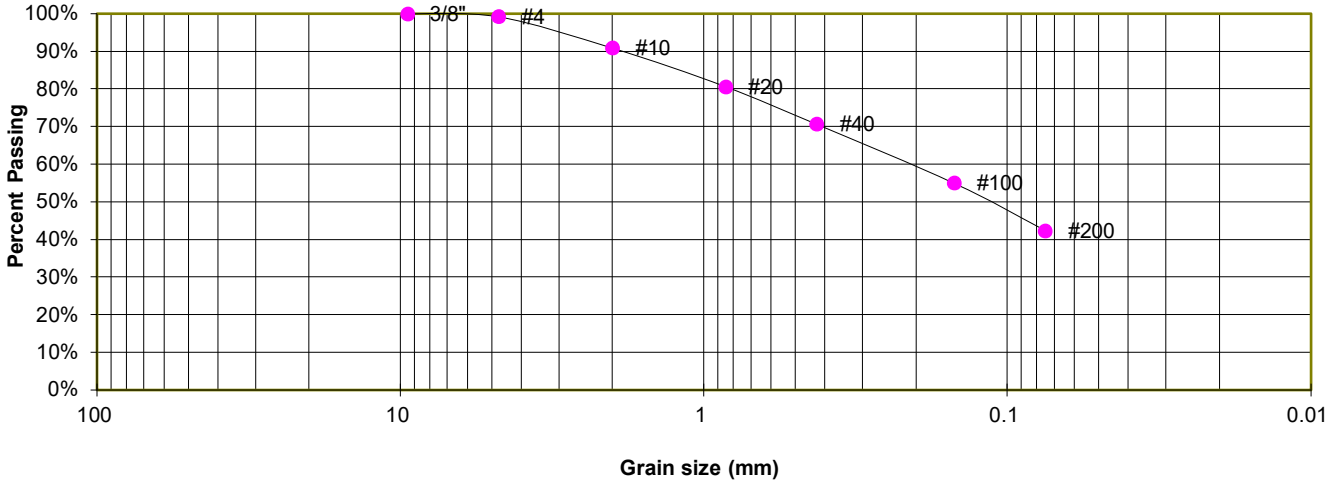
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-46

TEST BORING	61	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"	
3/8"	100.0%
4	99.2%
10	90.9%
20	80.7%
40	70.7%
100	55.0%
200	42.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

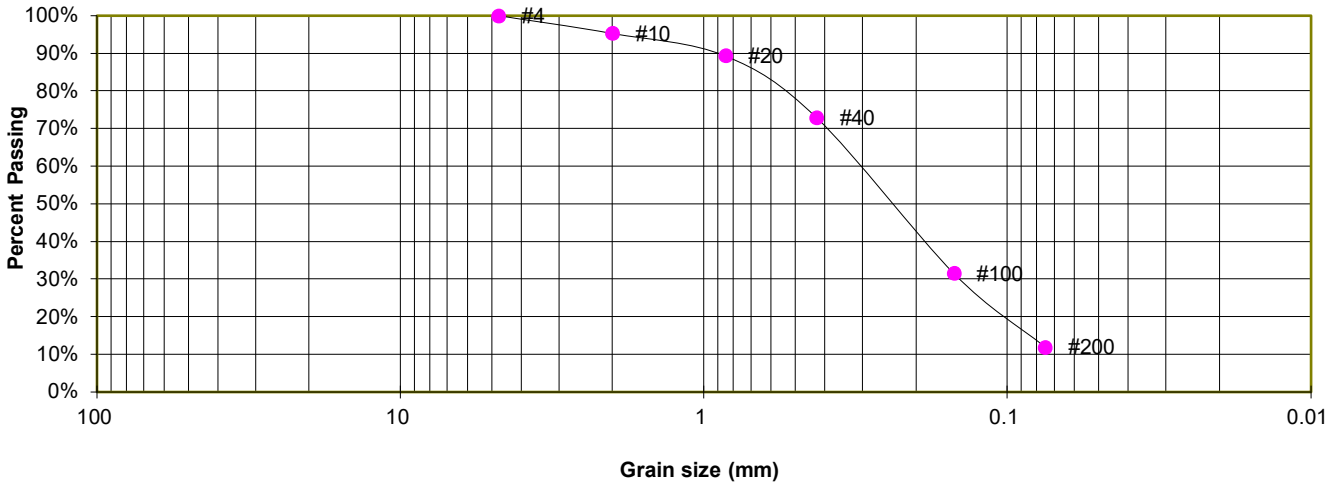
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-47

TEST BORING	62	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	95.3%
20	89.4%
40	72.9%
100	31.5%
200	12.0%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

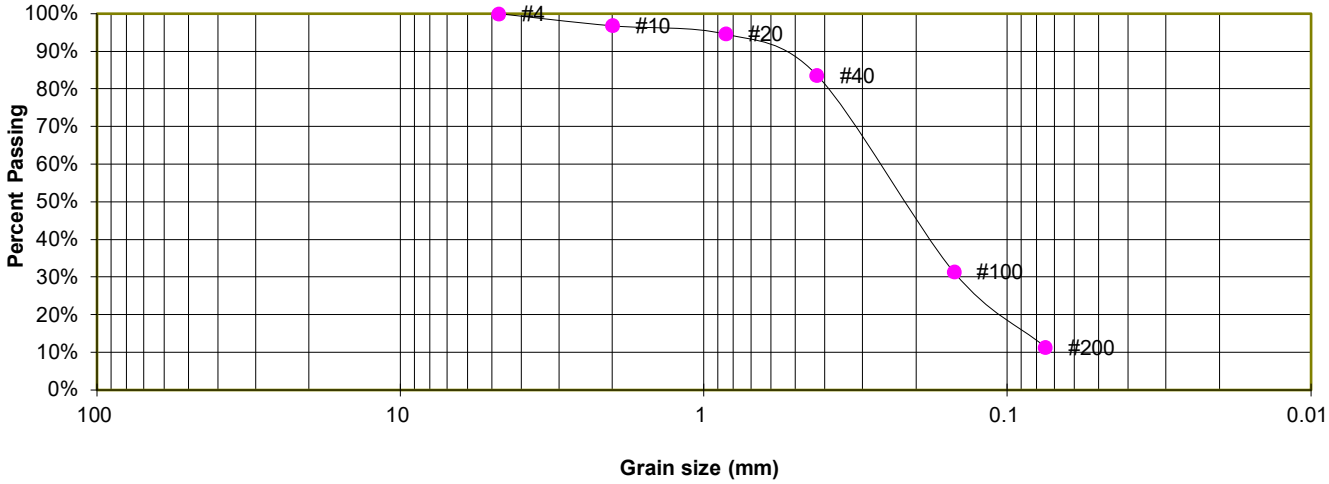
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-48

TEST BORING	63	SOIL DESCRIPTION	SAND, WITH SILT
DEPTH (FT)	2-3	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	96.8%
20	94.7%
40	83.6%
100	31.4%
200	11.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM

ENTECH ENGINEERING, INC.

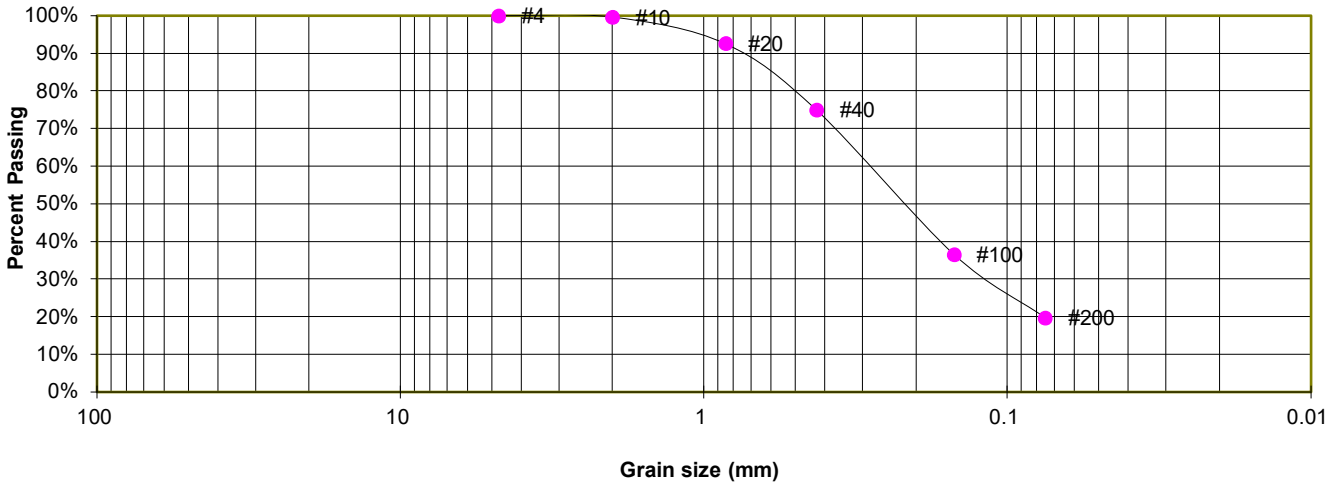
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-49

TEST BORING	64	SOIL DESCRIPTION	SAND,S ILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.6%
20	92.6%
40	74.9%
100	36.6%
200	19.7%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

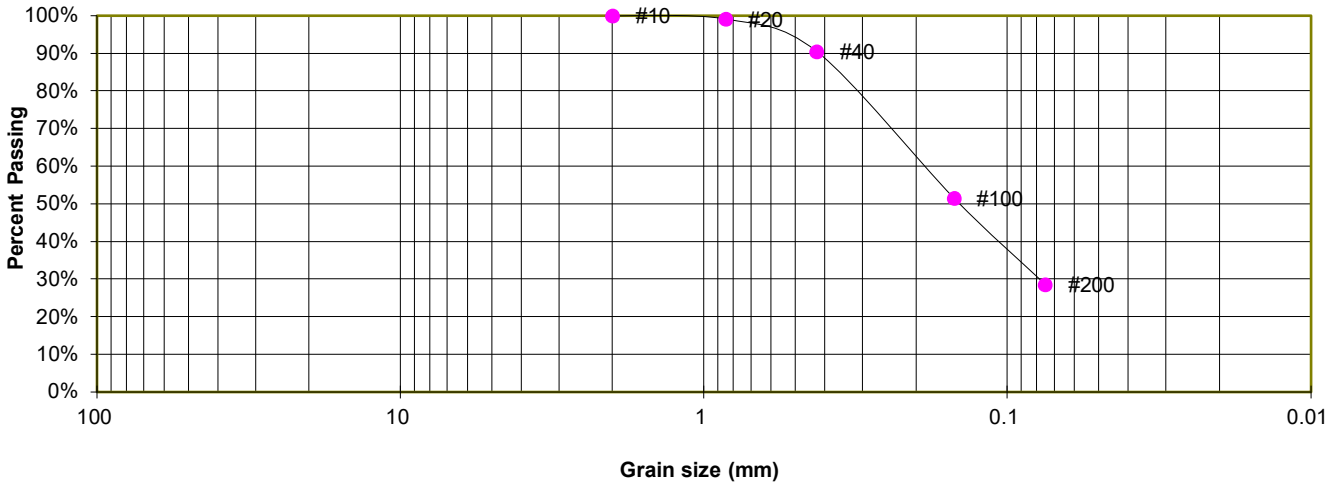
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-50

TEST BORING	65	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.2%
40	90.5%
100	51.6%
200	28.6%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

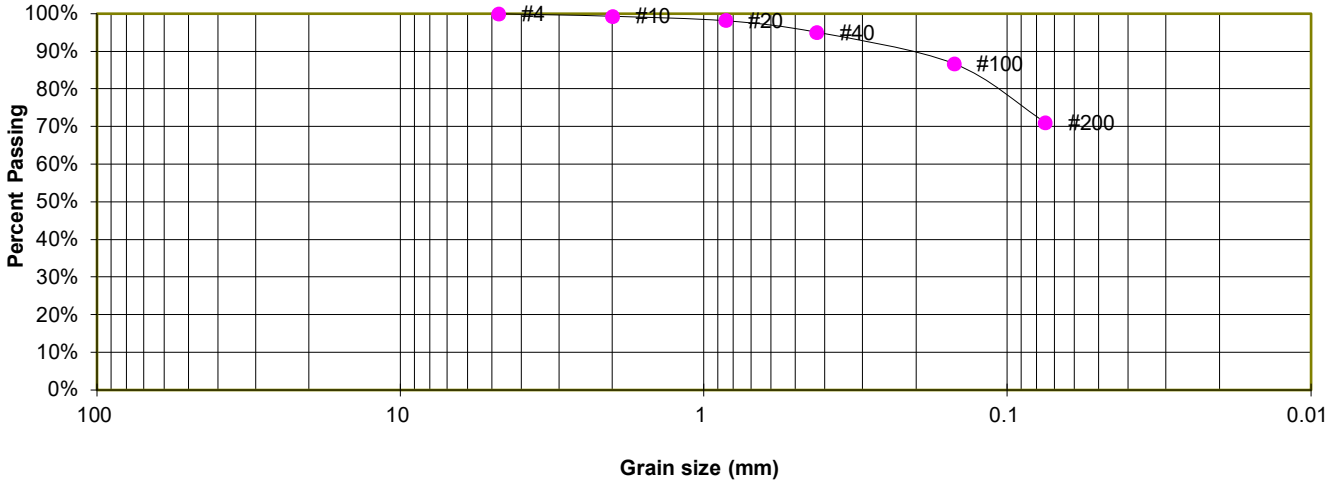
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-51

TEST BORING	66	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	2-3	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.4%
20	98.2%
40	95.1%
100	86.8%
200	71.1%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

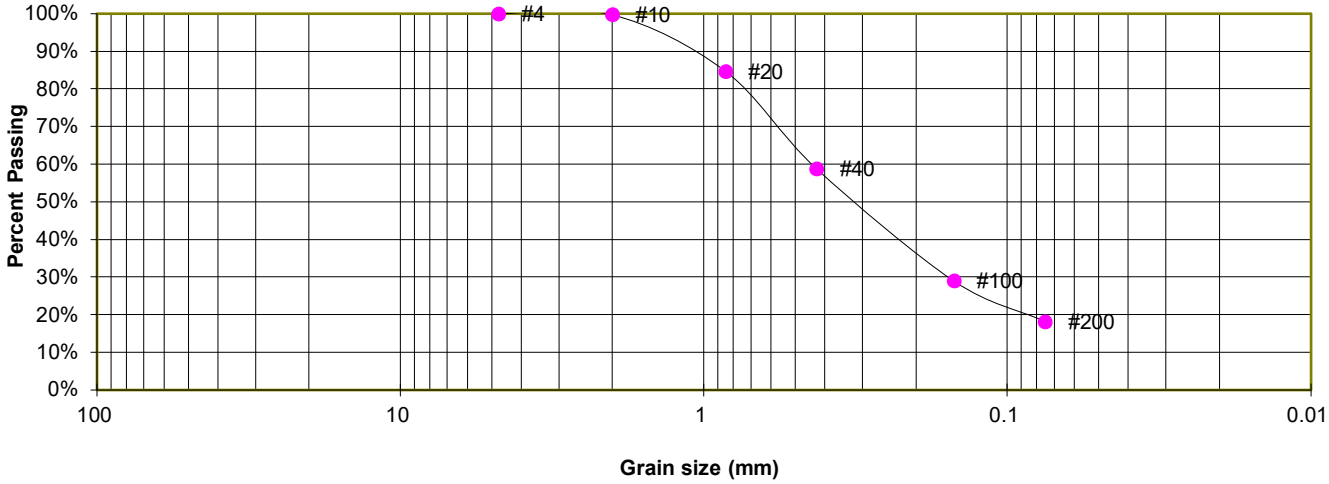
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-52

TEST BORING	68	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.8%
20	84.7%
40	58.8%
100	29.0%
200	18.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

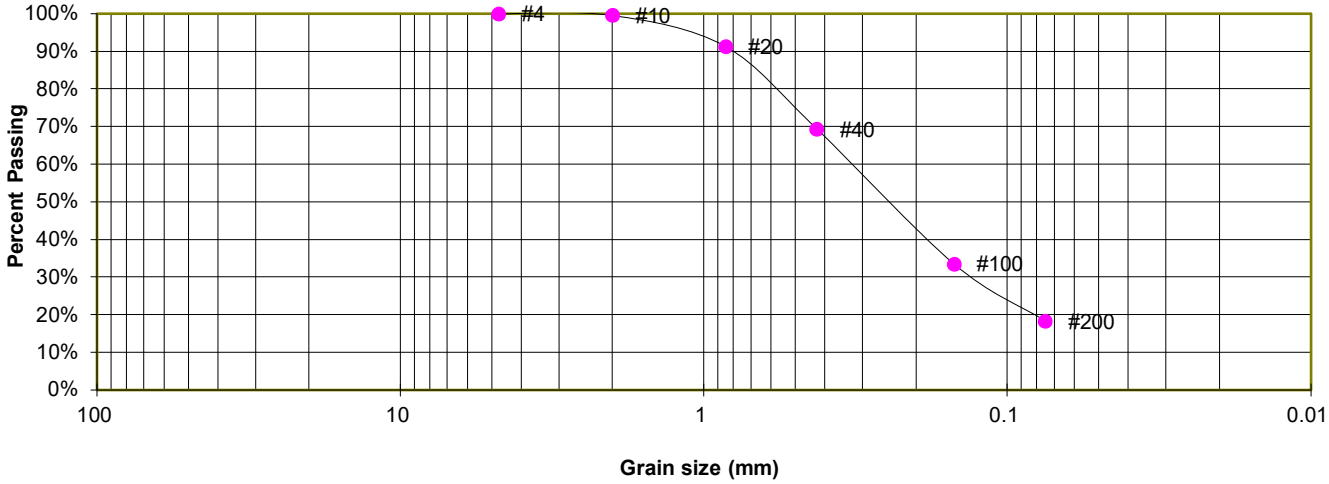
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-53

