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**SOILS AND GEOLOGY STUDY  
FLYING HORSE NORTH – FILING NO. 9  
EL PASO COUNTY, COLORADO**



Prepared for:

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Respectfully Submitted,

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## 1 SUMMARY

### ***Project Location***

The project consists of a portion of the E½ of Section 36, Township 11 South, Range 66 West of the 6<sup>th</sup> Principal Meridian in El Paso County, Colorado. The site is located approximately 3 miles northeast of Colorado Springs, Colorado. The location of the site is as shown in the Vicinity Map, Figure 1.

### ***Project Description***

The Flying Horse North, LLC is planning a proposed site development of 32.07-acres which will include single-family rural residential lots, a detention pond, and other associated improvements. A total of 11 (2.5 acre) lots are proposed in Filing No 9. The proposed lots will utilize individual water wells and onsite wastewater treatment systems (OWTS).

### ***Scope of Report***

This report presents the results of our geologic evaluation and treatment of engineering geologic hazard study on Flying Horse North Filing No 9.

### ***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 potentially expansive soils, potentially seasonal shallow groundwater areas, and the potential for elevated Radon. 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.

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

## 2 GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION

The topography of the site is gradual to moderately sloping to the west, and northeast along the Palmer Divide. Minor drainage swales were observed in the western portion of Filing No. 9 on portions of Lots 2 – 6 and detention pond tract. Water was not observed flowing in the minor drainage swales at the time of this investigation, however, these areas have been identified as potential seasonally shallow groundwater areas. The site boundaries are indicated in the USGS Map, Figure 2. Previous land uses have undeveloped grazing and pastureland. The site primarily contains field grasses, weeds, and Ponderosa pines. Site photographs are included in Appendix A.

The Flying Horse North, LLC is planning a proposed site development of 32.07-acres which will include single-family rural residential lots, a detention pond, and other associated improvements. A total of 11 (2.5 acre) lots are proposed in Filing No 9. The proposed lots will utilize individual water wells and onsite wastewater treatment systems (OWTS). A detention pond (Pond A) is proposed the western portion of the site. Grading plans were not available at the time of this investigation, however, site grading is anticipated to be minimal and will primarily be completed for the proposed Balsick Court west of Allen Ranch Road, and the proposed detention pond. The Site and Exploration Plan is shown in Figure 3.

This area and the adjacent areas were previously investigated by Entech Engineering, Inc. in the following reports:

- Soil, Geology, Geologic Hazard and Wastewater Study dated February 26, 2015 (Reference 1)
- Soil, Geology, Geologic Hazard and Wastewater Study dated February 22, 2016 (Reference 2)
- Soils and Geology Study and Wastewater Study for Flying Horse North Filing No. 3 dated August 23, 2023 (Reference 3)
- Soils and Geology Study and Wastewater Study for Flying Horse North Filing No. 4 dated September 11, 2024 (Reference 4)
- Soils and Geology Study and Wastewater Study for Flying Horse North Filing No. 5 dated October 2, 2024 (Reference 5)
- Soil and Geology Study, Wastewater Study, Flying Horse North, Development Plan and Preliminary Plan Major Amendment Filing Nos. 6, 7, and 8 dated September 26, 2025 (Reference 6)
- Soil and Geology Study, Wastewater Study, Flying Horse North, Filing No. 6 dated October 3, 2025 (Reference 7)
- Soil and Geology Study, Wastewater Study, Flying Horse North, Filing No. 7 dated November 12, 2025 (Reference 8)

- Soil and Geology Study, Wastewater Study, Flying Horse North, Filing No. 8 dated October 15, 2025 (Reference 9)

### **3 SCOPE OF THE REPORT**

The scope of the report includes a general geologic analysis utilizing published geologic data. Detailed site-specific mapping was conducted to obtain general information in respect to major geographic and geologic features, geologic descriptions, and their effects on the development of the property in accordance with the El Paso Land Development Code.

### **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 Geology/Engineering Geology 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 Engineering Geology Map which identified pertinent geologic conditions affecting development. The field mapping was initially performed by personnel of Entech on January 26, 2015. Field mapping has continued to be conducted during our previous site investigations and current investigations of the Flying Horse North Development. The site mapping for Filing No.9 was completed on March 3 and 9, 2026. Site photographs are included in Appendix A.

Four (4) test borings were drilled, and four (4) test pits excavated on the project site to determine the soils classification and engineering characteristics and evaluate the proposed OWTS. The borings were drilled to depths of 20 feet using a truck-mounted, continuous flight auger drilling rig supplied and operated by Entech, and the test pits were excavated to depths ranging from 3.5 to 7 feet. The locations of the test borings, and test pits are indicated in the Site and Exploration Plan, Figure 3. The Test Boring Logs and Laboratory Test Results are included in Appendix B and C. Results of the testing will be discussed later in this report.

Laboratory testing was performed on the soils to classify and determine the soils engineering characteristics. Laboratory tests included moisture content testing, ASTM D2216, grain-size

analysis, ASTM D422, and Atterberg Limits, ASTM D4318. Swell testing included Swell/Collapse Tests.

## 5 SOIL, GEOLOGY, AND ENGINEERING GEOLOGY

### 5.1 General Geology

The site lies in the western portion of the Great Plains Physiographic Province. Approximately 10 miles to the west is a major structural feature known as the Rampart Range Fault. This fault marks the boundary between the Great Plains Physiographic Province and the Southern Rocky Mountain Province. The site exists within the southeastern 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 10). 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 Arkose Formation. Overlying this formation are unconsolidated deposits of residual, colluvial soils of the Quaternary Age. The residual soils are produced by the in-situ action of weathering of the bedrock on site, colluvial soils exist which are deposited by gravity and sheetwash. 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 11), previously the Soil Conservation Service (Reference 12) has mapped two soil types on the site (Figure 4). In general, they vary from sandy loam to loam with subsoils of clay loam. The soils are described in exhibit 1 below.

**Exhibit 1: Soil Survey Descriptions**

Type	Description
26	Elbeth sandy loam, 8 – 15% slopes
67	Peyton sandy loam, 5 – 9% slopes

Complete descriptions of the soil types are presented in Appendix D. The soils have generally been described as having 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. Most of the soils have been described to have moderate erosion hazards.

### 5.3 Site Stratigraphy

The Geologic Map of the Black Forest Quadrangle showing the site is presented in Figure 5 (Reference 13). The Geology/Engineering Geology Map prepared for the site is presented in Figure 6. One mappable unit was identified on this site which is described as follows:

**Qc/Tkd Colluvium of Quaternary Age overlying Dawson Formation of Tertiary to Cretaceous Age:** The Dawson formation typically consists of arkosic sandstone with interbedded fine-grained sandstone, siltstone and claystone. Overlying this formation is a variable layer of residual soil. The residual soils were derived from the in-situ weathering of the bedrock materials on-site. These soils consisted of silty to clayey sands and sandy clays. Areas of colluvial soils may exist on some of the slopes on site. These materials are derived from the bedrock materials and have been re-deposited by the action of sheetwash and gravity.

The soils listed above were mapped from site-specific mapping, the *Geologic Map of the Black Forest Quadrangle* distributed by the Colorado Geological Survey in 2003 (Reference 14), the *Geologic Map of the Colorado Springs-Castle Rock Area*, distributed by the US Geological Survey in 1979 (Reference 15), and the *Geologic Map of the Denver 1° x 2° Quadrangle*, distributed by the US Geological Survey in 1981 (Reference 16). The Test Borings and Test Pit Logs used in evaluating the site are included in Appendix B. The Geology Map prepared for the site is presented in Figure 6.

### 5.4 Soil Conditions

The soils encountered in the test borings drilled on the site can be grouped into three general soil and rock types. The soils were classified using the Unified Soil Classification System (USCS).

Soil Type 1 classified as a loose to dense clayey sand, and silty sand (SC, SM). The majority of the sands were encountered a medium dense states. The sand was encountered in two of the test borings (TB-2 and TB-4) at depths ranging from the existing surface to 19 feet bgs, and extending to depths ranging from 4 feet and to the termination of TB-2 (20 Feet).

Soil Type 2 classified as stiff to very stiff sandy clay (CL). The clay was encountered in all of the test borings at depths ranging from the existing surface to 4 feet bgs, and extending to depths ranging from 6 to 19 feet and to the termination of TB-1 (20 feet). Swell/Collapse Testing resulted in volume changes of -0.3%. These results indicate a low consolidation and expansion potentials.

Soil Type 3 classified as a highly weathered to weathered sandstone or when classified as a soil very dense clayey sand (SC). The sandstone was encountered in two of the test borings (TB-3 and TB-4) at depths ranging from 6 to 17 feet bgs, and extending to the termination of the borings (20 Feet).

The Test Boring Logs and Laboratory Test results as a part of this investigation are included in Appendix B and summarized in Table B-1, and Laboratory Test Results are included in Appendix C and summarized in Table B-2.