TEST BORING	70	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.6%
20	91.3%
40	69.4%
100	33.6%
200	18.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

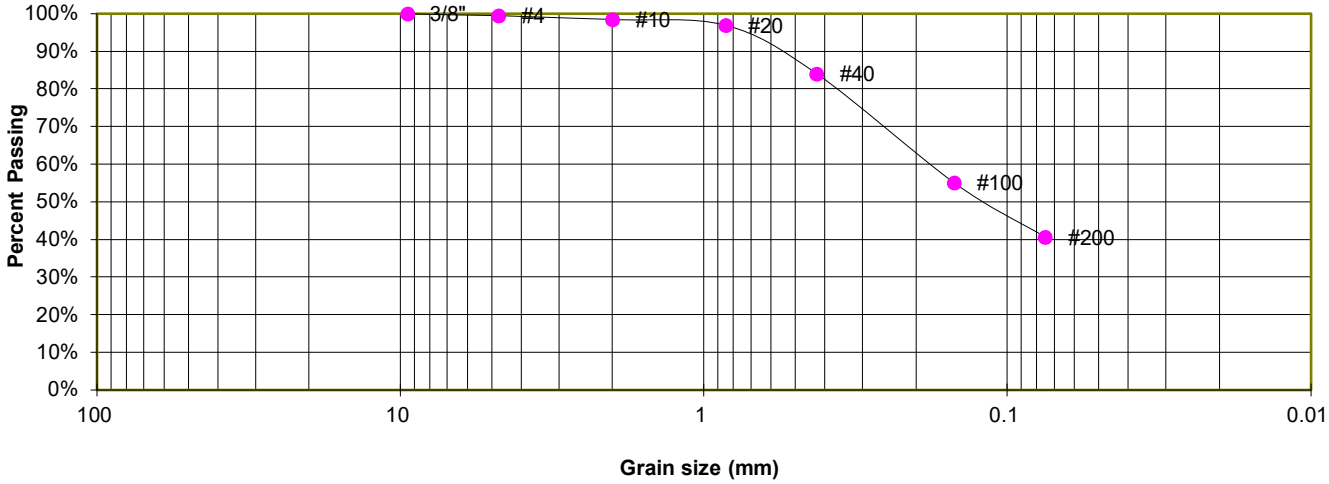
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-54

TEST BORING	71	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.5%
10	98.5%
20	97.0%
40	84.1%
100	55.1%
200	40.6%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

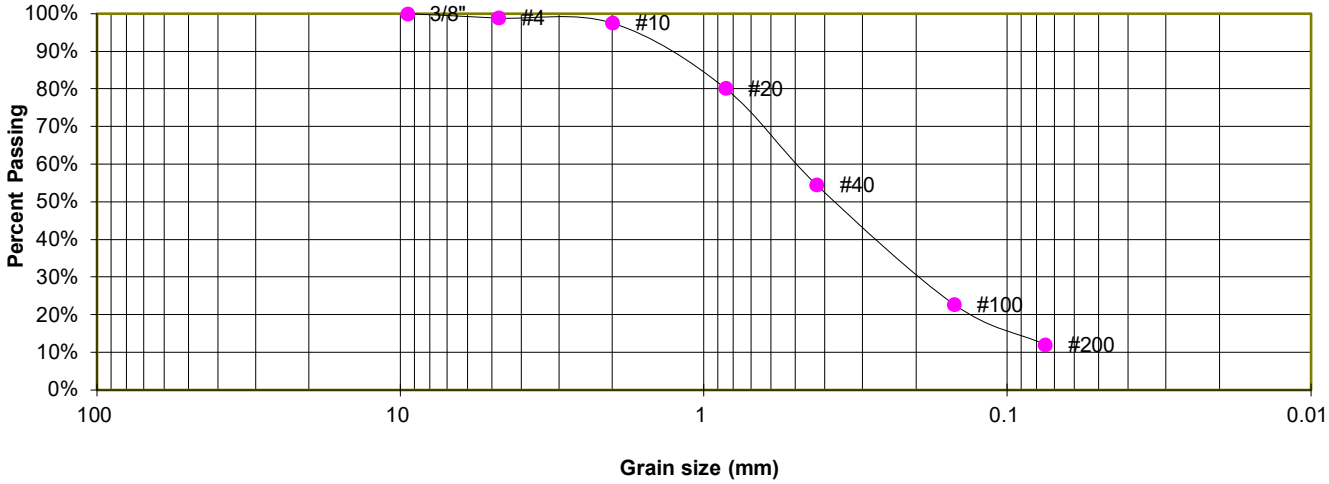
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-55

TEST BORING	72	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"	
3/8"	100.0%
4	98.9%
10	97.6%
20	80.2%
40	54.6%
100	22.8%
200	12.1%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

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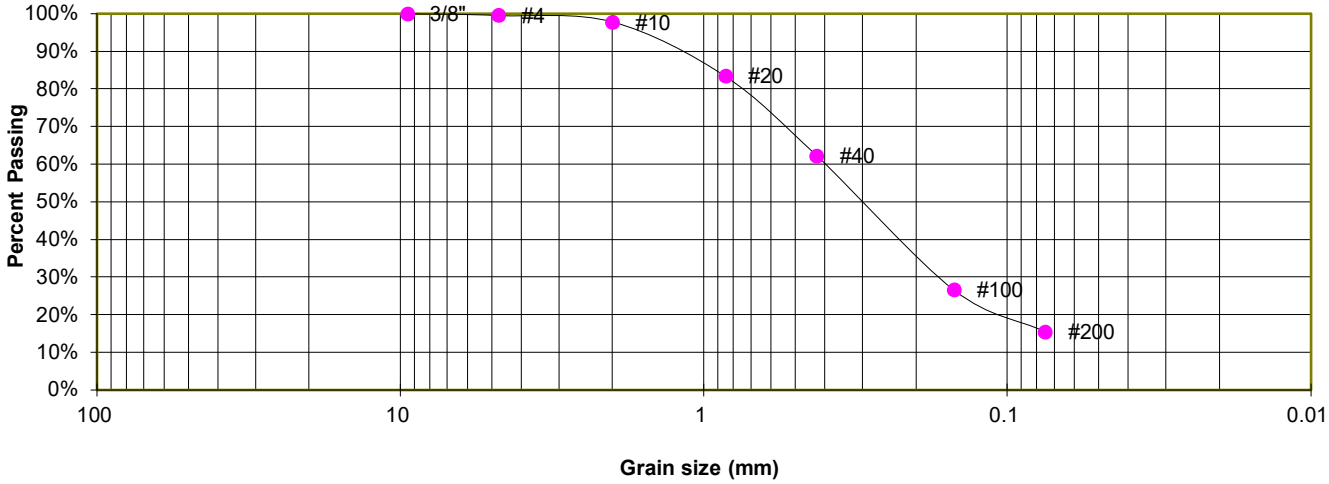
FIG. C-56

TEST BORING	73	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"	
3/8"	100.0%
4	99.6%
10	97.8%
20	83.4%
40	62.2%
100	26.6%
200	15.5%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

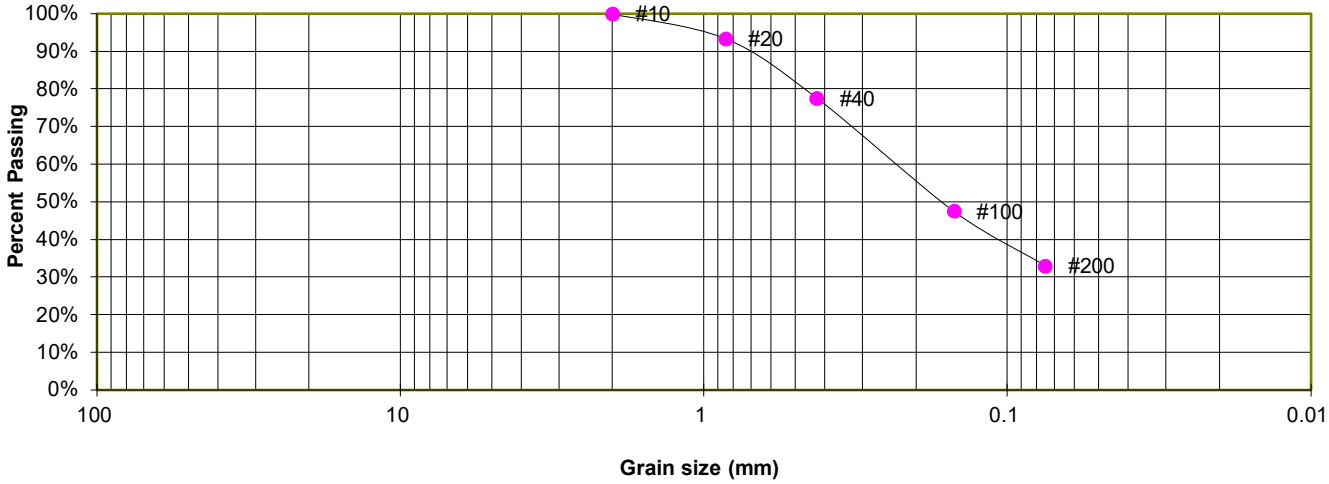
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-57

TEST BORING	75	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	93.4%
40	77.6%
100	47.6%
200	33.1%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

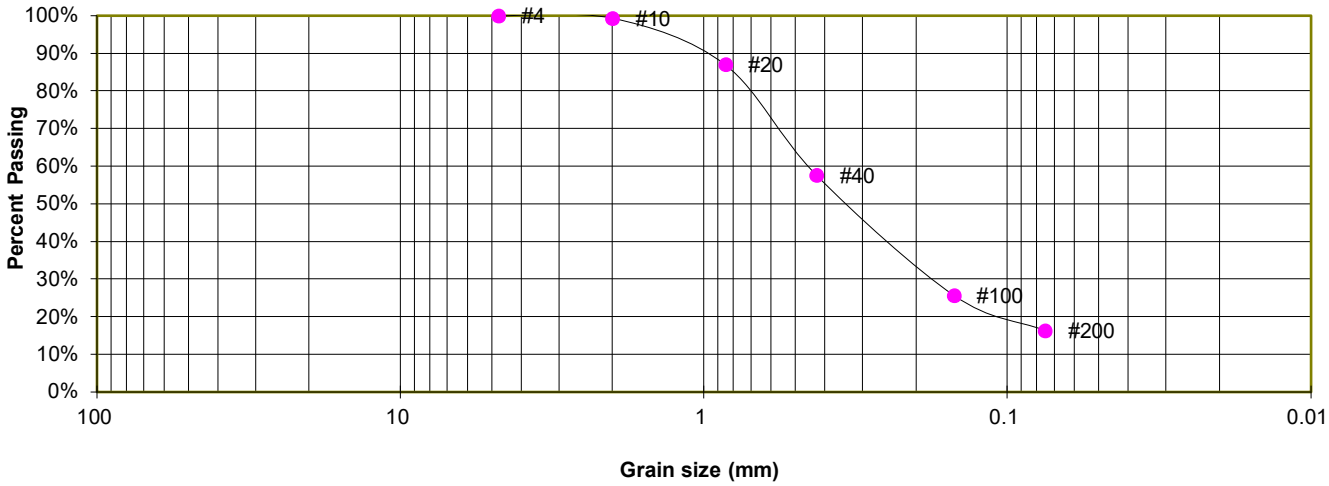
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-58

TEST BORING	77	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.3%
20	87.0%
40	57.6%
100	25.7%
200	16.3%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

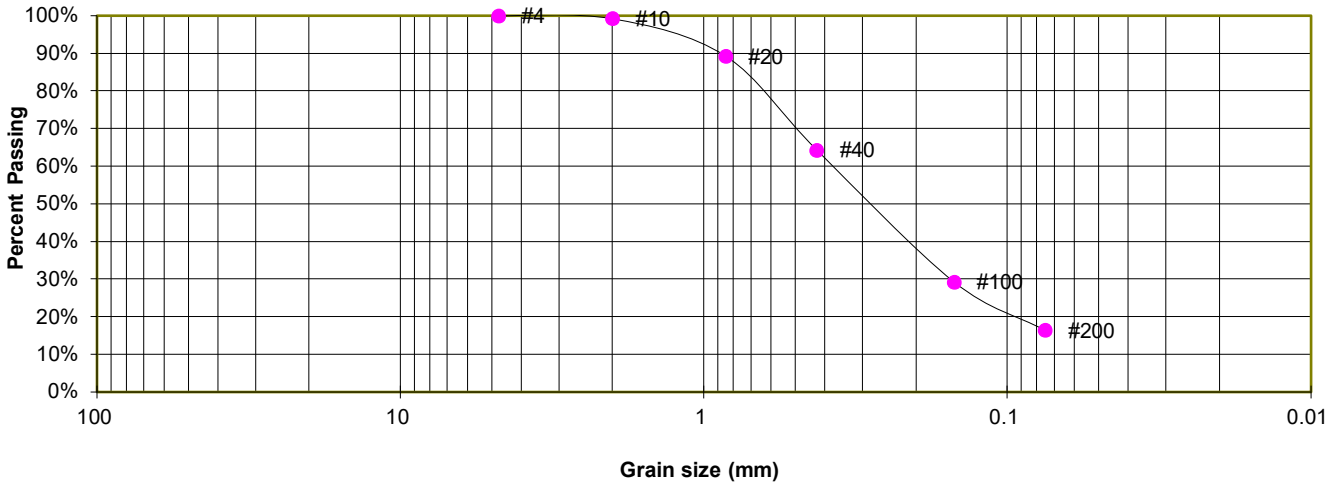
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-59

TEST BORING	79	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.3%
20	89.3%
40	64.3%
100	29.3%
200	16.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

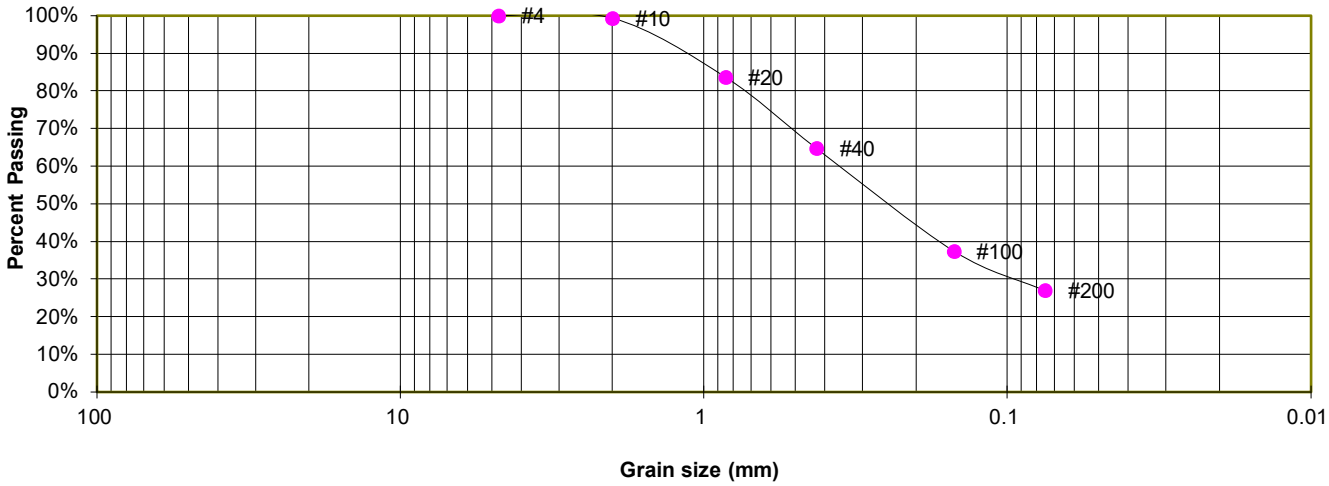
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-60

TEST BORING	80	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.3%
20	83.7%
40	64.8%
100	37.4%
200	27.0%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

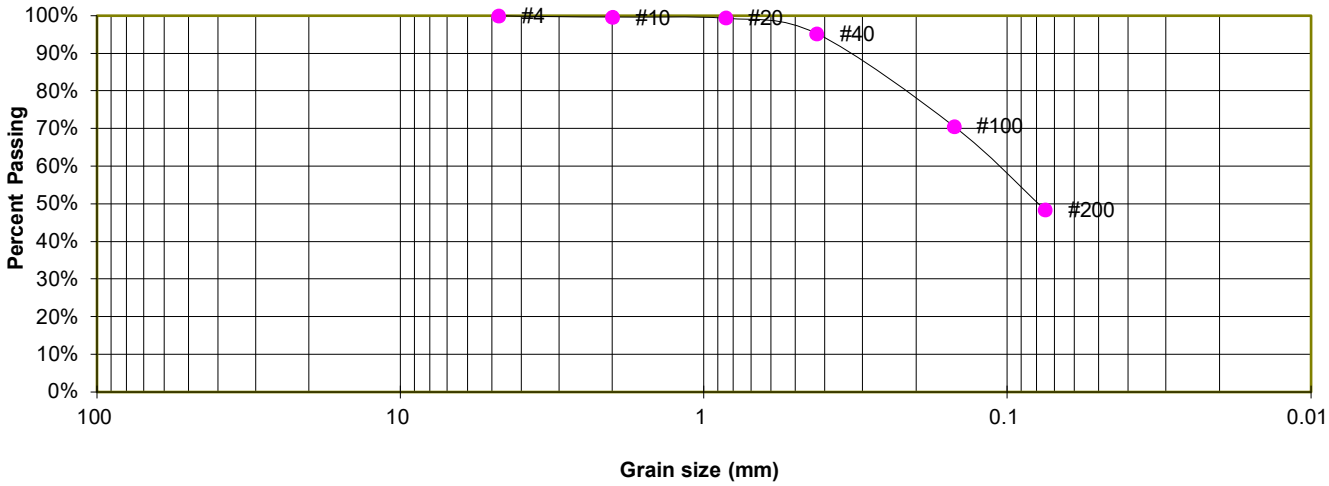
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-61

TEST BORING	69	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	15	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.7%
20	99.4%
40	95.2%
100	70.6%
200	48.4%

ATTERBERG LIMITS

Plastic Limit	39
Liquid Limit	49
Plastic Index	10

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

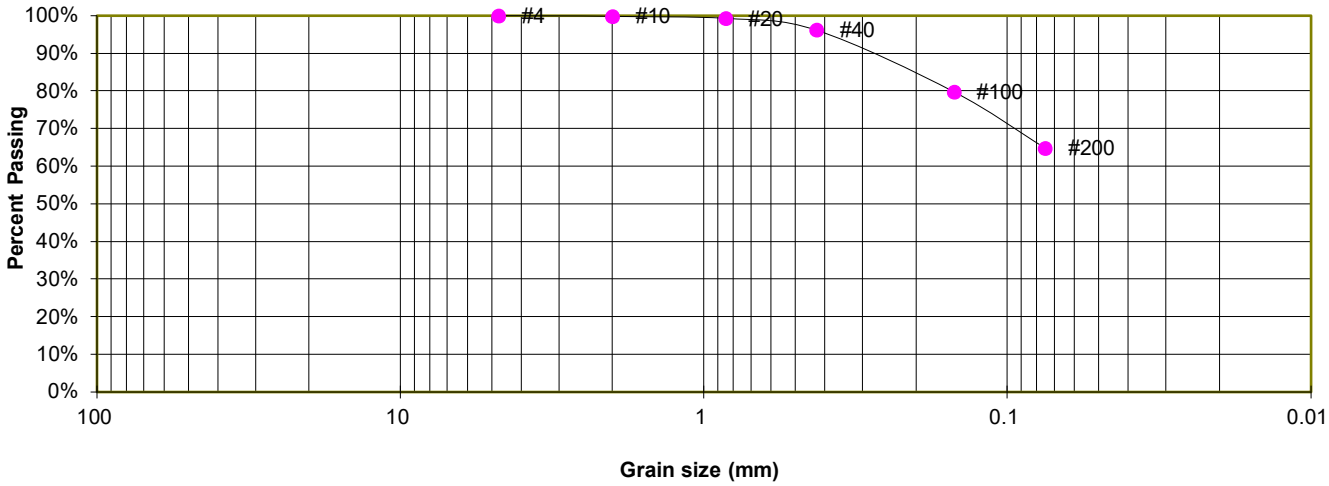
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-62

TEST BORING	76	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	2-3	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	99.9%
20	99.3%
40	96.2%
100	79.8%
200	64.8%

ATTERBERG LIMITS

Plastic Limit	22
Liquid Limit	30
Plastic Index	8

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

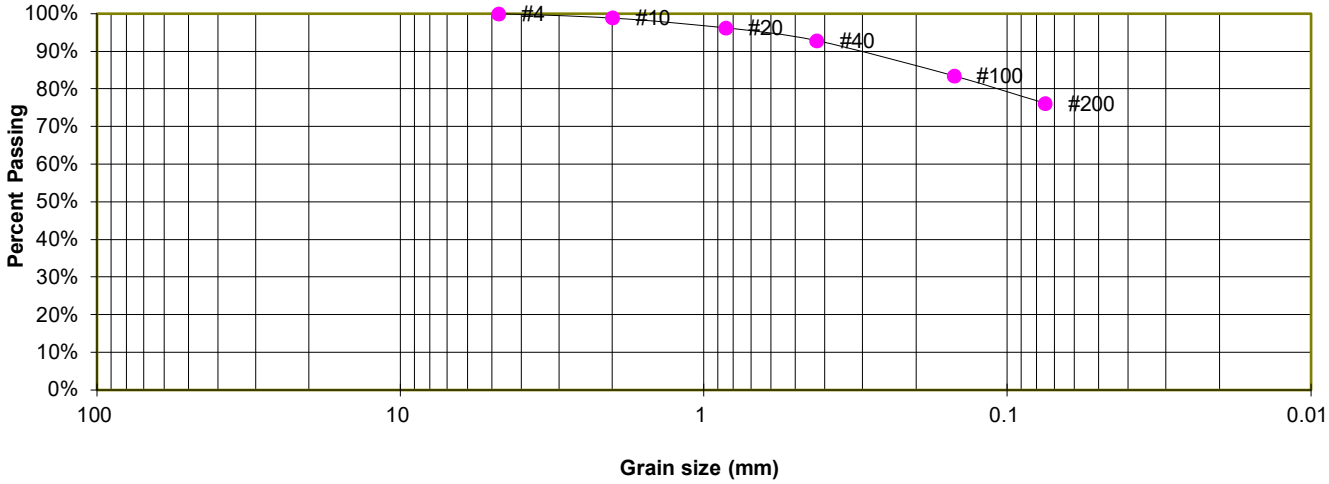
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-63

TEST BORING	3	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	5	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	98.9%
20	96.2%
40	92.9%
100	83.5%
200	76.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

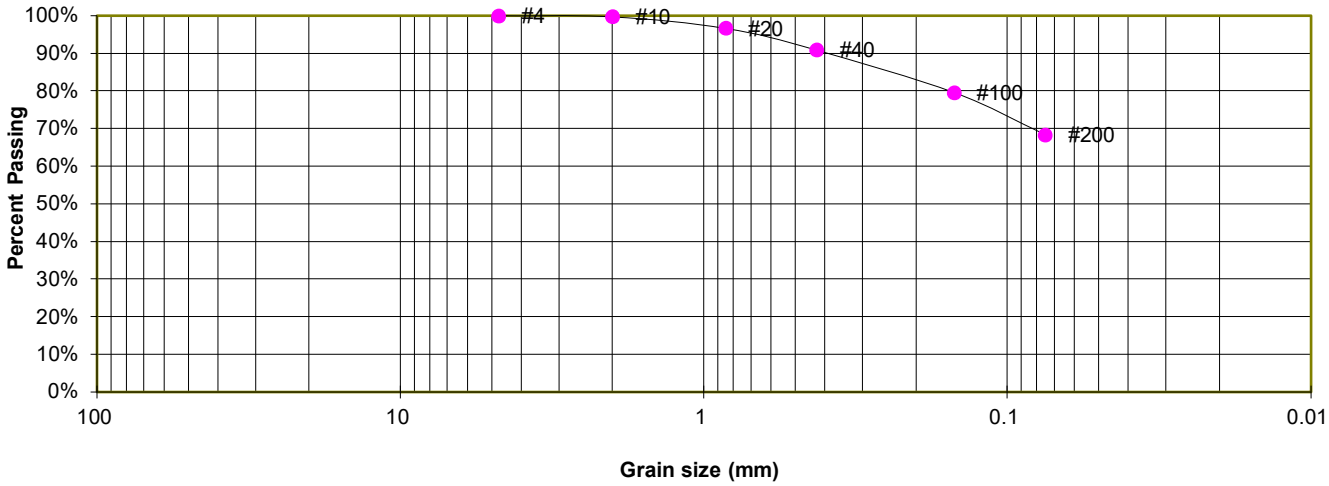
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-64

TEST BORING	7	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	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	99.8%
20	96.7%
40	90.9%
100	79.6%
200	68.4%

ATTERBERG LIMITS

Plastic Limit	21
Liquid Limit	29
Plastic Index	8

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

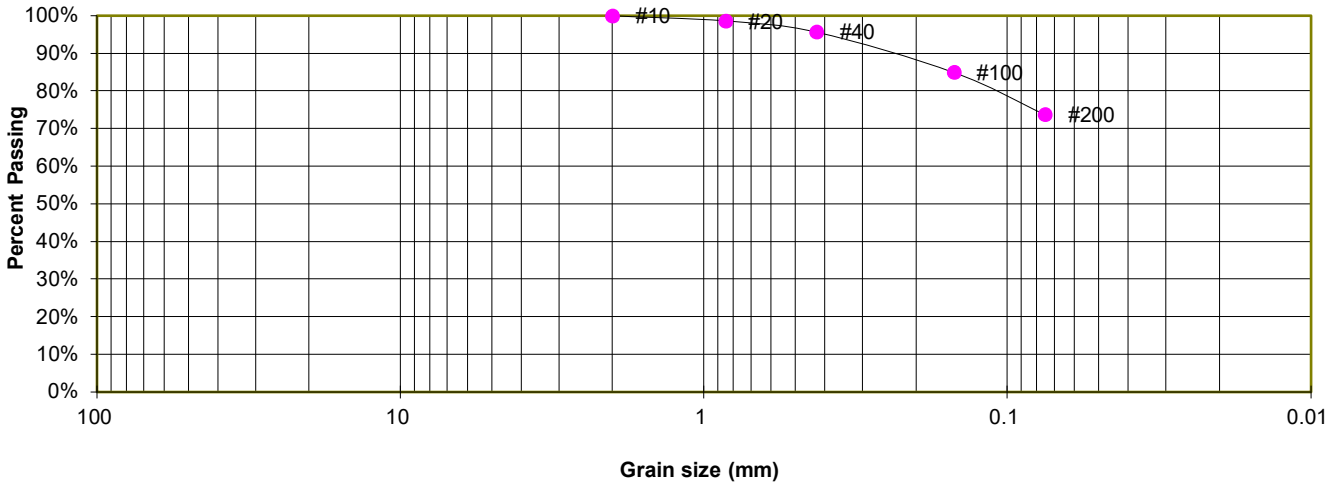
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-65

TEST BORING	16	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	2-3	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	98.6%
40	95.7%
100	85.0%
200	73.7%

ATTERBERG LIMITS

Plastic Limit	19
Liquid Limit	26
Plastic Index	7

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

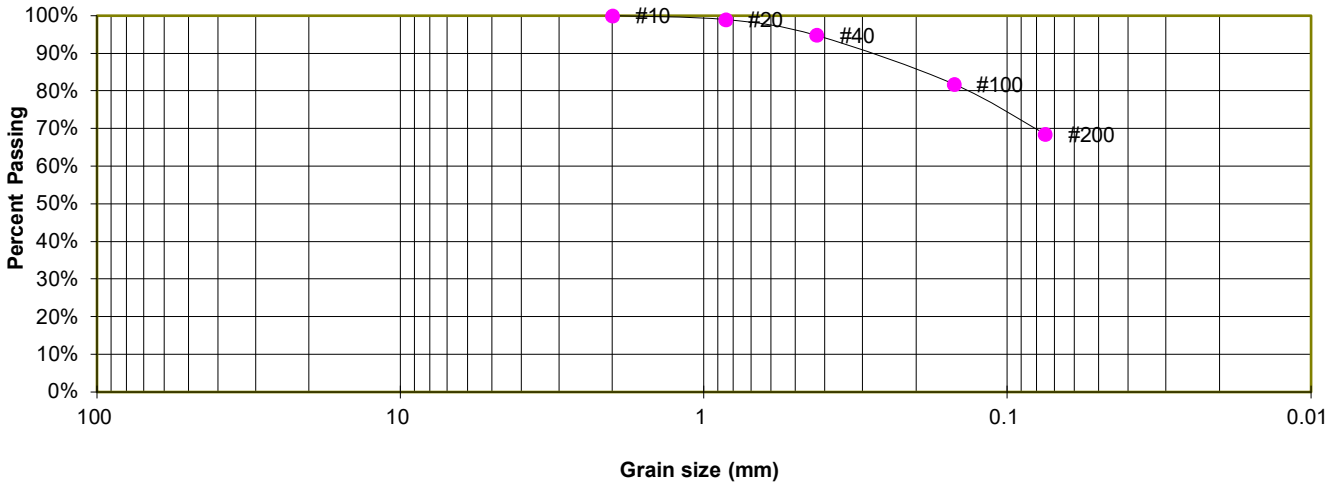
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-66

TEST BORING	22	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.0%
40	94.8%
100	81.8%
200	68.5%

ATTERBERG LIMITS

Plastic Limit	21
Liquid Limit	30
Plastic Index	9

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

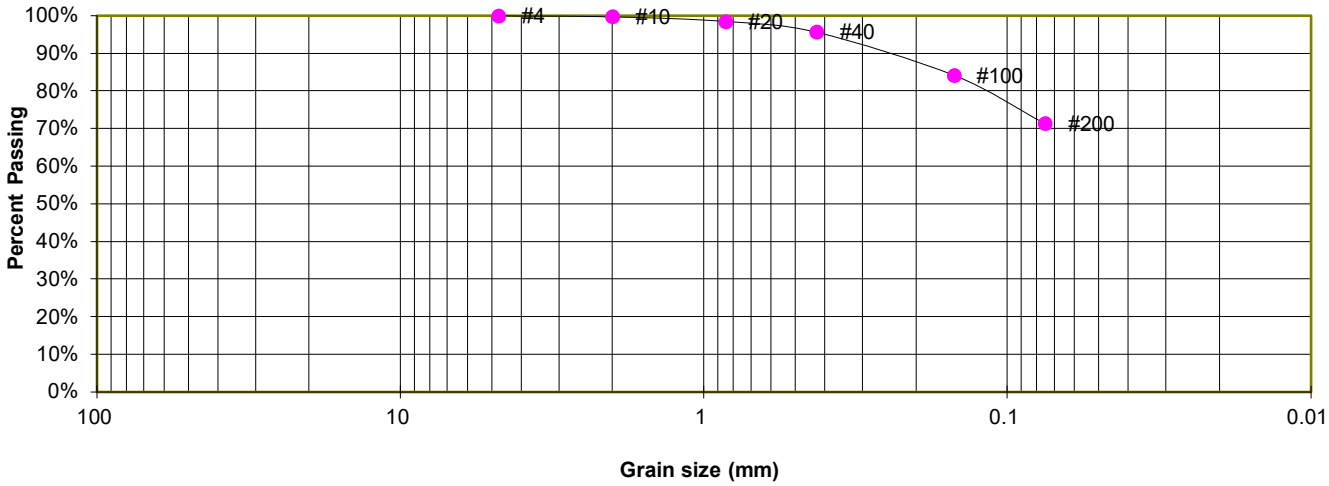
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-67

TEST BORING	23	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	2-3	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	99.7%
20	98.5%
40	95.7%
100	84.2%
200	71.3%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

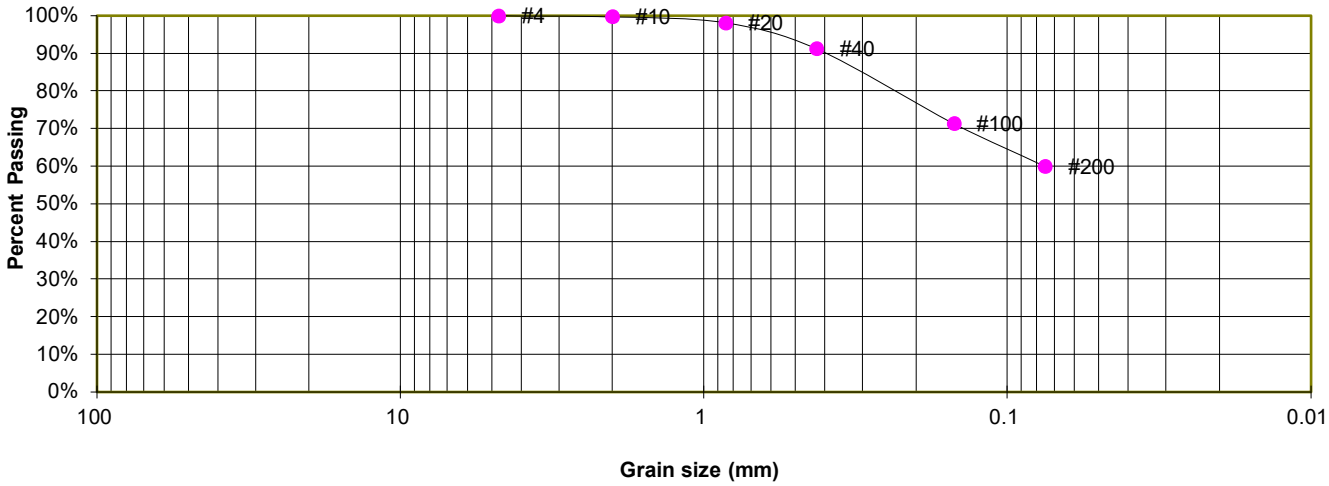
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-68

TEST BORING	28	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	2-3	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	99.8%
20	98.1%
40	91.3%
100	71.4%
200	59.9%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

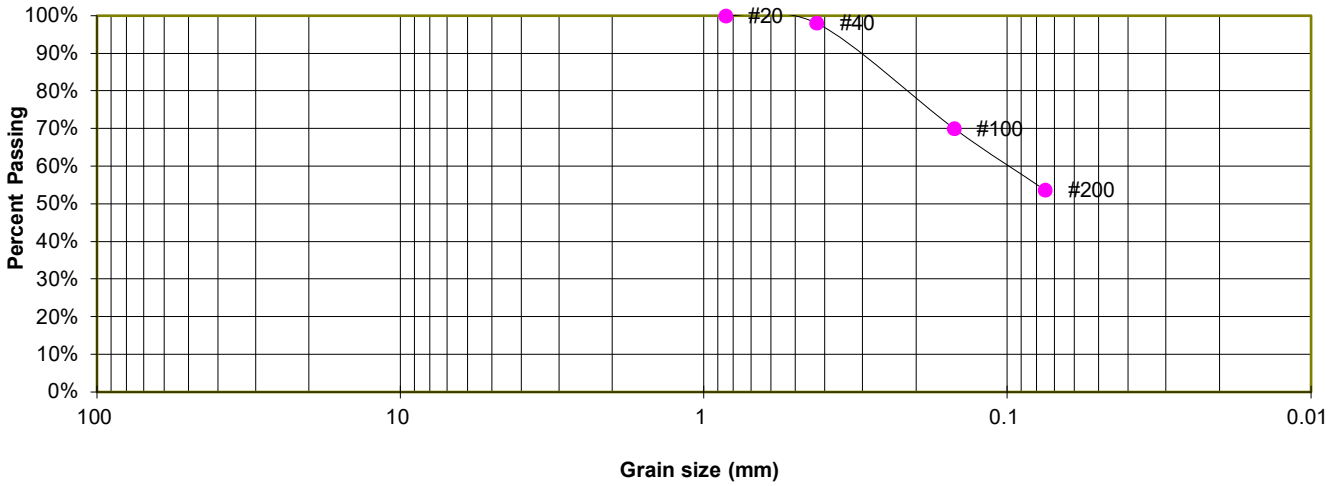
FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-69

TEST BORING	32	SOIL DESCRIPTION	SILT, SANDY
DEPTH (FT)	20	SOIL TYPE	2

Sieve Analysis
Grain Size Distribution



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	
20	100.0%
40	98.0%
100	70.1%
200	53.7%

ATTERBERG LIMITS

Plastic Limit	43
Liquid Limit	60
Plastic Index	17

SOIL CLASSIFICATION

USCS CLASSIFICATION: ML

ENTECH ENGINEERING, INC.