## **5.5 Groundwater**

Groundwater was not encountered in any of the test borings which were drilled to 20 feet. Redoximorphic features were not encountered in the test pits which were excavated to depths of 3.5 to 7 feet. Areas of potentially seasonal shallow groundwater has been mapped along the minor drainage swales and low-lying areas in portions of Lots 2 – 6 and the detention pond tract. These areas are discussed in the following section. Fluctuation in groundwater conditions may occur due to variations in rainfall and other factors including development of the site and surrounding areas.

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 or clays. Builders and planners should be cognizant of the potential for the occurrence of such subsurface water features during construction on-site and mitigate 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 a Geology/Engineering Geology Map Figure 6. 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. No significant geologic hazards were identified on the site, however, the following constraints have been identified on the site a potentially expansive soils, potentially seasonal shallow groundwater areas, and the potential for elevated Radon. These constraints and the recommended mitigation techniques are as follows:

### Artificial Fill – Constraint

Significant areas of fill were not observed on the site, however, if uncontrolled or undocumented fill is encountered in proposed building areas mitigation will be necessary.

Mitigation: Any uncontrolled fill encountered within roadway or building areas will require removal and recompaction to a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D1557.

### Expansive Soils – Constraint

The site is classified in an area of low to moderate swell potential according to *the Map of Potentially Swelling Soil and Rock in the Front Range Urban Corridor, Colorado* by Hart, 1974 (Reference 16). Expansive soils were encountered in previous investigations of the Flying Horse North Development (References 1 – 9). These occurrences are typically sporadic; therefore, none have been indicated on the maps. These clays, if encountered beneath foundations, can cause differential movement in the structure foundation. These occurrences should be identified and mitigated with on an individual basis.

Mitigation: If expansive soils are encountered beneath foundations; mitigation will be necessary. Mitigation of expansive soils will require special foundation design. Overexcavation and replacement with non-expansive soils to a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D1557 is a suitable mitigation, which is common in the area. Overexcavation depths of 3 – 5 feet may be necessary depending on soil conditions. Floor slabs on expansive soils should be expected to experience movement. Overexcavation and replacement has been successful in minimizing slab movements.

### Drainage and Floodplain Areas

Filing No. 9 does not lie within any floodplain zones according to the FEMA Map No.08041CO315G, dated December 7, 2018 (Figure 7, Reference 17). The exact locations of floodplain and specific drainage studies are beyond the scope of this report. Additionally, Filing No. 9 has not been included in any mapped wetlands according to National Wetland Inventory (Reference 18). Minor drainage swales were observed in the western portion of Filing No. 9 on portions of Lots 2 – 6 and the detention pond tract. Water was not observed flowing in the minor drainage swales at the time of this investigation, however, these areas have been identified as potential seasonally shallow groundwater areas and have identified on the Geology/Engineering Geology Map, Figure 6.

### Potentially Seasonal Shallow Groundwater Area – Constraint

In these areas, we would anticipate the potential for periodically high subsurface moisture conditions, frost heave potential and highly organic soils. These areas lie along minor drainage swales and low-lying areas in the western portion of Filing No. 9 along portions of Lots 2 – 6 and the detention pond tract. The same mitigation recommendations for the seasonal shallow groundwater areas apply to the potentially seasonal shallow groundwater areas.

Mitigation: Foundations must have a minimum 30-inch depth for frost protection. Buildings should be a minimum of 3 feet above groundwater levels. Subsurface perimeter drains are recommended for any usable below grade areas including crawlspaces. Should groundwater be encountered at within 3 feet of foundation grade additional drains may be needed to include: interceptor drains, under slab drain (capillary break) and overexcavation drains. Typical drain details are presented in Figures 8 – 11. Any grading in these areas should be done to direct surface flow around construction to avoid areas of ponded water. Structures should not block drainages. All organic material should be completely removed prior to any fill placement. Septic fields should not be placed in areas where there is the potential for shallow groundwater. Excavation and potential stabilization recommendations (if needed) are provided in Section 9.

### Slope Stability and Landslide Susceptibility – Hazard

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

### Shallow Bedrock – Constraint

Bedrock was encountered in two of the test borings at depths of 6 to 17 feet, and weathered bedrock was encountered in the test pits at depths ranging from 2 to 5 feet located within Filing No. 9. A Summary of the Depth to Bedrock is included in Table B-1 for the recent borings. Where claystone or sandstone are encountered, excavation/grading may be difficult requiring track-mounted excavators. Bedrock will potentially be encountered in cuts for utility excavations. The potential for seasonally perched groundwater may occur in areas of shallow bedrock and within more permeable layers of the Dawson Formation.

### 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 area have been reported by the Colorado

Geologic Survey in the open file, Report No. 91-4 (Reference 19). Average Radon levels for the 80908-zip code is 3.40 pCi/l. Exhibit 2 below presents the radon levels in this area.

**Exhibit 2: Radon Levels**

Average Radon Levels for the 80908 Zip Code	
0 < 4 pCi/L	50.00%
4 < 10 pCi/L	50.00%
10 < 20 pCi/L	0.00%
> 20 pCi/L	0.00%

Mitigation:

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

**6.1 Relevance of Geologic Conditions to Land Use Planning**

We understand that the development will be rural residential utilizing individual water wells and OWTS. It is our opinion that the existing geologic and engineering geologic conditions will impose some minor constraints on the proposed development and construction. The most significant issues affecting development will be those associated with the minor drainage swales that can be avoided. Other hazards on site may be satisfactorily mitigated through proper engineering design and construction practices.

The upper residual soils are typically at medium to very dense states. The granular soils encountered in the upper soil profiles of the test borings should provide good support for foundations. Expansive soils were encountered on portions of the site that will require mitigation. In addition, any loose areas will require recompaction. Foundations anticipated for the site are standard spread footings on granular soils or in conjunction with overexcavation in areas of expansive soils. Areas containing arkosic sandstone will have high allowable bearing conditions.

Difficult excavation should be anticipated in areas of shallow bedrock. 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. Bearing capacities of 2000 to 2400 psf for granular soils or structural fill, and 3000 to 3500 psf for undisturbed sandstone are anticipated.

Filing No. 9 does not lie within any floodplain zones according to the FEMA Map No.08041CO315G, dated December 7, 2018 (Figure 7, Reference 14). The exact locations of floodplain and specific drainage studies are beyond the scope of this report. Additionally, Filing No. 9 has not been included in any mapped wetlands according to National Wetland Inventory (Reference 15). Minor drainage swales were observed in the western portion of Filing No. 9 on portions of Lots 2 – 6 and the detention pond tract. Water was not observed flowing in the minor drainage swales at the time of this investigation, however, these areas have been identified as potential seasonally shallow groundwater areas and have identified on the Geology/Engineering Geology Map, Figure 6.

It is anticipated that many of the minor drainages will can be regraded or avoided. Based on the borings over the past several years' groundwater is not expected to affect the proposed construction. Subsurface perimeter drains are recommended for any below grade usable areas including crawlspaces. Should groundwater be encountered at within 3 feet of foundation grade additional drains may be needed to include: interceptor drains, under slab drain (capillary break) and overexcavation drains. Typical drain details are presented in Figures 8 – 11. Specific recommendations should be made once development plans have been determined and additional site investigation is completed.

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 of the individual lots and building sites is 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 20), 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 21), areas of the site are not mapped with any resources. According to the *Evaluation of Mineral and Mineral Fuel Potential* (Reference 22), 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

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 22), 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 near the site. No metallic mineral resources have been mapped on the site (Reference 22).

The site has been mapped as “Fair” for oil and gas resources (Reference 22). No oil or gas fields have been discovered near 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.

Regarding 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 STORMWATER DETENTION FACILITY CONSTRUCTION RECOMMENDATIONS**

In general, the site soils are suitable for the proposed roadways and embankments. The proposed detention pond at the western portion of the site can be constructed with site materials. Groundwater may be encountered in deeper cuts and along drainages and low-lying areas. Additional investigation of these areas is recommended as plans are completed. If excavations encroach on the groundwater level unstable soil conditions may be encountered. Excavation of saturated soils will be difficult with rubber-tired equipment. Stabilization using shot rock or geogrids may be necessary.

Any areas to receive fill should have all topsoil, organic material or debris removed. Prior to fill placement Entech should observe the subgrade. Fill must be properly benched and compacted to minimize potentially unstable conditions in slope areas. Fill slopes should be 3:1 or flatter. 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  $\pm 2\%$  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. Construction and design personnel should be made familiar with the contents of this report. Additional investigation is required as plans (grading and development) are generated and prior to construction on individual building sites.

This report has been prepared for Flying Horse North, 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.