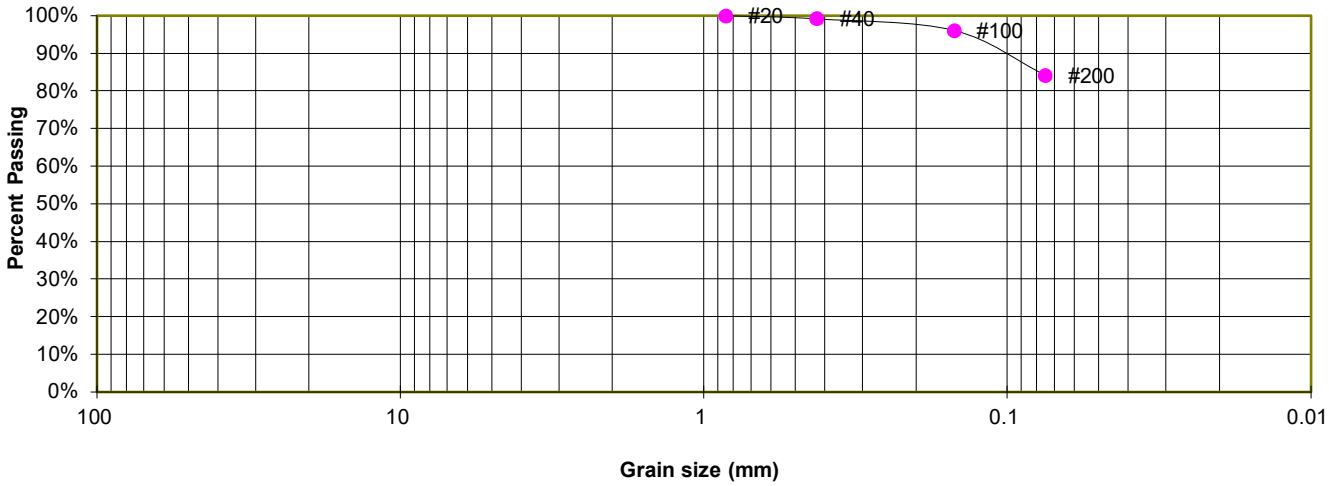
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-70

TEST BORING	38	SOIL DESCRIPTION	CLAY, SLIGHTLY SANDY
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	
10	
20	100.0%
40	99.2%
100	96.1%
200	84.2%

ATTERBERG LIMITS

Plastic Limit	23
Liquid Limit	47
Plastic Index	24

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

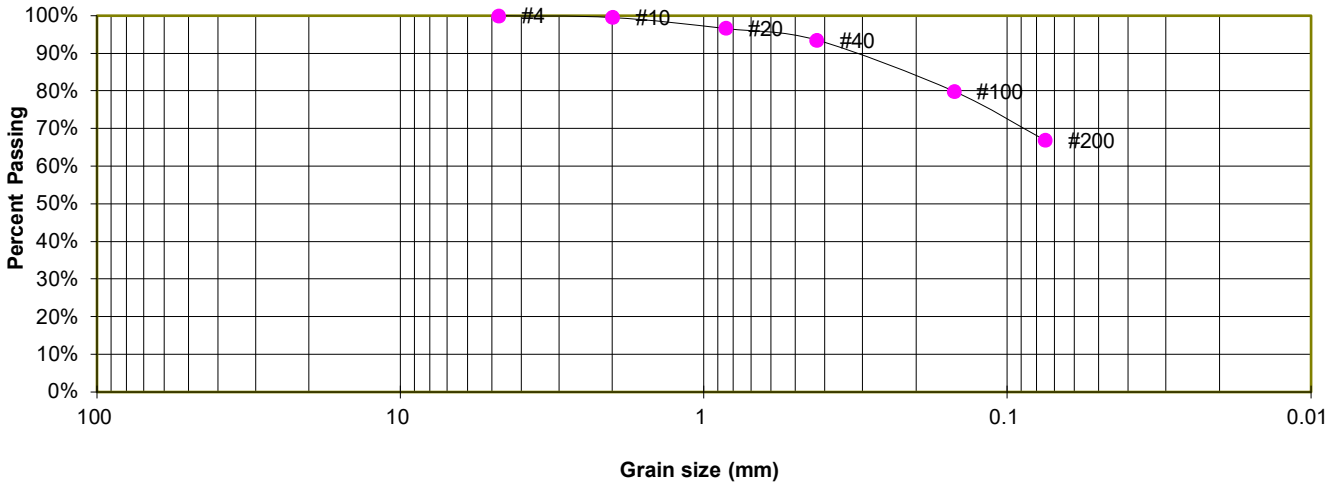
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-71

TEST BORING	40	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	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	99.6%
20	96.7%
40	93.5%
100	79.9%
200	66.9%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

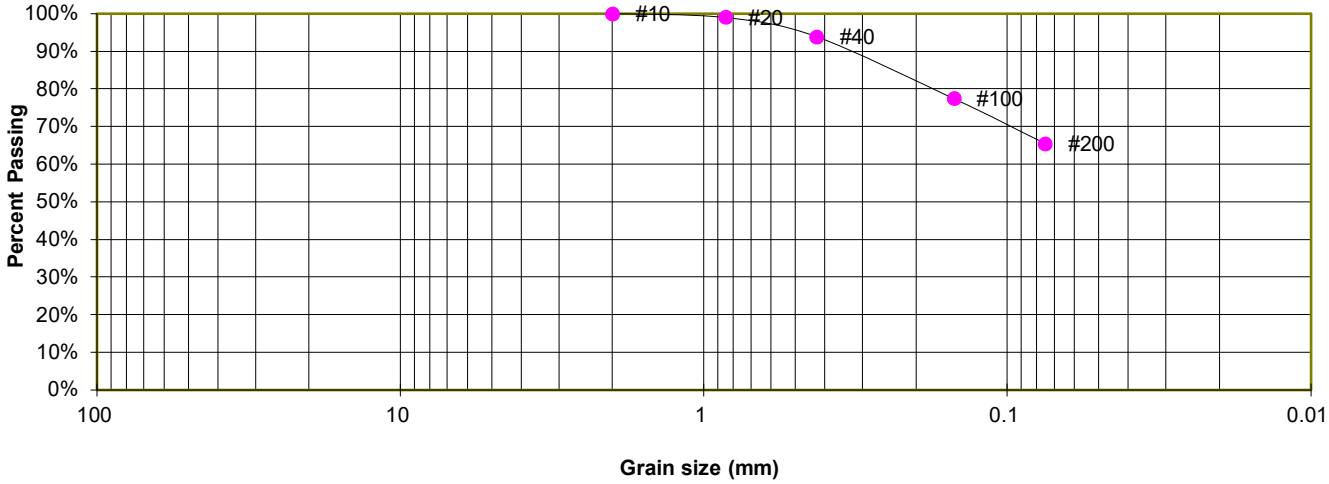
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-72

TEST BORING	41	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	2-3	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.1%
40	93.9%
100	77.5%
200	65.5%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

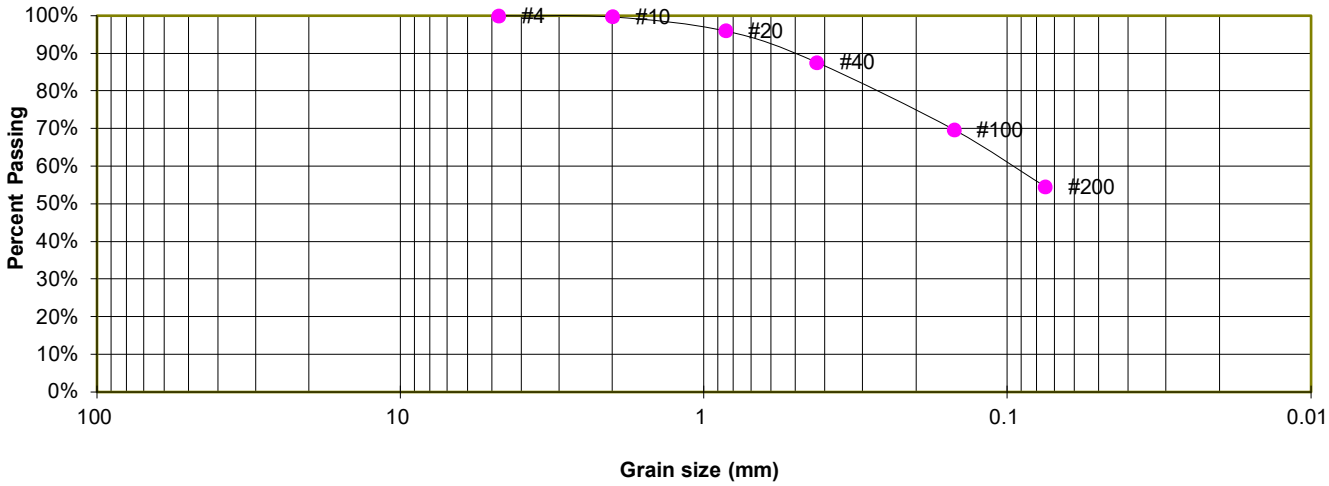
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-73

TEST BORING	42	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	2-3	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	99.8%
20	96.0%
40	87.6%
100	69.7%
200	54.6%

ATTERBERG LIMITS

Plastic Limit	18
Liquid Limit	26
Plastic Index	8

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

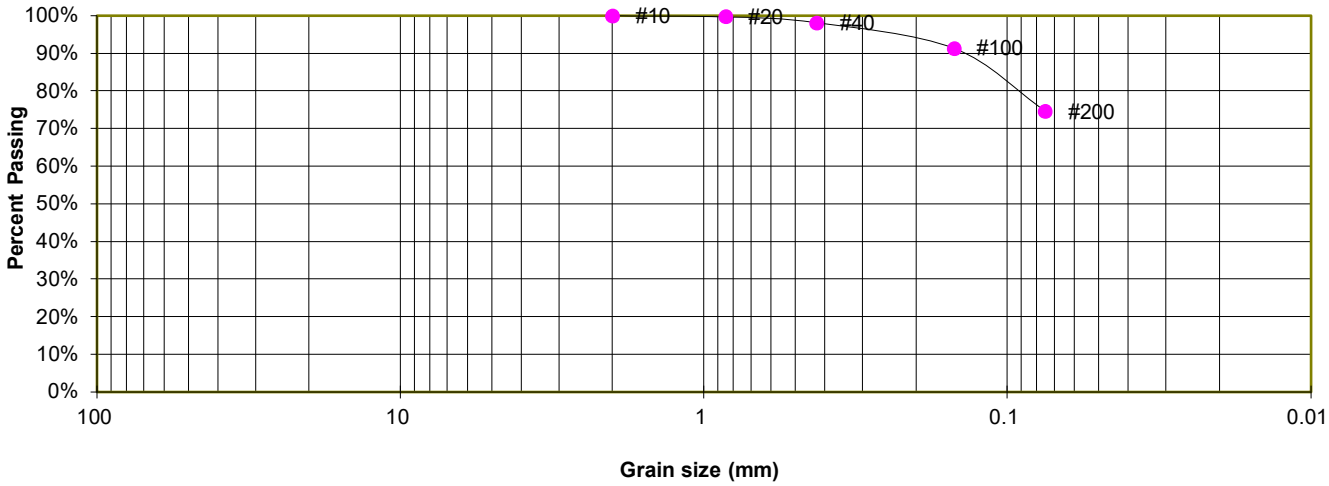
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-74

TEST BORING	49	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	10	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.8%
40	98.2%
100	91.4%
200	74.6%

ATTERBERG LIMITS

Plastic Limit	23
Liquid Limit	36
Plastic Index	13

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

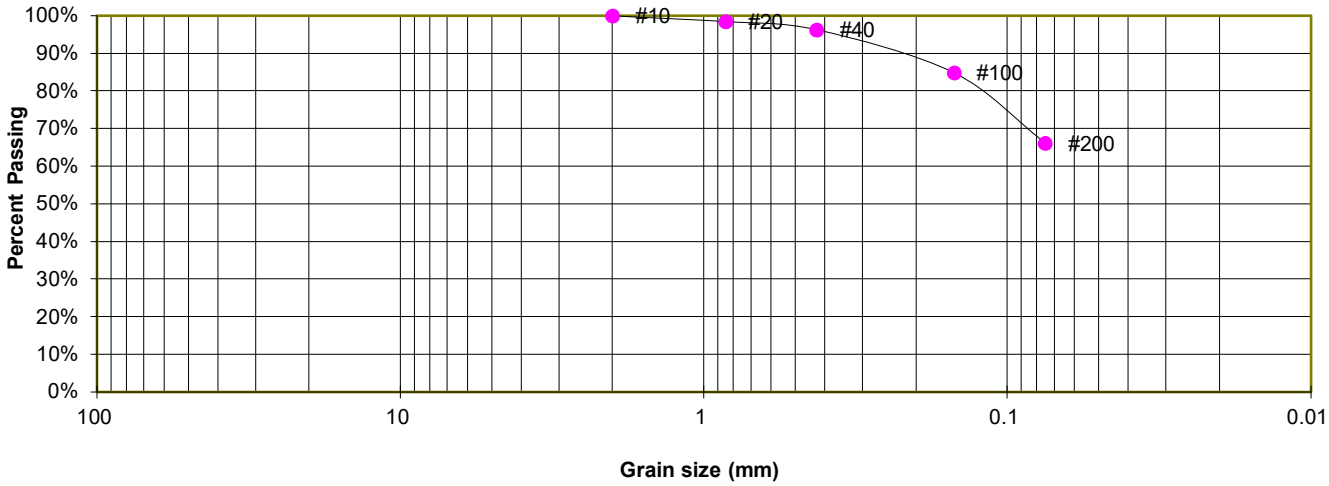
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-75

TEST BORING	51	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	98.5%
40	96.3%
100	84.9%
200	66.1%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

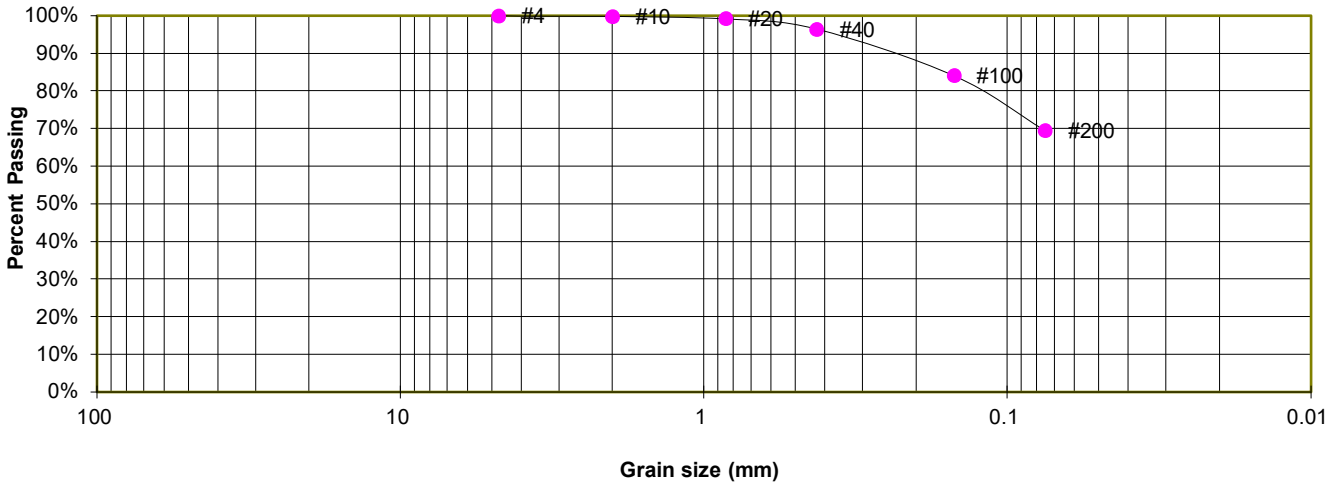
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-76

TEST BORING	56	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	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	99.8%
20	99.2%
40	96.4%
100	84.1%
200	69.5%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

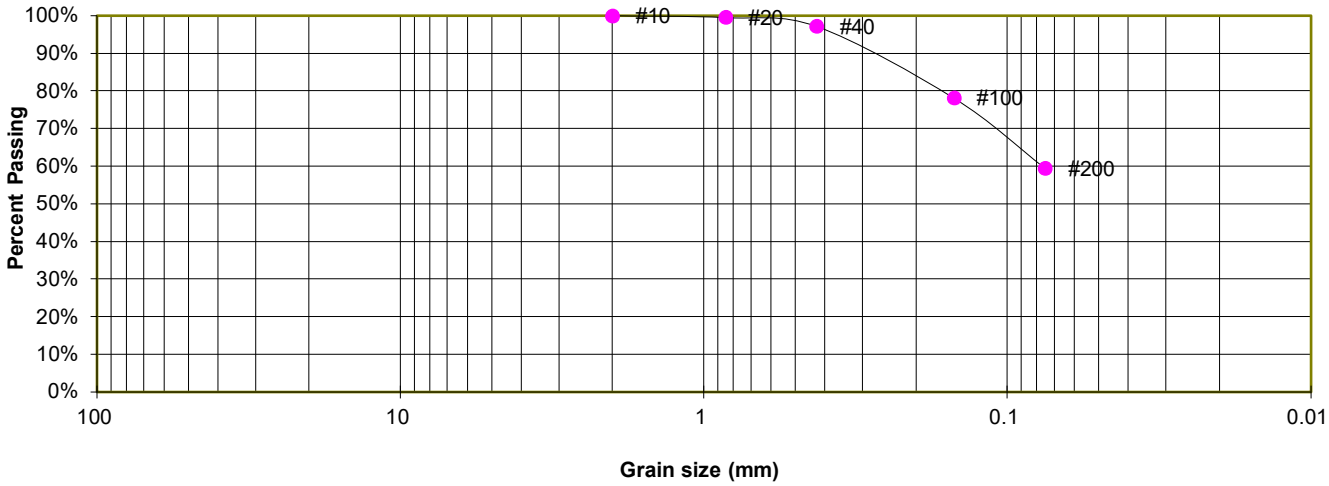
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-77

TEST BORING	64	SOIL DESCRIPTION	CLAY, SANDY
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	
10	100.0%
20	99.6%
40	97.2%
100	78.1%
200	59.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

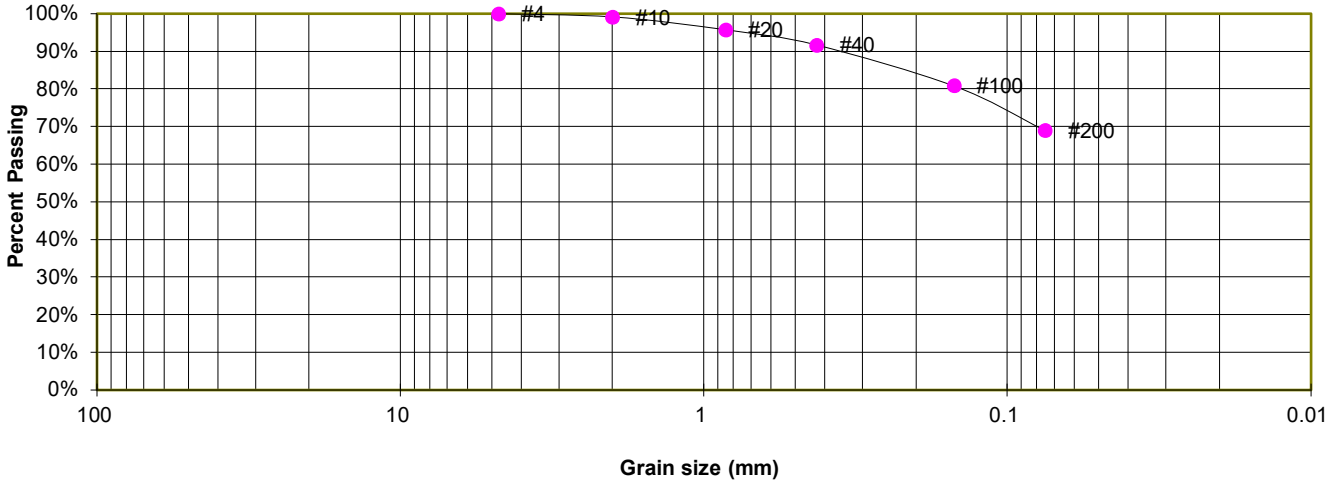
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-78

TEST BORING	74	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	10	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	99.2%
20	95.7%
40	91.7%
100	80.9%
200	69.0%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

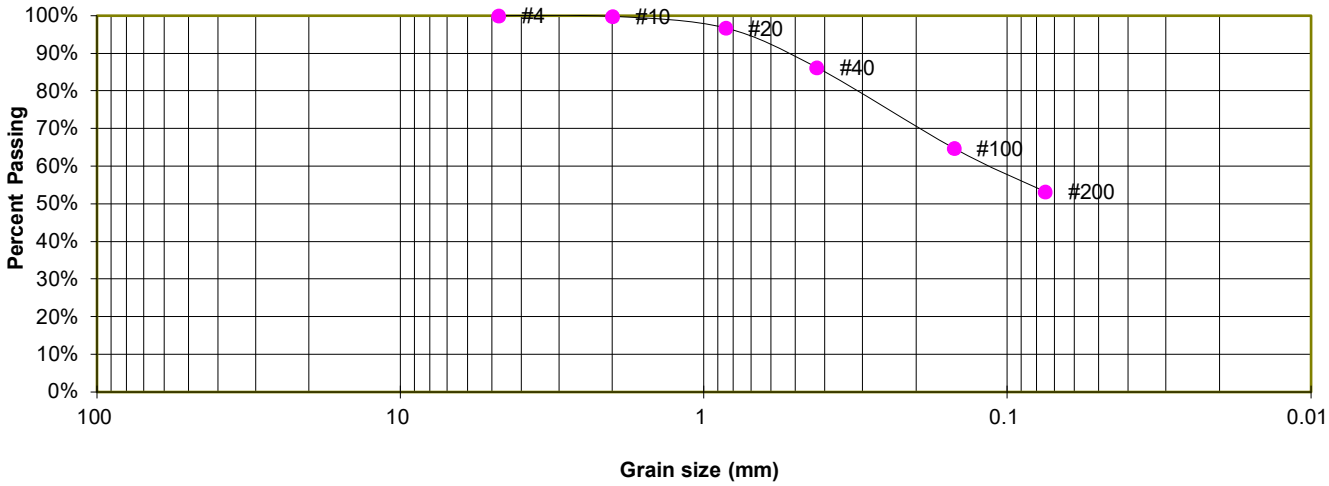
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-79

TEST BORING	78	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	2-3	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	99.8%
20	96.8%
40	86.3%
100	64.8%
200	53.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

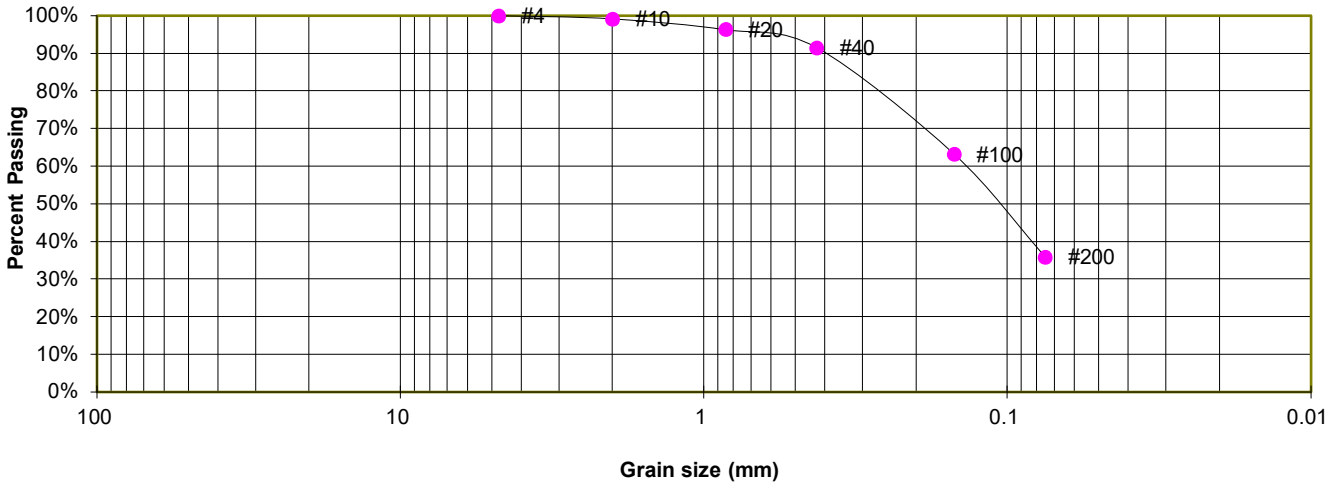
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-80

TEST BORING	67	SOIL DESCRIPTION	SANDSTONE (SAND, SILTY)
DEPTH (FT)	20	SOIL TYPE	3



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.2%
20	96.4%
40	91.5%
100	63.2%
200	35.9%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

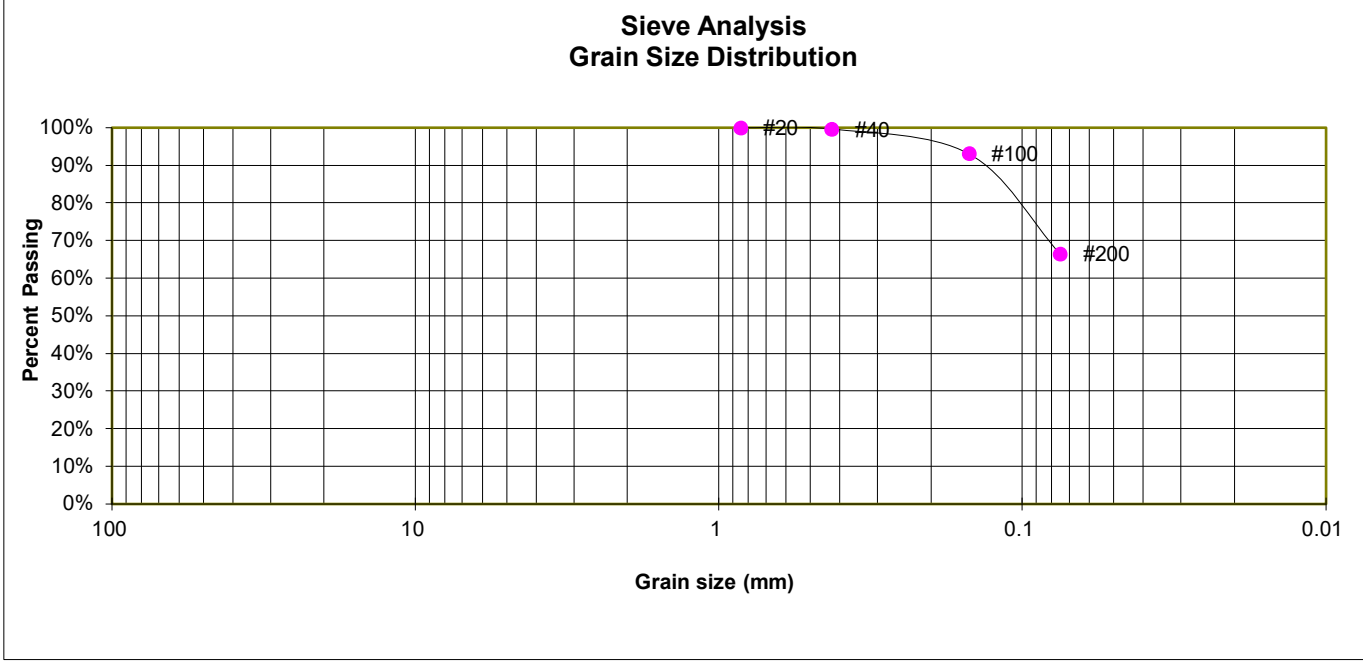
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-81

TEST BORING	12	SOIL DESCRIPTION	SILTSTONE (SILT, SANDY)
DEPTH (FT)	20	SOIL TYPE	4



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	
20	100.0%
40	99.7%
100	93.2%
200	66.4%

SOIL CLASSIFICATION

USCS CLASSIFICATION: ML

ENTECH ENGINEERING, INC.

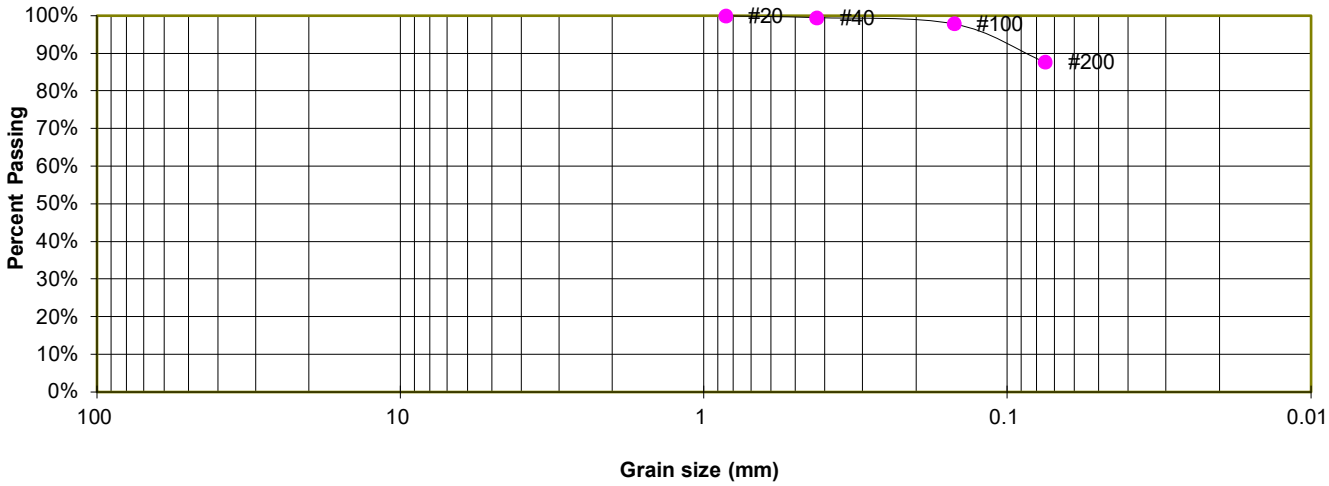
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-82

TEST BORING	48	SOIL DESCRIPTION	SILTSTONE (SILT, SLIGHTLY SANDY
DEPTH (FT)	20	SOIL TYPE	4



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	
20	100.0%
40	99.5%
100	97.9%
200	87.7%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: ML

ENTECH ENGINEERING, INC.

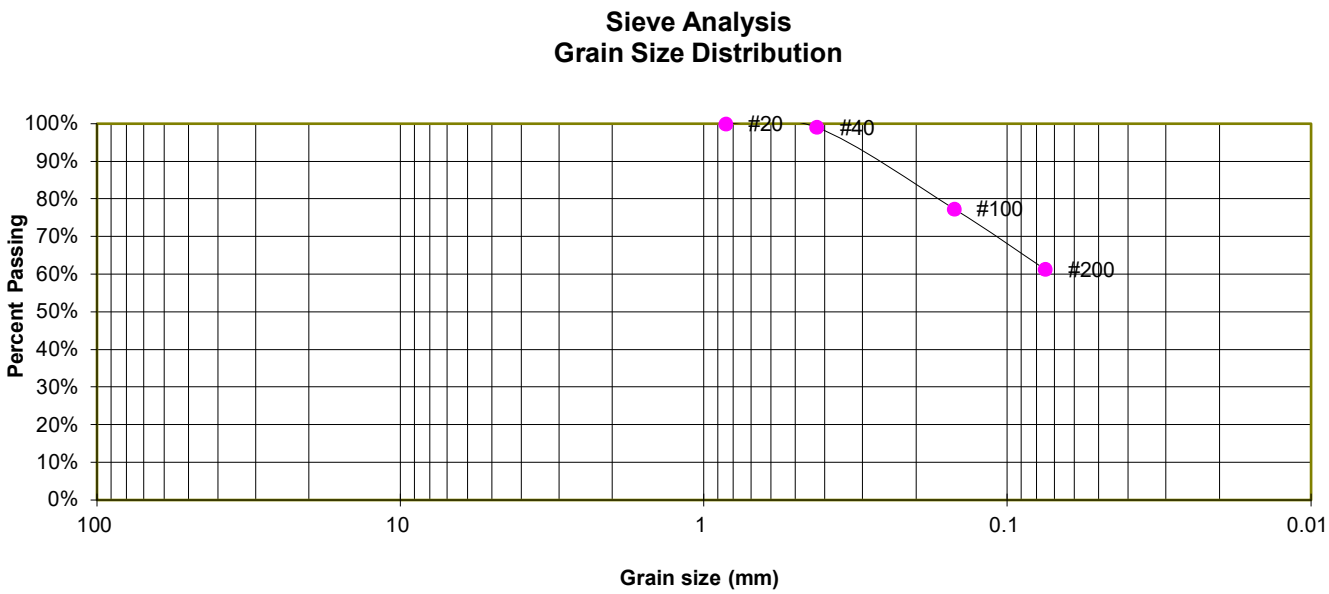
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-83

TEST BORING	62	SOIL DESCRIPTION	CLAYSTONE (CLAY, SANDY)
DEPTH (FT)	20	SOIL TYPE	4



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	
20	100.0%
40	99.1%
100	77.4%
200	61.3%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