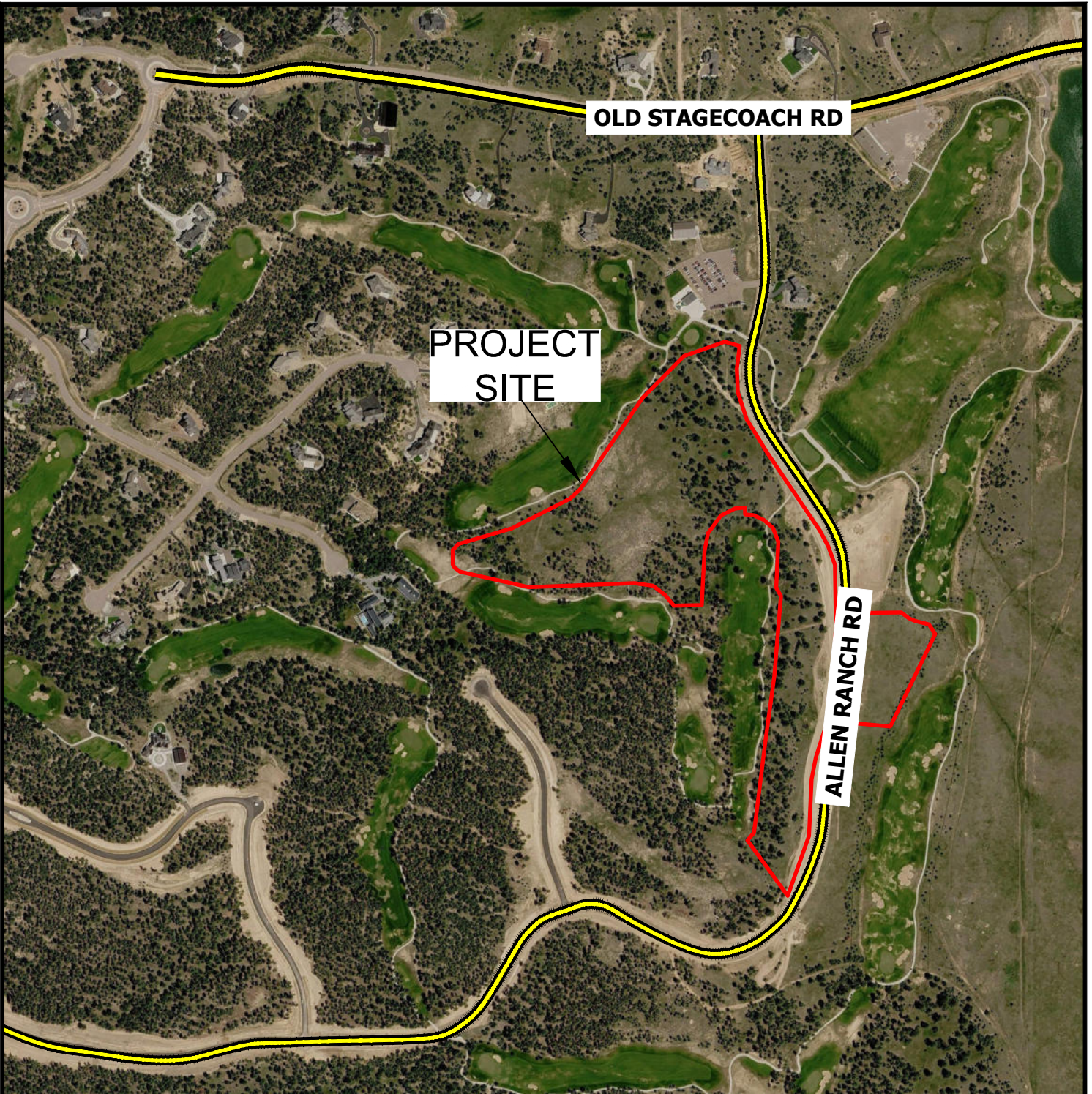
We trust that this report has provided you with all the information that you required. Should you require additional information, please do not hesitate to contact Entech Engineering, Inc.

## 11 REFERENCES

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

20. El Paso County Planning Development. December 1995. *El Paso County Aggregate Resource Evaluation Maps*.
21. Schwochow, S.D.; Shroba, R.R. and Wicklein, P.C. 1974. *Atlas of Sand, Gravel, and Quarry Aggregate Resources, Colorado Front Range Counties*. Colorado Geological Survey. Special Publication 5-B.
22. Keller, John W.; TerBest, Harry and Garrison, Rachel E. 2003. *Evaluation of Mineral and Mineral Fuel Potential of El Paso County State Mineral Lands Administered by the Colorado State Land Board*. Colorado Geological Survey. Open-File Report 03-07.