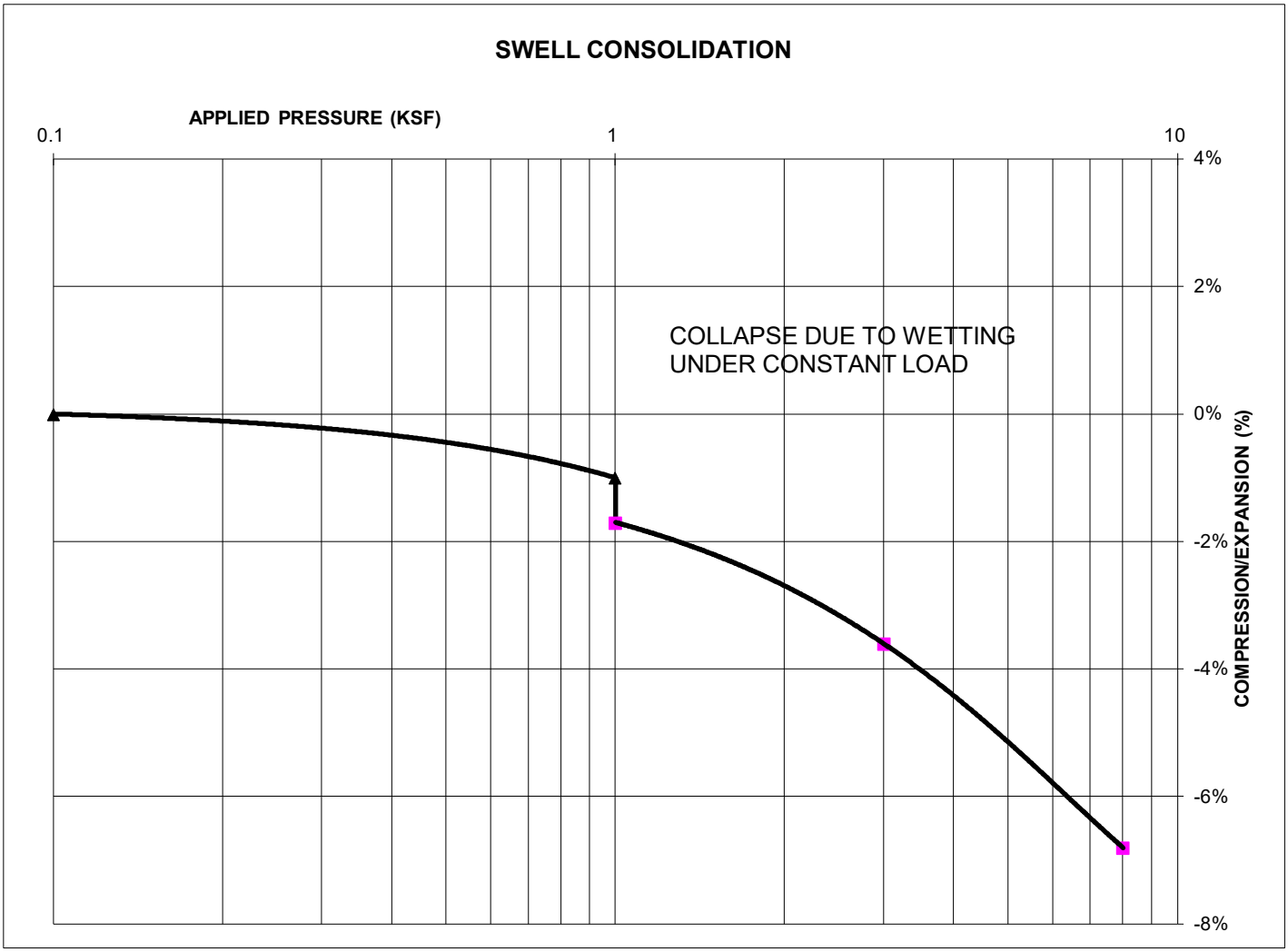
LABORATORY TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-84

TEST BORING	31	SOIL DESCRIPTION	SAND, CLAYEY-SILTY
DEPTH (FT)	5	SOIL TYPE	1



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 109
NATURAL MOISTURE CONTENT: 12.3%
SWELL/COLLAPSE (%): -0.7%

ENTECH ENGINEERING, INC.

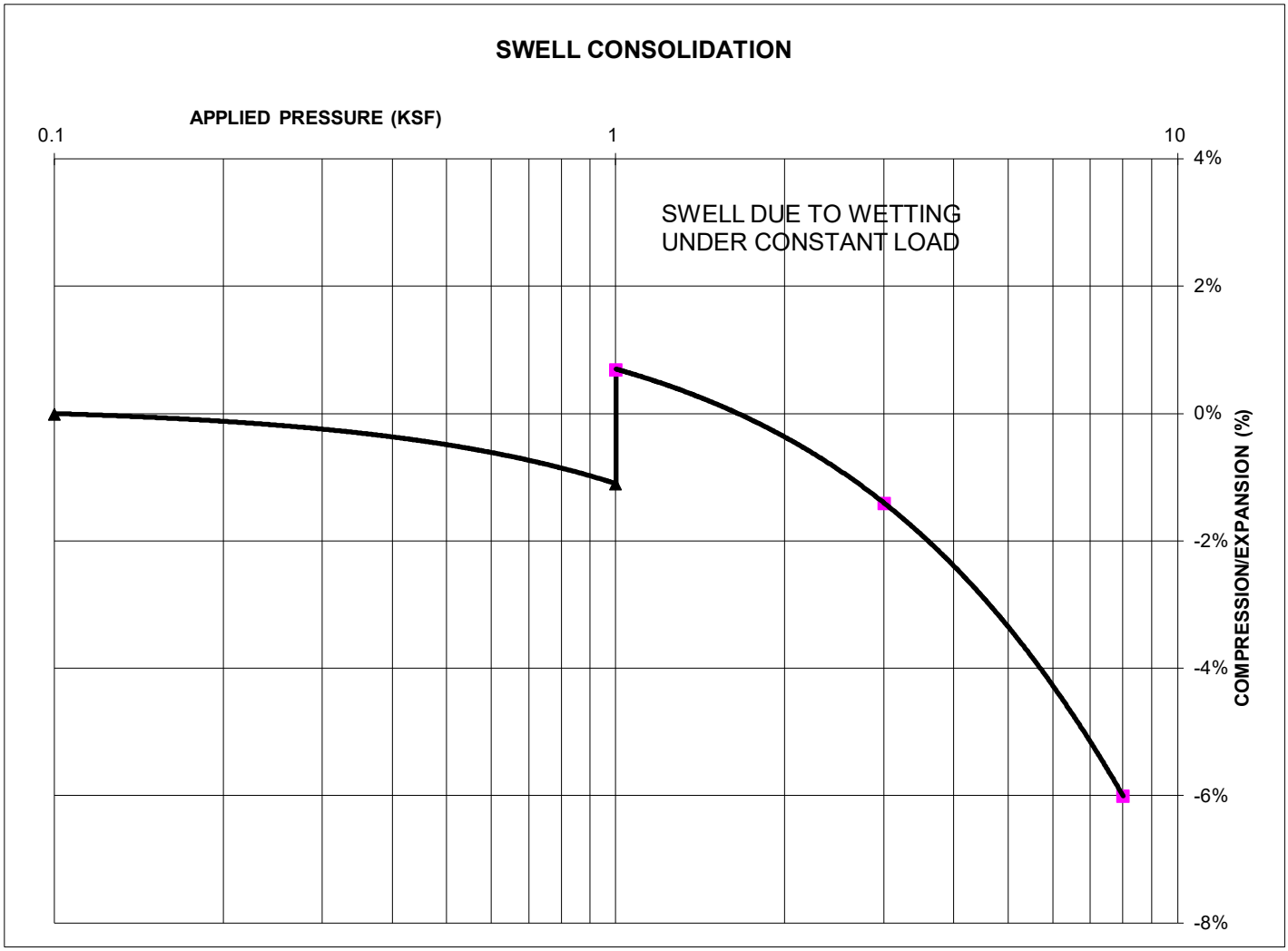
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-85

TEST BORING	32	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	20	SOIL TYPE	1



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 86
NATURAL MOISTURE CONTENT: 32.1%
SWELL/COLLAPSE (%): 1.8%

ENTECH ENGINEERING, INC.

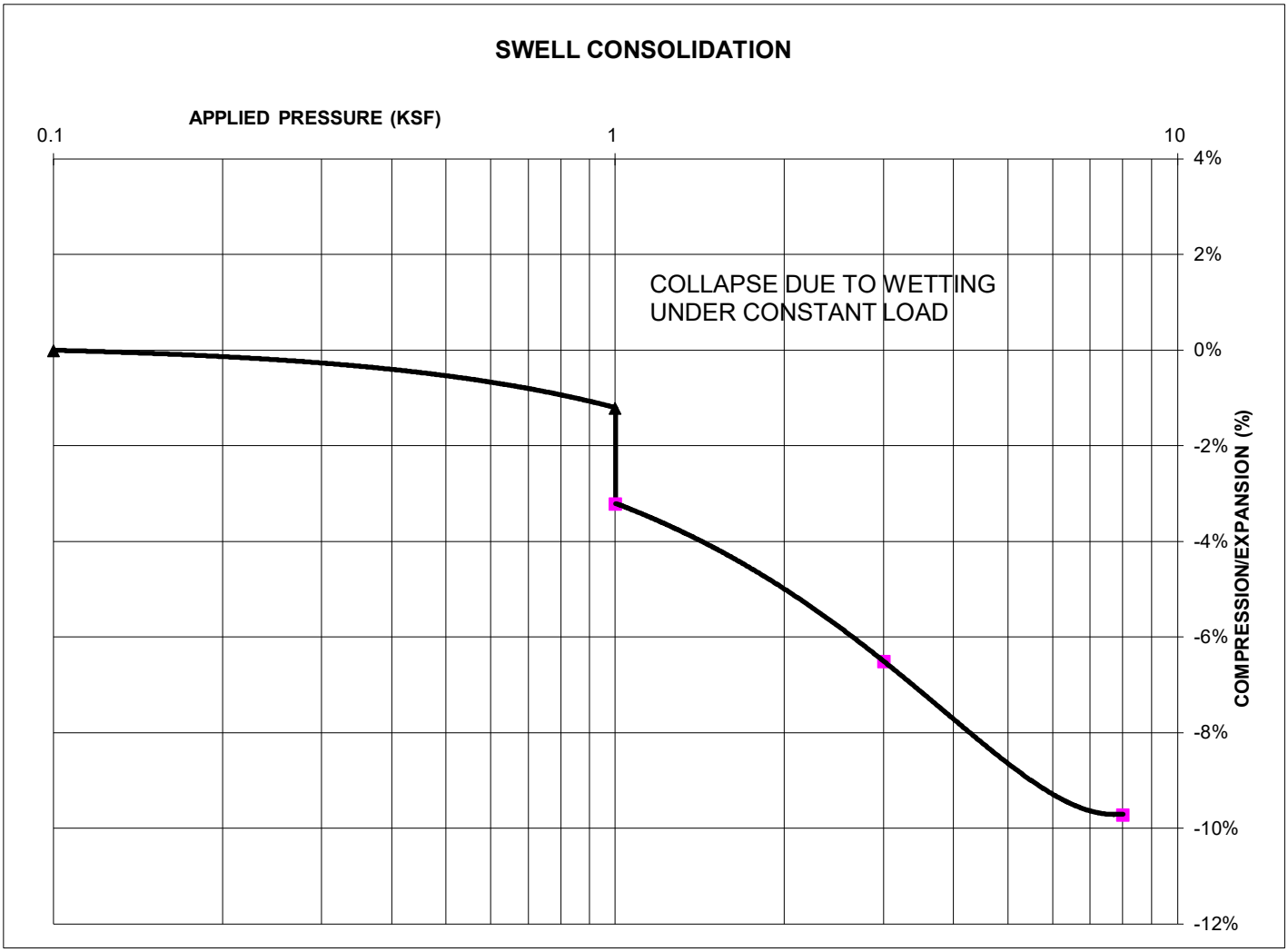
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-86

TEST BORING	60	SOIL DESCRIPTION	SAND, CLAYEY
DEPTH (FT)	5	SOIL TYPE	1



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 104
NATURAL MOISTURE CONTENT: 7.4%
SWELL/COLLAPSE (%): -2.0%

ENTECH ENGINEERING, INC.

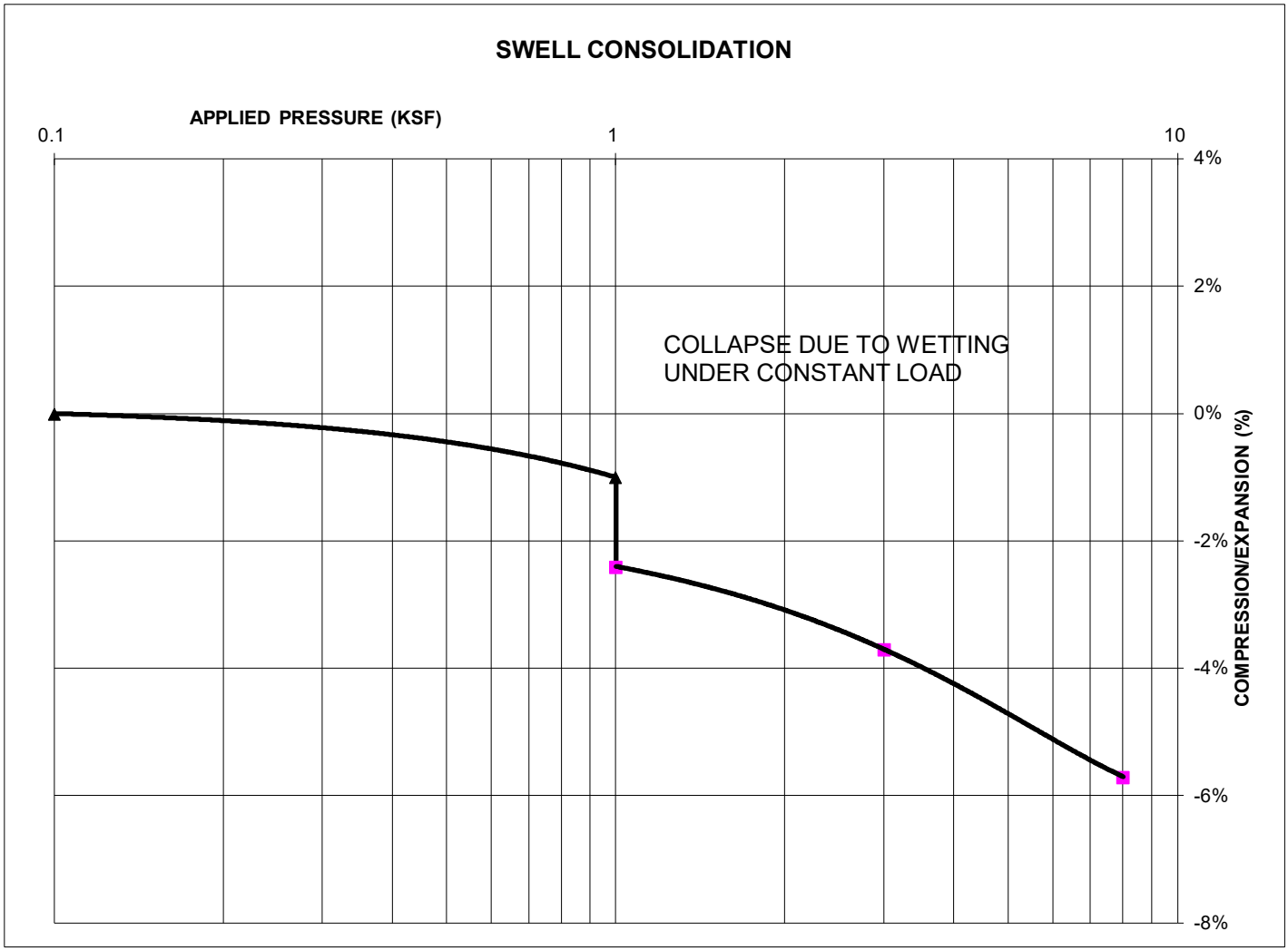
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-87

TEST BORING	71	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 98
NATURAL MOISTURE CONTENT: 8.9%
SWELL/COLLAPSE (%): -1.4%

ENTECH ENGINEERING, INC.

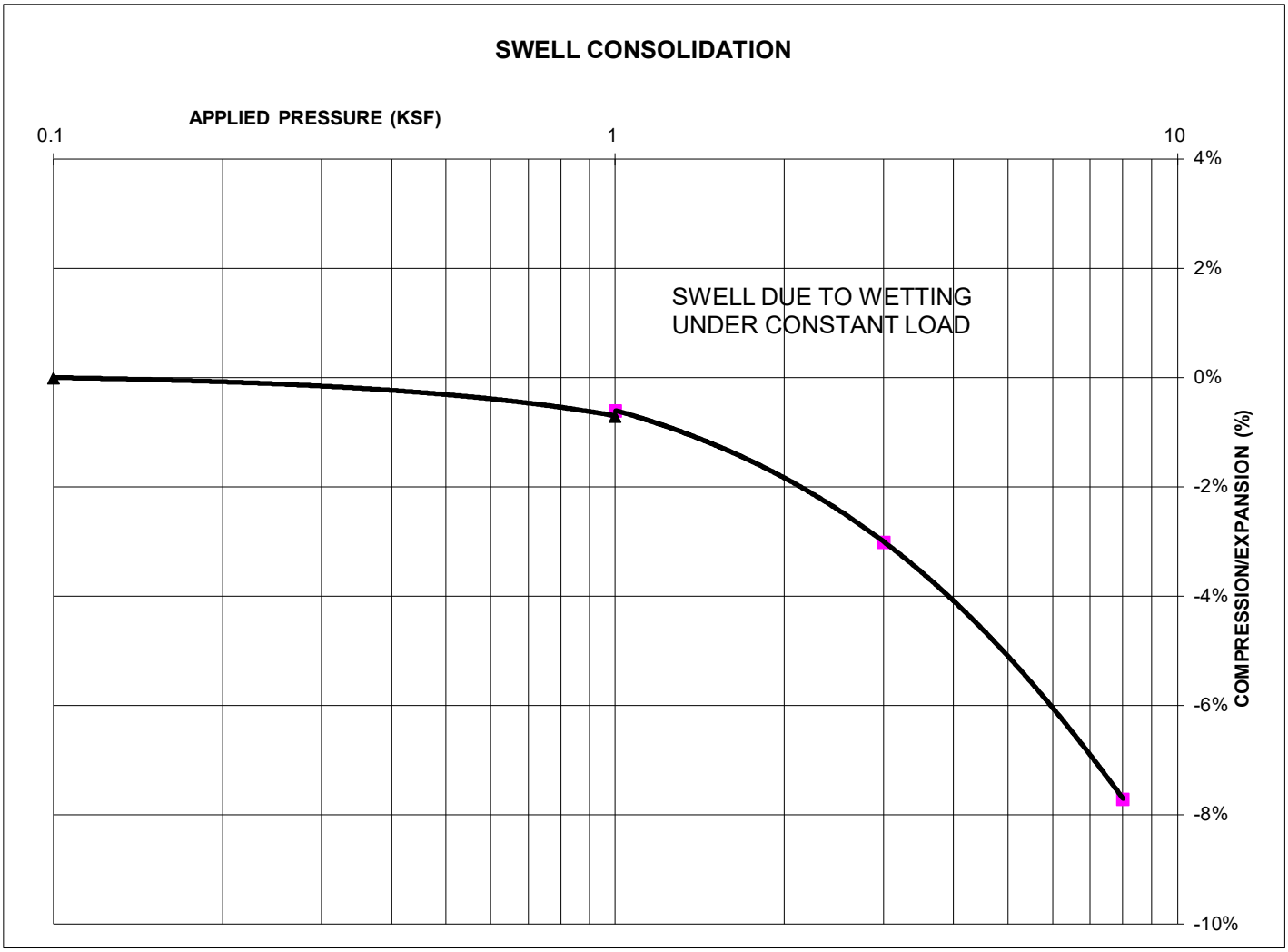
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-88

TEST BORING	76	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	2-3	SOIL TYPE	2



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF):	102
NATURAL MOISTURE CONTENT:	9.8%
SWELL/COLLAPSE (%):	0.1%

ENTECH ENGINEERING, INC.