## FIGURES

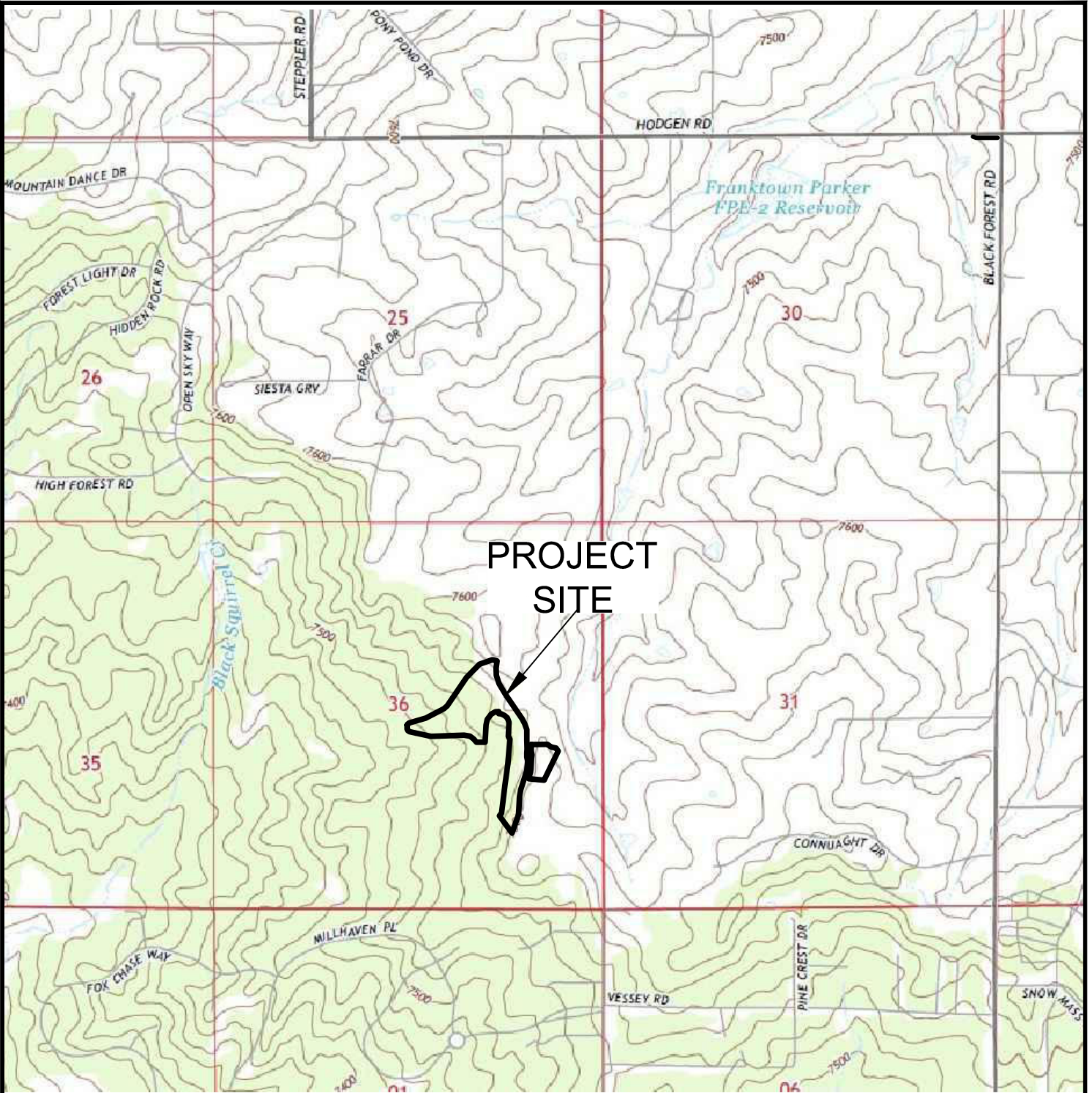


**VICINITY MAP**

FLYING HORSE NORTH - FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

**FIG. 1**

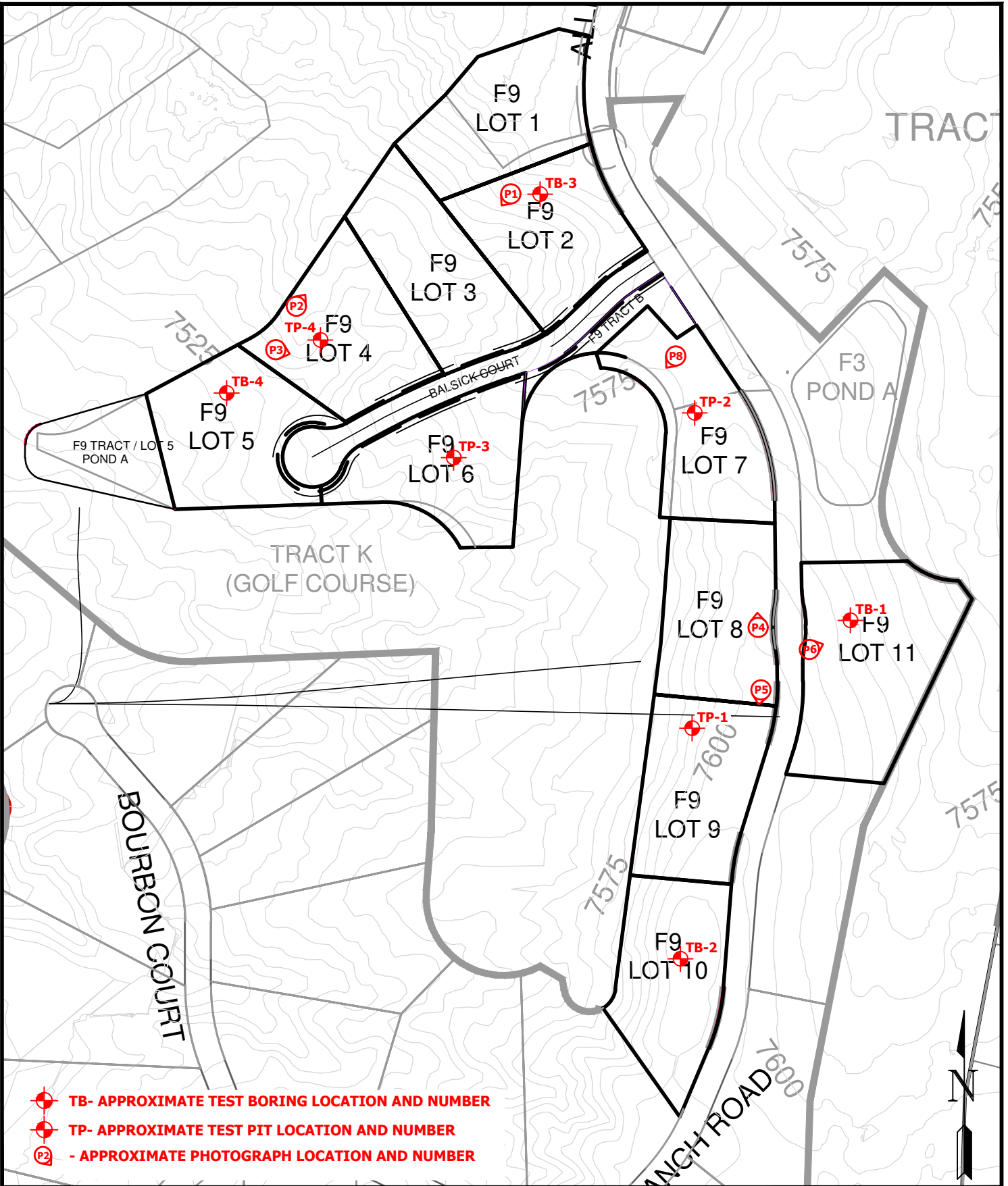





**USGS TOPOGRAPHY MAP**

FLYING HORSE NORTH - FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

**FIG. 2**



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

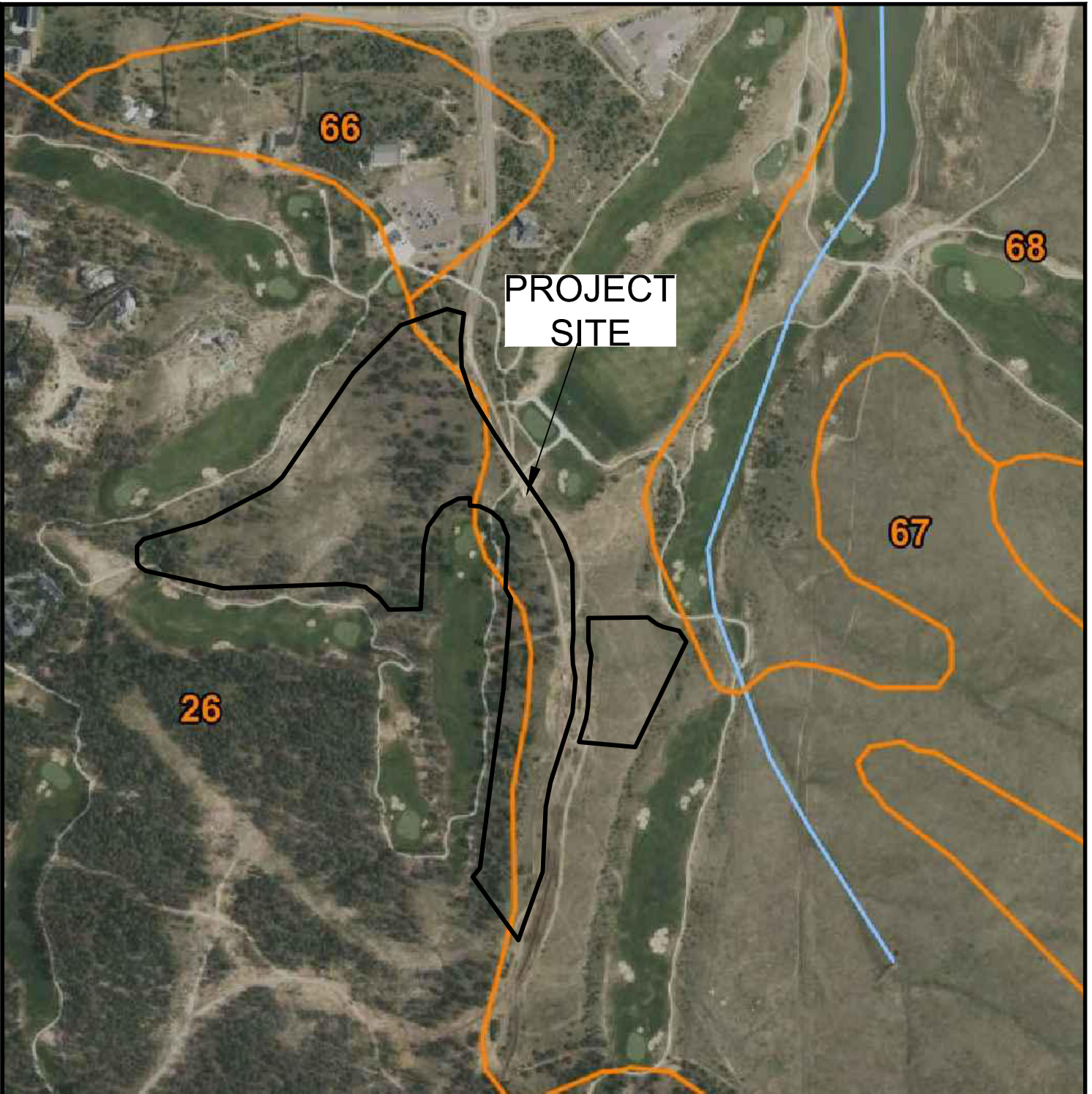


**SITE & EXPLORATION PLAN**

FLYING HORSE NORTH - FILING NO. 9  
 FLYING HORSE NORTH, LLC

JOB NO.  
 260456

**FIG. 3**

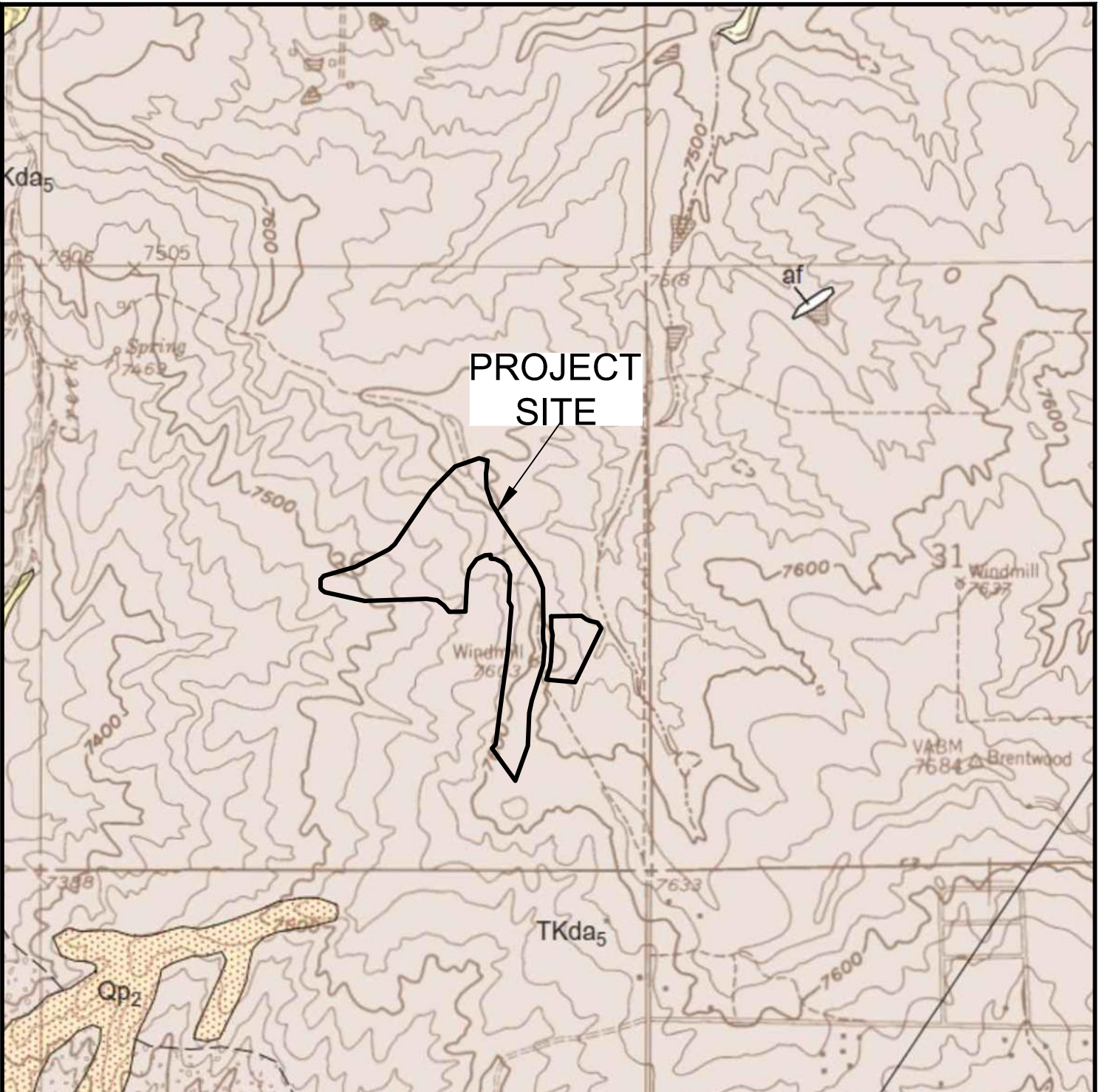


**SOIL SURVEY MAP**

FLYING HORSE NORTH - FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

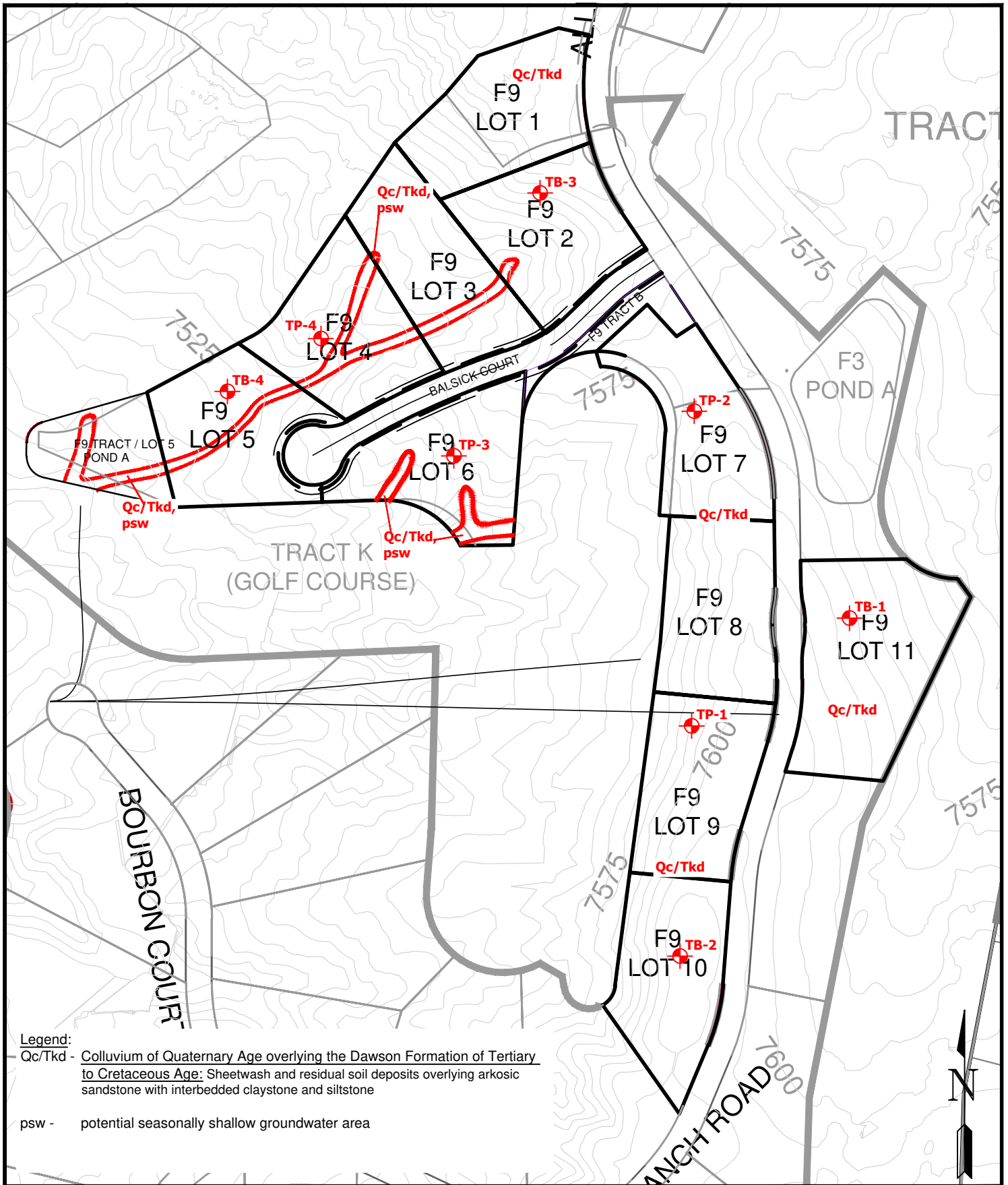
**FIG. 4**



**GEOLOGIC MAP OF THE  
BLACK FOREST QUADRANGLE**  
FLYING HORSE NORTH - FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

**FIG. 5**



**Legend:**  
 Qc/Tkd - Colluvium of Quaternary Age overlying the Dawson Formation of Tertiary to Cretaceous Age; Sheetwash and residual soil deposits overlying arkosic sandstone with interbedded claystone and siltstone  
 psw - potential seasonally shallow groundwater area