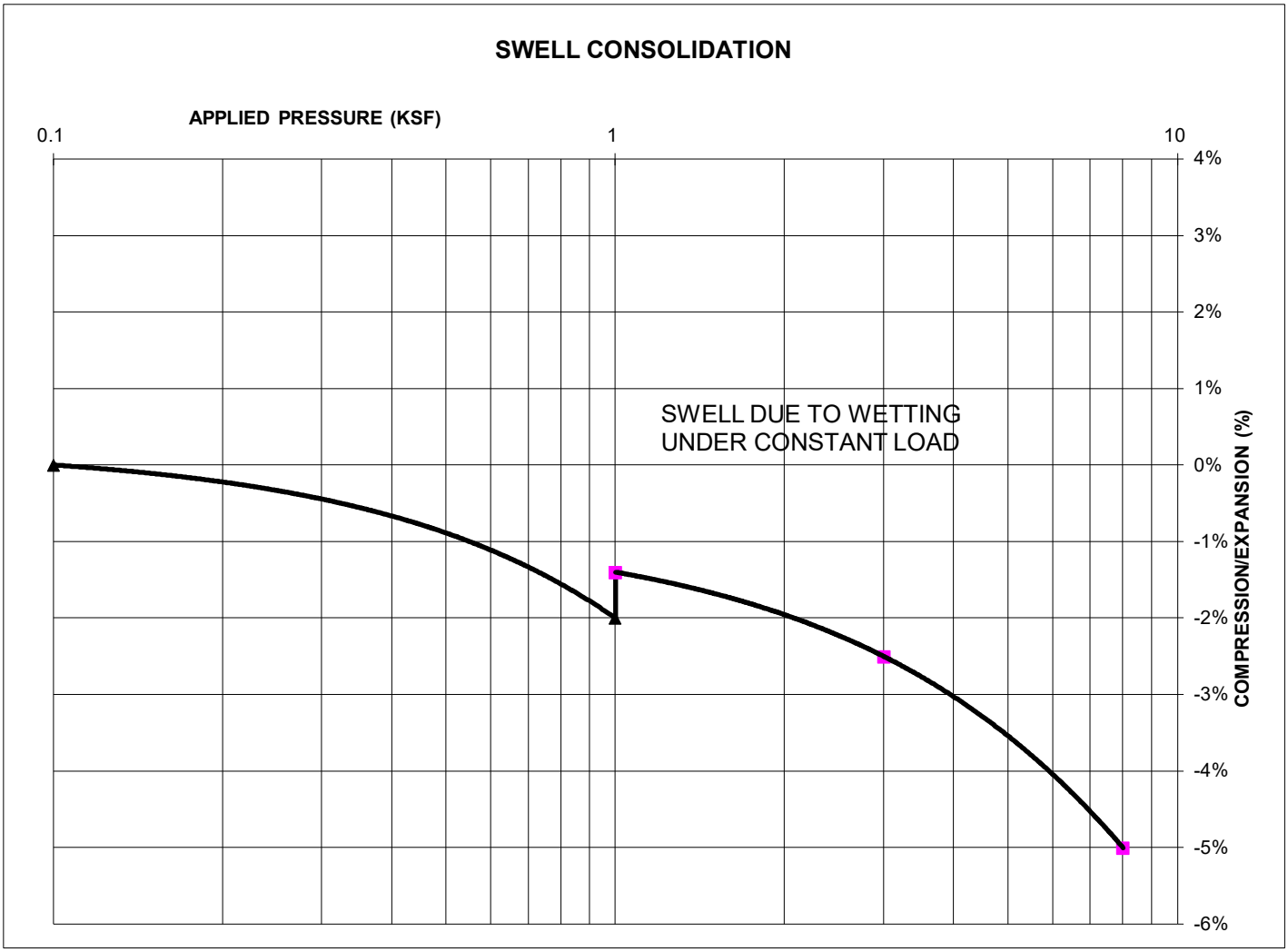
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-89

TEST BORING	3	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	5	SOIL TYPE	2



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 99
NATURAL MOISTURE CONTENT: 24.1%
SWELL/COLLAPSE (%): 0.6%

ENTECH ENGINEERING, INC.

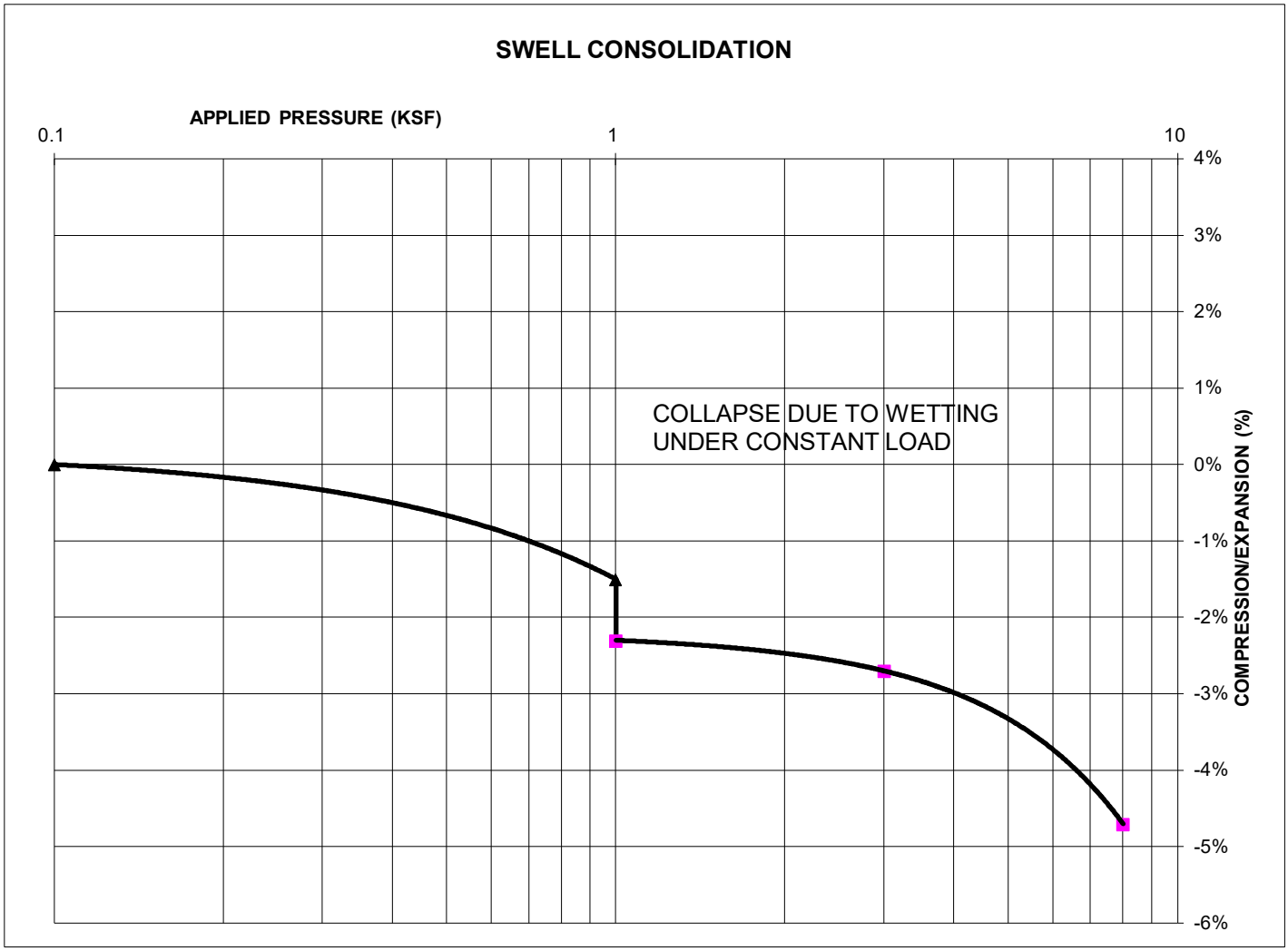
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-90

TEST BORING	7	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	SOIL TYPE	2



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 103
NATURAL MOISTURE CONTENT: 9.7%
SWELL/COLLAPSE (%): -0.8%

ENTECH ENGINEERING, INC.

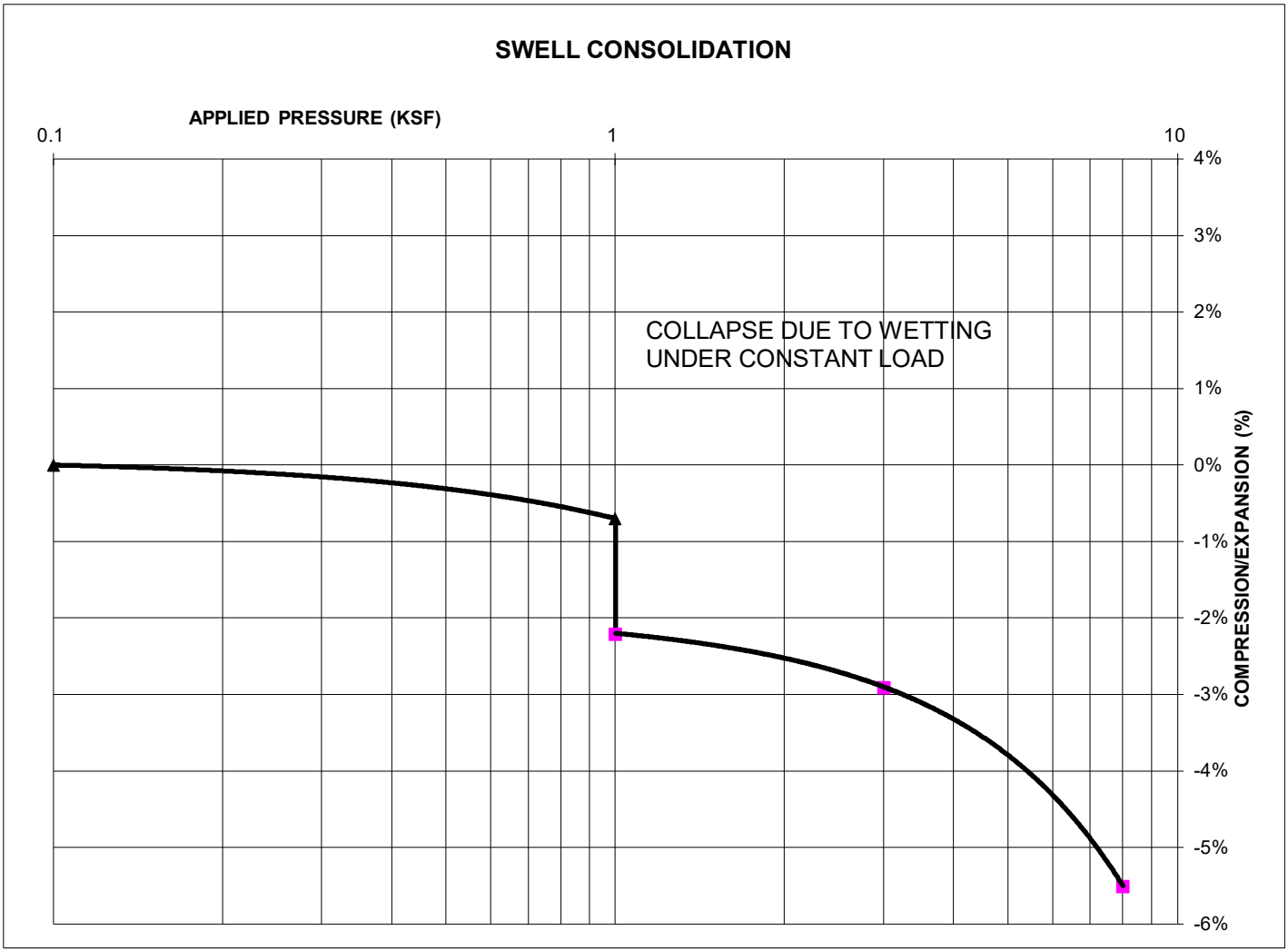
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-91

TEST BORING	16	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	2-3	SOIL TYPE	2



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 98
NATURAL MOISTURE CONTENT: 7.9%
SWELL/COLLAPSE (%): -1.5%

ENTECH ENGINEERING, INC.

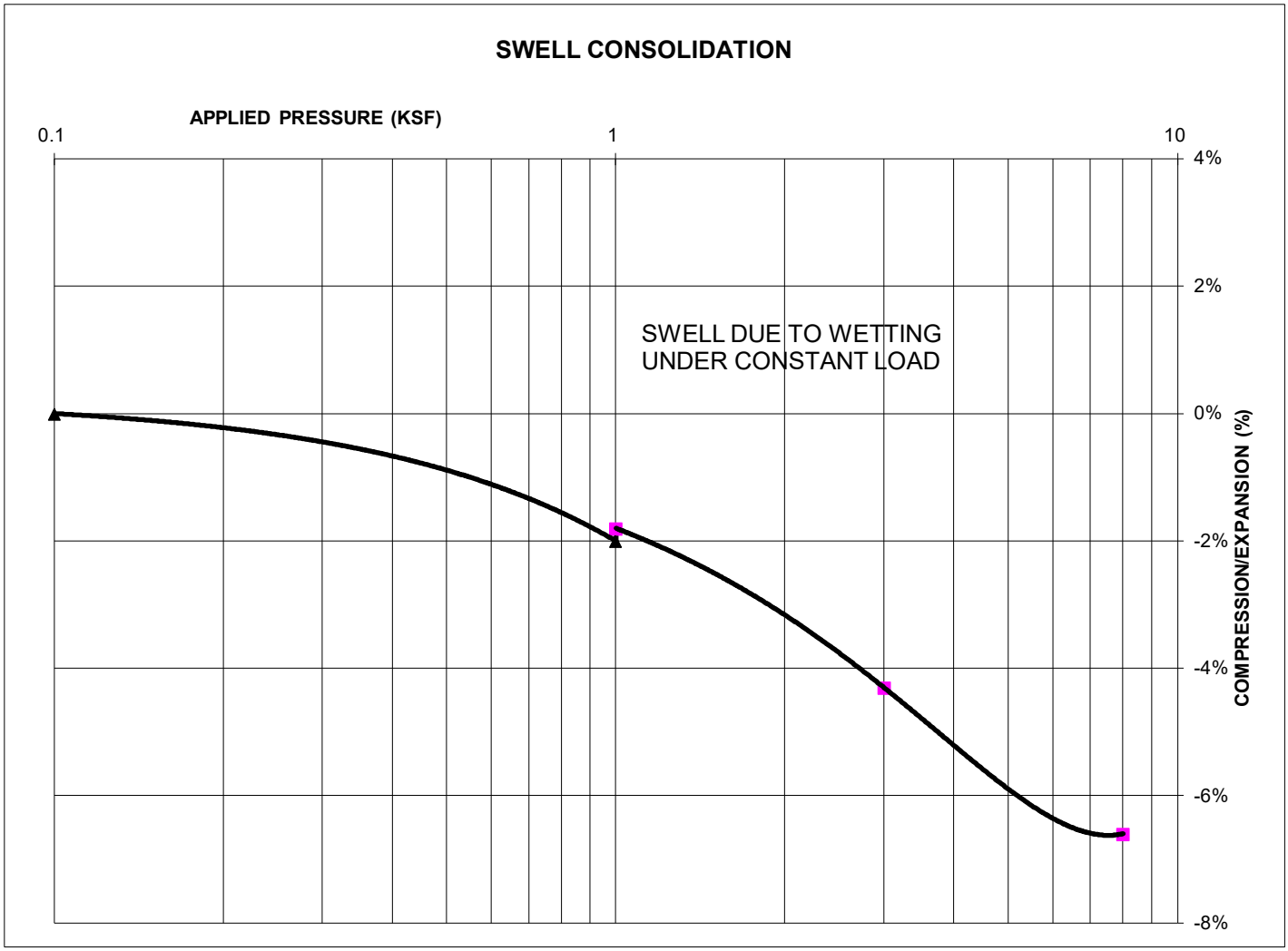
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-92

TEST BORING	22	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5	SOIL TYPE	2



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF):	104
NATURAL MOISTURE CONTENT:	8.5%
SWELL/COLLAPSE (%):	0.2%

ENTECH ENGINEERING, INC.

SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-93

TEST BORING	23	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	2-3	SOIL TYPE	2

SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF):	105
NATURAL MOISTURE CONTENT:	8.3%
SWELL/COLLAPSE (%):	0.9%

ENTECH ENGINEERING, INC.