**GEOLOGY/ENGINEERING  
 GEOLOGY MAP**  
 FLYING HORSE NORTH - FILING NO. 9  
 FLYING HORSE NORTH, LLC

JOB NO.  
 250099

**FIG. 6**



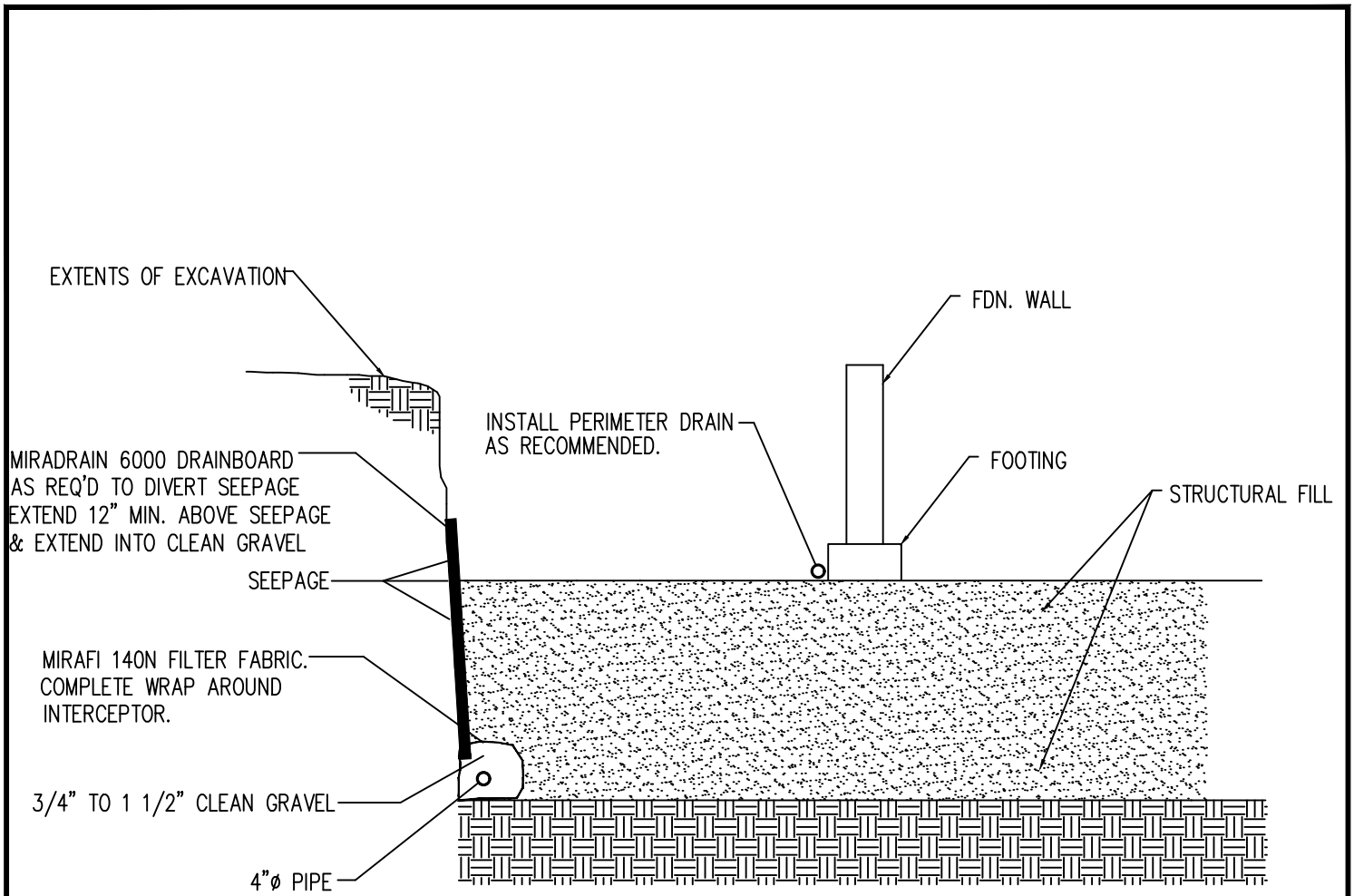
**FEMA FLOODPLAIN MAP**

FLYING HORSE NORTH - FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

**FIG. 7**





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

## INTERCEPTOR DRAIN DETAIL

N.T.S.

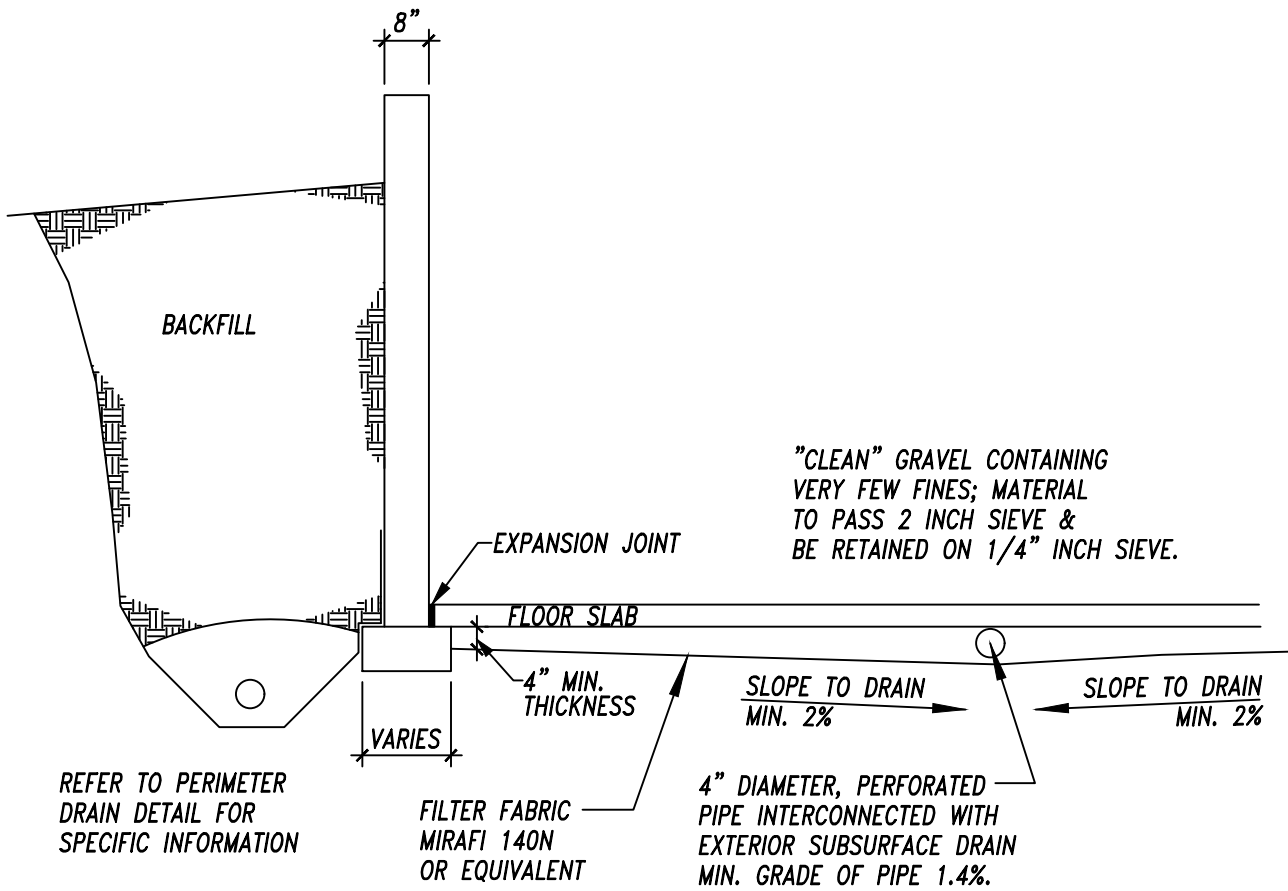


### INTERCEPTOR DRAIN DETAIL

FLYING HORSE NORTH PUD - FILING NO. 9  
 FLYING HORSE NORTH, LLC

JOB NO.  
 260456

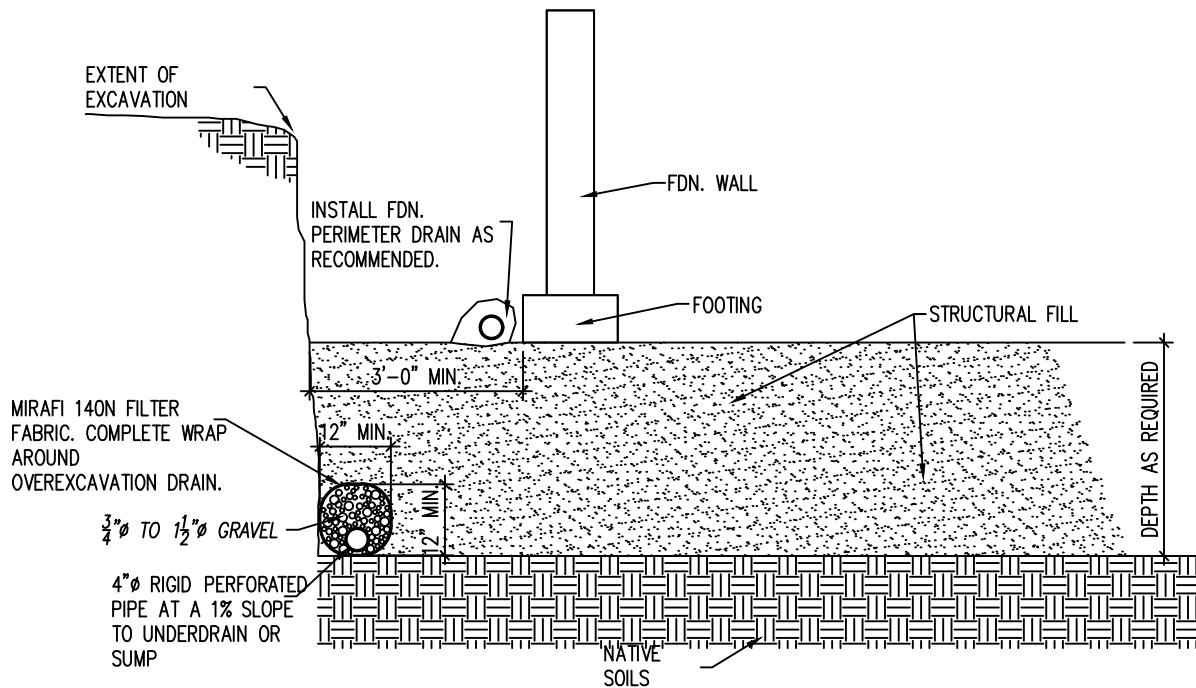
**FIG. 9**



**TYP. UNDERSLAB DRAINAGE LAYER  
(CAPILLARY BREAK)**  
FLYING HORSE NORTH - FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

**FIG. 10**



## OVEREXCAVATION DRAIN DETAIL

N.T.S.

NOTE:  
EXTEND DRAIN TO SUMP AS REQ'D.



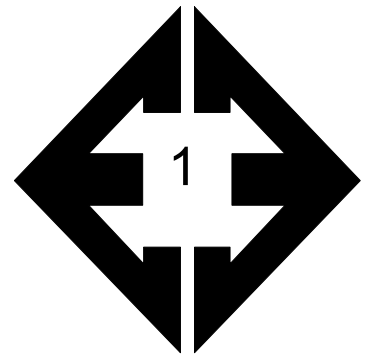
### OVEREXCAVATION DRAIN

FLYING HORSE NORTH - FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

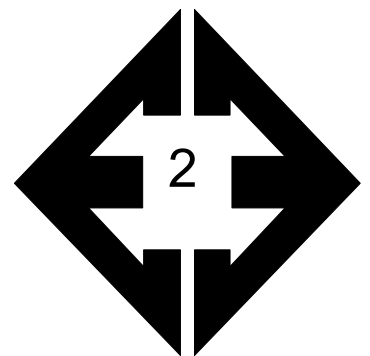
**FIG. 11**

## **APPENDIX A: Site Photographs**



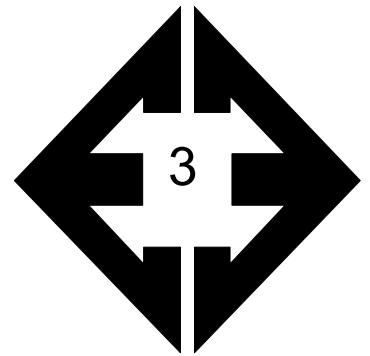
**Looking west from the northeastern portion of the site.**

March 9, 2026



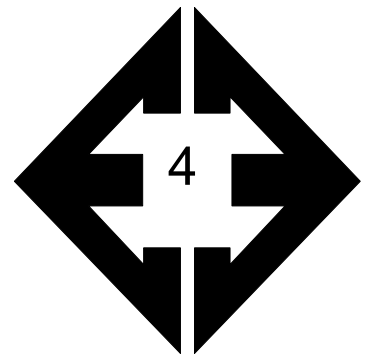
**Looking northeast from the western portion of the site.**

March 9, 2026



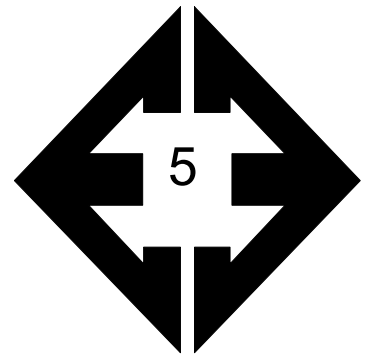
**Looking southeast  
from the northwest  
portion of the site.**

March 9, 2026



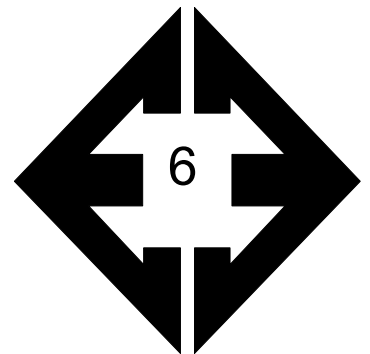
**Looking north along  
the western side of  
Allen Ranch Road.**

March 3, 2026



**Looking south along  
the west side of Allen  
Ranch Road.**

March 3, 2026



**Looking east from the  
east side of Allen  
Ranch Road.**

March 9, 2025

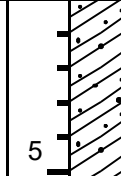
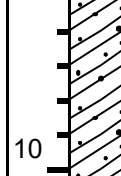
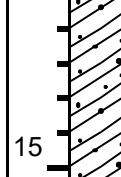
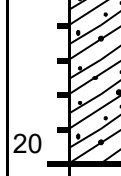



## **APPENDIX B: Test Boring and Test Pit Logs**

TEST BORING 1  
DATE DRILLED 3/18/2026

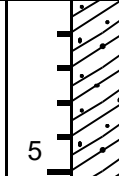
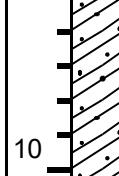
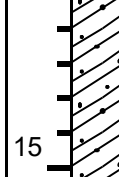
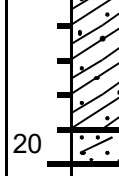

TEST BORING 2  
DATE DRILLED 3/18/2026

REMARKS  
  
DRY TO 20', 3/19/26

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			17	5.6	2
5			18	7.7	2
10			16	5.9	2
15			12	9.9	2
20			16	13.8	2

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

REMARKS  
  
DRY TO 20', 3/19/26

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			26	7.8	2
5			22	6.8	2
10			10	7.9	2
15			18	8.8	2
20			30	4.1	1

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

SAND, CLAYEY, TAN, DENSE, MOIST



**TEST BORING LOGS**  
FLYING HORSE NORTH, FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

**FIG. B-1**

TEST BORING 3  
 DATE DRILLED 3/18/2026

TEST BORING 4  
 DATE DRILLED 3/18/2026

REMARKS

REMARKS

DRY TO 20', 3/19/26

DRY TO 20', 3/19/26

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

SAND, SILTY, LIGHT BROWN, LOOSE, MOIST

CLAY, SANDY, TAN, STIFF, MOIST

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

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

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5	[Diagonal Hatching]		13	5.9	2	5	[Diagonal Hatching]		7	3.8	1
5	[Diagonal Hatching]		15	6.2	2	5	[Diagonal Hatching]		12	15.3	2
10	[Dotted]		14	7.5	2	10	[Dotted]		50 2"	10.0	3
15	[Dotted]		18	8.0	2	15	[Dotted]		50 4"	8.5	3
20	[Dotted]		50 10"	6.9	3	20	[Dotted]		50 7"	11.6	3



**TEST BORING LOGS**  
 FLYING HORSE NORTH, FILING NO. 9  
 FLYING HORSE NORTH, LLC

JOB NO.  
 260456  
**FIG. B-2**

**TABLE B-1**  
**DEPTH TO BEDROCK**

TEST BORING	DEPTH TO BEDROCK (ft.)
1	>20
2	>20
3	17
4	6

TEST PIT 1  
 DATE EXCAVATED 3/10/2026

TEST PIT 2  
 DATE EXCAVATED 3/10/2026

REMARKS

REMARKS

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	Soil Type	REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	Soil Type
refusal @ 6'							refusal @ 3.5'						
topsoil 0-9", sandy clay, dark brown, moist	1						topsoil 0-6", sandy clay loam, dark brown, moist	1					
sandy clay, fine grained, brown, moist	2						sandy clay loam, fine to medium grained, brown, moist	2			gr	w	3A
	3			gr	m	4	weathered sandstone, Dawson Formation (sandy clay loam, fine to coarse grained, light brown, moist)	3			ma		3A
sandy clay loam, fine to coarse grained, light brown, moist	4							4					
weathered sandstone, Dawson Formation (sandy clay loam, fine to coarse grained, light brown, moist)	5					3A		5					
	6							6					
	7							7					
	8							8					
	9							9					
	10							10					

Soil Structure Shape

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

Soil Structure Grade

weak - w  
 moderate - m  
 strong - s  
 loose - l  
 structureless - sl



**TEST PIT LOGS**

FLYING HORSE NORTH FILING NO. 9  
 FLYING HORSE NORTH, LLC

JOB NO.  
 260456

**FIG. B-3**

TEST PIT 3  
 DATE EXCAVATED 3/10/2026

TEST PIT 4  
 DATE EXCAVATED 3/10/2026

REMARKS

REMARKS

refusal @ 3.5'

topsoil 0-6", sandy clay loam, dark brown, moist

sandy clay loam, fine to coarse grained, brown, moist

weathered sandstone, Dawson Formation (sandy clay loam, fine to coarse grained, light brown, moist)

topsoil, sandy clay loam, dark brown, moist

gravelly, sandy loam, fine to coarse grained, tan, moist

weathered sandstone, Dawson Formation (sandy clay loam, fine to coarse grained, light brown, moist)