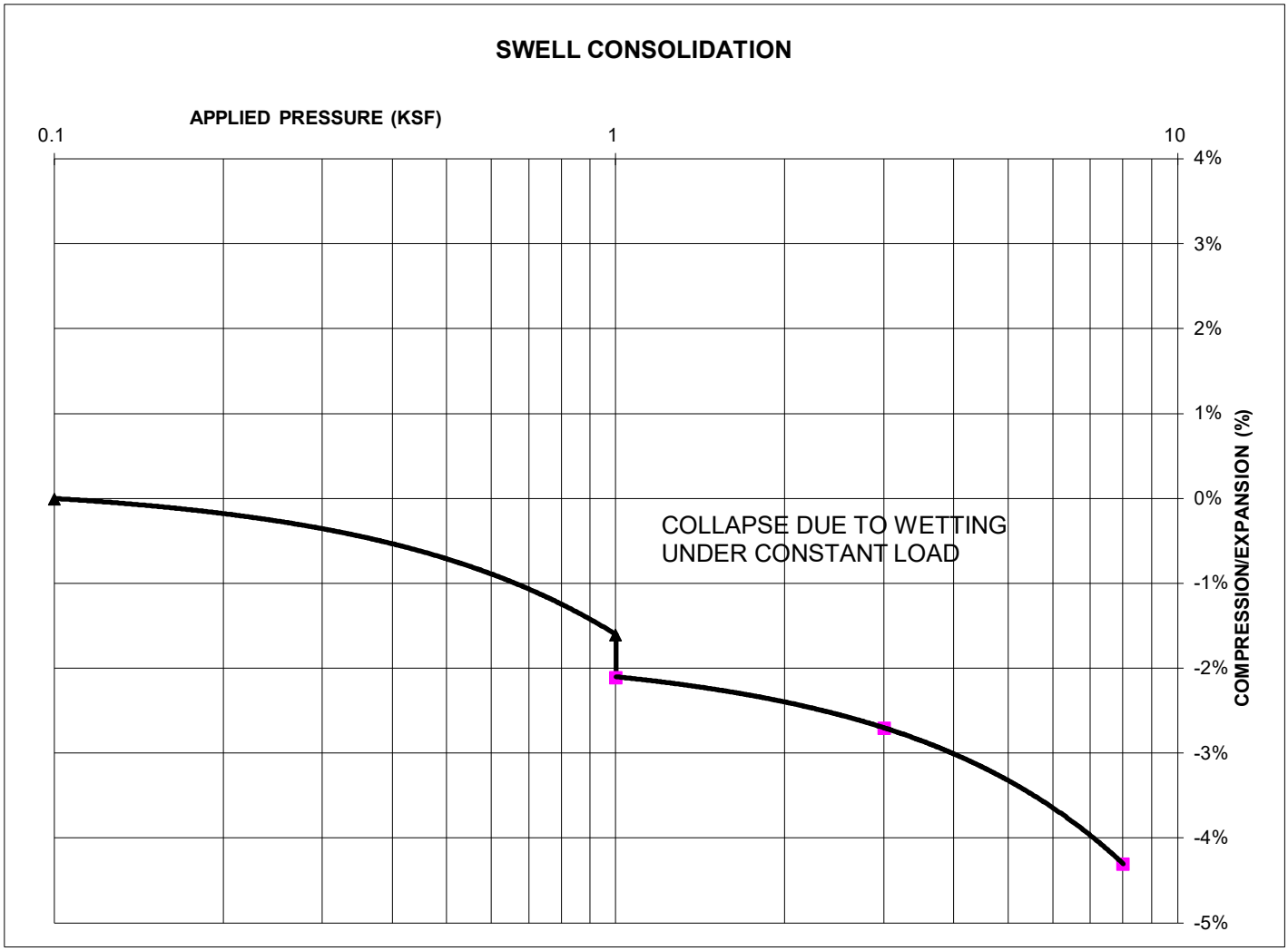
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-94

TEST BORING	38	SOIL DESCRIPTION	CLAY, SLIGHTLY SANDY
DEPTH (FT)	15	SOIL TYPE	2



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF):	90
NATURAL MOISTURE CONTENT:	27.0%
SWELL/COLLAPSE (%):	-0.5%

ENTECH ENGINEERING, INC.

SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-95

TEST BORING	64	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	15	SOIL TYPE	2

SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 88
NATURAL MOISTURE CONTENT: 31.1%
SWELL/COLLAPSE (%): 0.9%

ENTECH ENGINEERING, INC.

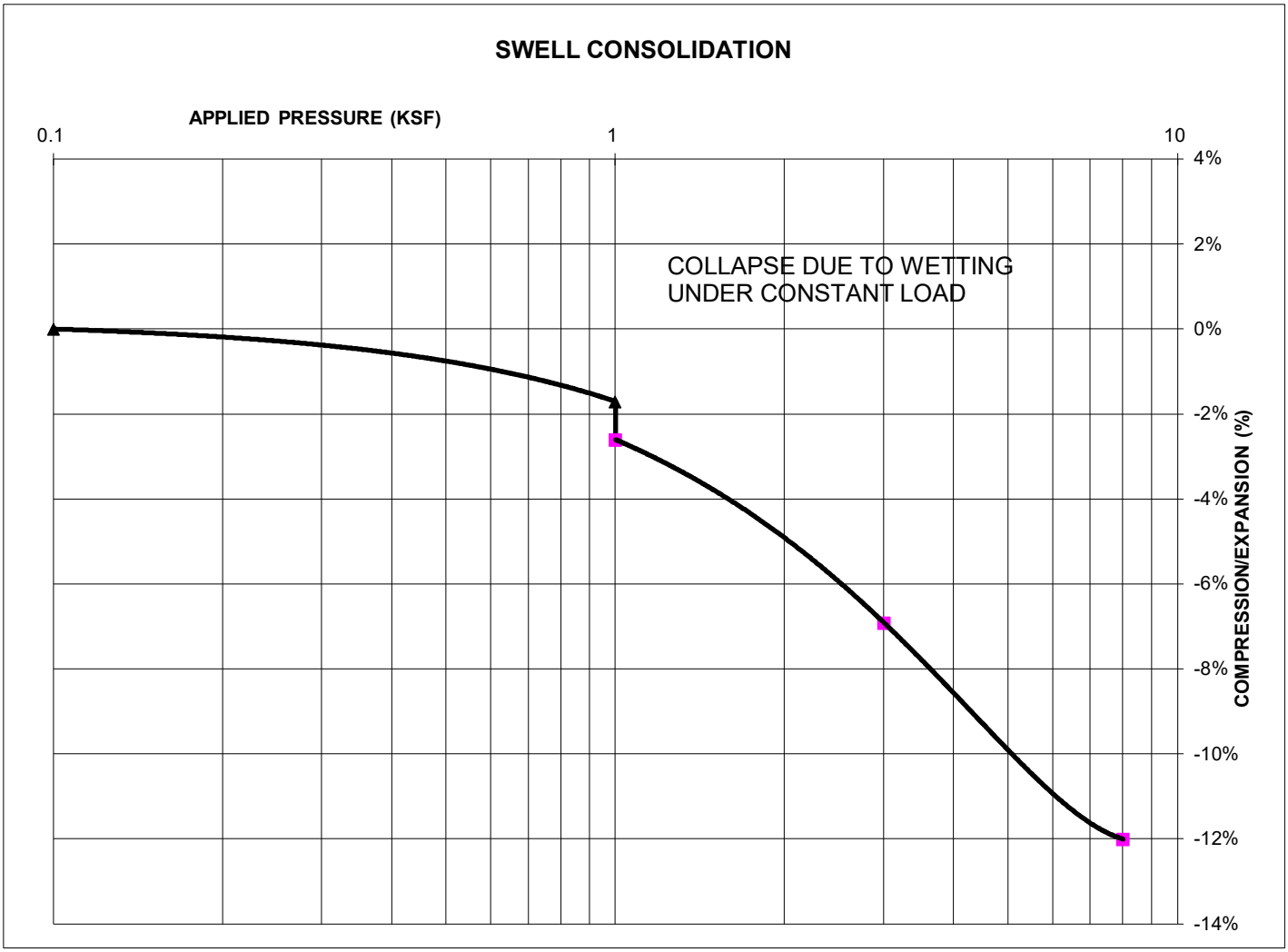
SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-96

TEST BORING	78	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	2-3	SOIL TYPE	2



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF): 105
NATURAL MOISTURE CONTENT: 7.6%
SWELL/COLLAPSE (%): -0.9%

ENTECH ENGINEERING, INC.

SWELL TEST RESULTS

FLYING HORSE EAST
FLYING HORSE DEVELOPMENT

JOB NO. 240074

FIG. C-97

APPENDIX D: Nova Tech Test Well July 8, 1985, Well Log

WR & AD

LFH-1

THIS FORM MUST BE SUBMITTED WITHIN 60 DAYS OF COMPLETION OF THE WORK DESCRIBED HEREON. TYPE OR PRINT IN BLACK INK.

COLORADO DIVISION OF WATER RESOURCES

1313 Sherman Street - Room 818
Denver, Colorado 80203

RECEIVED
MAY 14 1986
WATER RESOURCES
STATE ENGINEER
COLO.

WELL COMPLETION AND PUMP INSTALLATION REPORT

PERMIT NUMBER [redacted] 29925-F

WELL OWNER Shirley L. Brown
1219 Lake Plaza Dr., Suite A
ADDRESS Colorado Springs, CO 80906

NE ¼ of the SW ¼ of Sec. 14,
T. 14 S, R. 64 W 6th P.M.

DATE COMPLETED July 8, 1985

WELL LOG

From	To	Type and Color of Material	Water Loc.
0	100	Sand, Eolian deposit	
100	335	Denver formation sandstone 120-140 200-210, 235-240; shale 100-120, 140-200, 210-235, 240-335	
335	720	Arapahoe formation sands 335-350, 410-425 590-600, 640-650, 700-720 shale 350-410, 425-590, 600-640, 650-700	
720	1010	Laramie Shale formation.	
1010	1180	Laramie Fox Hills formation sand, fine grained 1010-1100; sand and interbedded shale 1100-1180	
		Geophysical log submitted previously	

TOTAL DEPTH 1190

Use additional pages necessary to complete log.

HOLE DIAMETER

15 in. from 0 to 1190 ft.

_____ in. from _____ to _____ ft.

_____ in. from _____ to _____ ft.

DRILLING METHOD _____

CASING RECORD:

Plain Casing
See Attachment

Size _____ & kind _____ from _____ to _____ ft.

Size _____ & kind _____ from _____ to _____ ft.

Size _____ & kind _____ from _____ to _____ ft.

Perforated Casing
See Attachment

Size _____ & kind _____ from _____ to _____ ft.

Size _____ & kind _____ from _____ to _____ ft.

Size _____ & kind _____ from _____ to _____ ft.

GROUTING RECORD

Material Cement Grout

Intervals 0 - 1010

Placement Method Positive displacement

GRAVEL PACK: Size 14-20

Interval 1010-1190

TEST DATA

Date Tested August 13-14, 1985

Static Water Level Prior to Test 525 ft.

Type of Test Pump Submersible

Length of Test 24 hours

Sustained Yield (Metered) 60

Final Pumping Water Level 800

APPENDIX E: Soil Survey Descriptions

El Paso County Area, Colorado

2—Ascalon sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 367q
Elevation: 5,500 to 6,500 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 130 to 150 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ascalon and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian deposits

Typical profile

A - 0 to 8 inches: sandy loam
Bt - 8 to 21 inches: sandy clay loam
BC - 21 to 27 inches: sandy loam
Ck1 - 27 to 48 inches: sandy loam
Ck2 - 48 to 60 inches: loamy sand

Properties and qualities

Slope: 1 to 3 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 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
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R069XY026CO - Sandy Plains
Other vegetative classification: SANDY PLAINS (069BY026CO)
Hydric soil rating: No

Minor Components

Other soils
Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant
Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

3—Ascalon sandy loam, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2tlny
Elevation: 3,870 to 5,960 feet
Mean annual precipitation: 13 to 18 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 95 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

Ascalon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ascalon

Setting

Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind-reworked alluvium and/or calcareous sandy eolian deposits

Typical profile

Ap - 0 to 6 inches: sandy loam
Bt1 - 6 to 12 inches: sandy clay loam
Bt2 - 12 to 19 inches: sandy clay loam
Bk1 - 19 to 35 inches: fine sandy loam
Bk2 - 35 to 80 inches: fine sandy loam

Properties and qualities

Slope: 3 to 9 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 5.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline (0.1 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Minor Components

Olnest

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Vona

Percent of map unit: 5 percent
Landform: Interfluves
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R067BY024CO - Sandy Plains
Hydric soil rating: No

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

8—Blakeland loamy sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 369v
Elevation: 4,600 to 5,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Blakeland and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blakeland

Setting

Landform: Flats, hills
Landform position (three-dimensional): Side slope, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock and/or eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 11 inches: loamy sand
AC - 11 to 27 inches: loamy sand
C - 27 to 60 inches: sand

Properties and qualities

Slope: 1 to 9 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 to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

10—Blendon sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 3671
Elevation: 6,000 to 6,800 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Blendon and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blendon

Setting

Landform: Alluvial fans, terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium derived from arkose

Typical profile

A - 0 to 10 inches: sandy loam
Bw - 10 to 36 inches: sandy loam
C - 36 to 60 inches: gravelly sandy loam

Properties and qualities

Slope: 0 to 3 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 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
Calcium carbonate, maximum content: 2 percent
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

11—Bresser sandy loam, cool, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tlph
Elevation: 5,850 to 6,880 feet
Mean annual precipitation: 15 to 19 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Bresser, cool, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bresser, Cool

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Tertiary aged alluvium derived from arkose

Typical profile

Ap - 0 to 5 inches: sandy loam
Bt1 - 5 to 8 inches: sandy loam
Bt2 - 8 to 27 inches: sandy clay loam
Bt3 - 27 to 36 inches: sandy loam
C - 36 to 80 inches: loamy coarse sand

Properties and qualities

Slope: 0 to 3 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 to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Truckton

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Yoder

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XY214CO - Gravelly Foothill
Hydric soil rating: No

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

12—Bresser sandy loam, cool, 3 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tlpd
Elevation: 6,300 to 6,800 feet
Mean annual precipitation: 13 to 19 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 125 to 140 days
Farmland classification: Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Bresser, cool, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bresser, Cool

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Tertiary aged alluvium derived from arkose

Typical profile

Ap - 0 to 5 inches: sandy loam
Bt1 - 5 to 8 inches: sandy loam
Bt2 - 8 to 27 inches: sandy clay loam
Bt3 - 27 to 36 inches: sandy loam
C - 36 to 80 inches: loamy coarse sand

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 to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Truckton

Percent of map unit: 10 percent
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Yoder

Percent of map unit: 5 percent
Landform: Alluvial fans
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XY214CO - Gravelly Foothill
Hydric soil rating: No

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

96—Truckton sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2yvrd
Elevation: 5,400 to 7,000 feet
Mean annual precipitation: 14 to 23 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 90 to 155 days
Farmland classification: Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

Map Unit Composition

Truckton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truckton

Setting

Landform: Fan remnants, interfluves
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Wind re-worked alluvium derived from arkose

Typical profile

A - 0 to 4 inches: sandy loam
Bt1 - 4 to 12 inches: sandy loam
Bt2 - 12 to 19 inches: sandy loam
C - 19 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very 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
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Blakeland
Percent of map unit: 5 percent
Landform: Hills, interfluves
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Bresser
Percent of map unit: 5 percent
Landform: Terraces, interfluves
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Pleasant, frequently ponded
Percent of map unit: 2 percent
Landform: Closed depressions
Down-slope shape: Concave, linear
Across-slope shape: Concave
Ecological site: R067BY010CO - Closed Depression
Hydric soil rating: Yes

Urban land
Percent of map unit: 2 percent
Hydric soil rating: No

Ellicott, occasionally flooded
Percent of map unit: 1 percent
Landform: Drainageways, flood plains
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: R067BY031CO - Sandy Bottomland
Hydric soil rating: No

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

100—Truckton-Bresser complex, eroded

Map Unit Setting

National map unit symbol: 3672
Elevation: 6,300 to 7,000 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Truckton, eroded, and similar soils: 60 percent
Bresser, eroded, and similar soils: 35 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Truckton, Eroded

Setting

Landform: Flats, hills
Landform position (three-dimensional): Side slope, talf
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 8 inches: sandy loam
Bt - 8 to 24 inches: sandy loam
C - 24 to 60 inches: coarse sandy loam

Properties and qualities

Slope: 1 to 9 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 (1.98 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 5.7 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Description of Bresser, Eroded

Setting

Landform: Hills, flats
Landform position (three-dimensional): Side slope, talf
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 8 inches: sandy loam
Bt - 8 to 27 inches: sandy clay loam
BC - 27 to 36 inches: sandy loam
C - 36 to 60 inches: loamy coarse sand

Properties and qualities

Slope: 1 to 9 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 (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 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R049XB210CO - Sandy Foothill
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 4 percent
Hydric soil rating: No

Pleasant

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024

El Paso County Area, Colorado

116—Udic Haplusterts

Map Unit Setting

National map unit symbol: 2qnmp
Elevation: 5,500 to 6,500 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 115 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Udic haplusterts, ponded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udic Haplusterts, Ponded

Setting

Landform: Closed depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium

Typical profile

A - 0 to 5 inches: clay
Bw - 5 to 17 inches: clay
Bss1 - 17 to 28 inches: clay
Bss2 - 28 to 36 inches: clay
Bss3 - 36 to 68 inches: clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 3c
Land capability classification (nonirrigated): 4c

Hydrologic Soil Group: D
Ecological site: R067BY010CO - Closed Depression
Hydric soil rating: No

Minor Components

Feterita, ponded
Percent of map unit: 9 percent
Landform: Closed depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R067BY010CO - Closed Depression
Other vegetative classification: Clayey Plains #42 (067XY042CO_2)
Hydric soil rating: Yes

Pachic haplustolls
Percent of map unit: 6 percent
Landform: Closed depressions, terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R067BY010CO - Closed Depression
Other vegetative classification: LOAMY FOOTHILLS (048AY284CO)
Hydric soil rating: No

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 22, Sep 3, 2024