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

Soil Structure Shape

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

Soil Structure Grade

- weak - w
- moderate - m
- strong - s
- loose - l



**TEST PIT LOGS**

FLYING HORSE NORTH FILING NO. 9  
 FLYING HORSE NORTH, LLC

JOB NO.  
 260456

**FIG. B-9**

## **APPENDIX C: Laboratory Test Results**

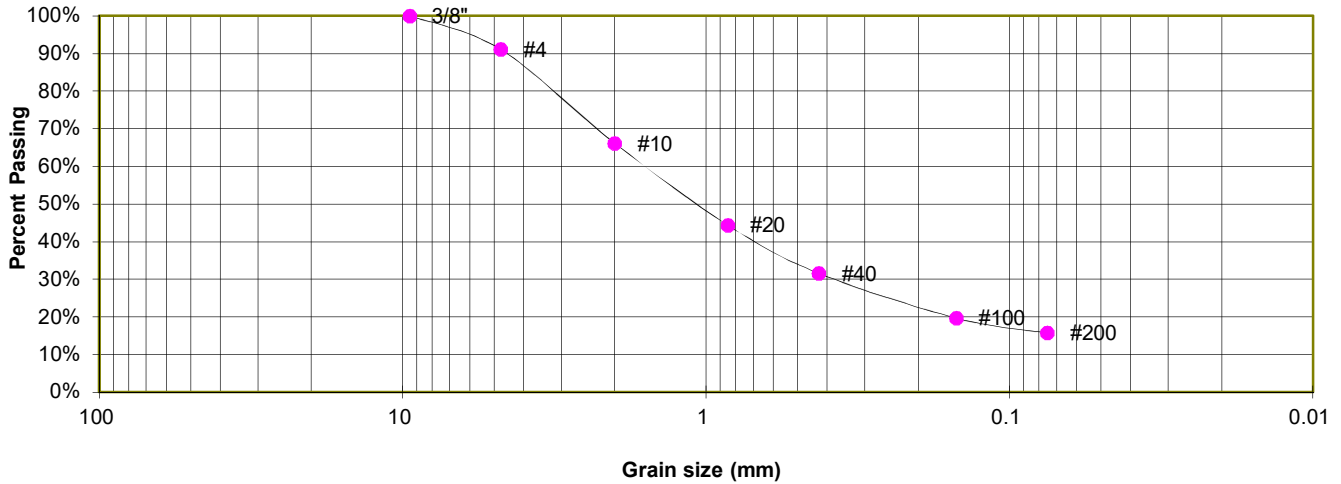
**TABLE C-1  
SUMMARY OF LABORATORY TEST RESULTS**

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	4	2-3			15.7	NV	NP	NP	<0.01		SM	SAND, SILTY
2	1	2-3			56.2	28	20	8			CL	CLAY, SANDY
2	1	5			60.7	31	22	9			CL	CLAY, SANDY
2	2	15	10.1	113.6	56.6	32	21	11	0.00	-0.3	CL	CLAY, SANDY
2	3	5			60.1						CL	CLAY, SANDY
3	4	10			32.7	35	22	13	<0.01		SC	SANDSTONE (SAND, CLAYEY)

TEST BORING 4  
 DEPTH (FT) 2-3

SOIL DESCRIPTION SAND, SILTY  
 SOIL TYPE 1

**Sieve Analysis  
 Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	91.1%
10	66.1%
20	44.4%
40	31.6%
100	19.7%
200	15.7%

**ATTERBERG LIMITS**

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SM



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH, FILING NO. 9  
 FLYING HORSE NORTH, LLC

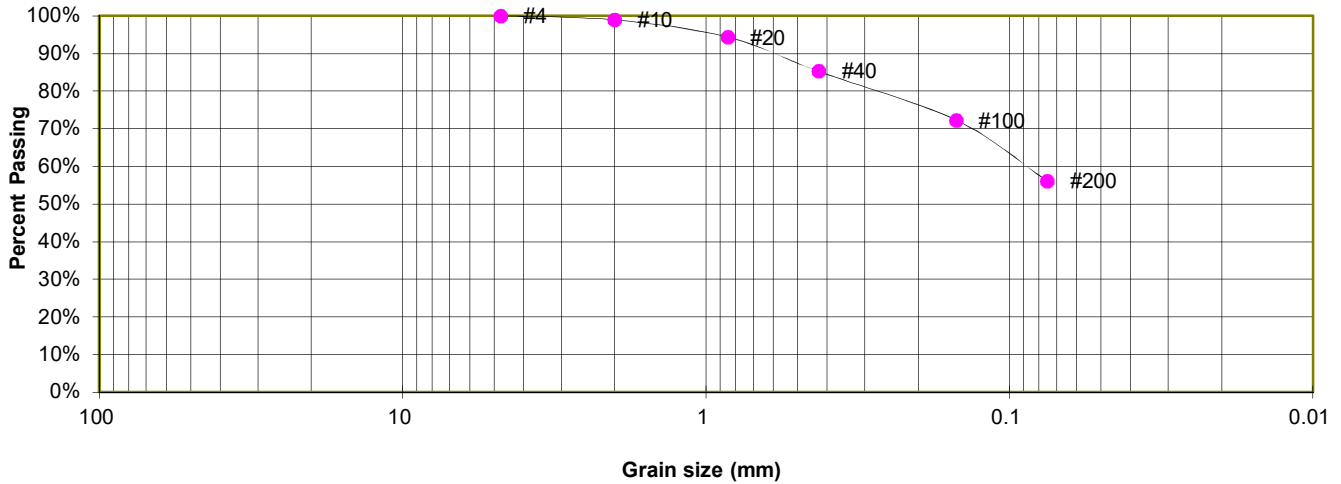
JOB NO.  
 260456

**FIG. C-1**

TEST BORING 1  
 DEPTH (FT) 2-3

SOIL DESCRIPTION CLAY, SANDY  
 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	100.0%
10	98.9%
20	94.4%
40	85.3%
100	72.3%
200	56.2%

**ATTERBERG LIMITS**

Plastic Limit	20
Liquid Limit	28
Plastic Index	8

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: CL



**LABORATORY TEST RESULTS**

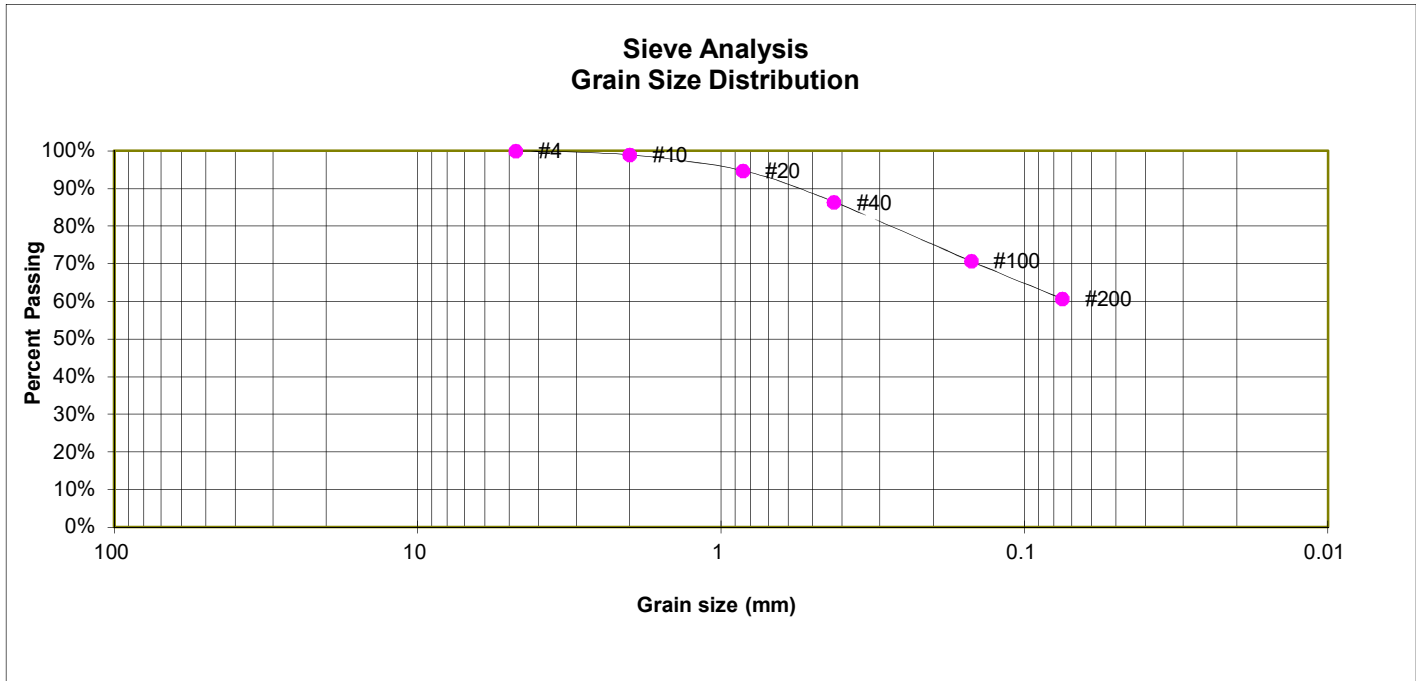
FLYING HORSE NORTH, FILING NO. 9  
 FLYING HORSE NORTH, LLC

JOB NO.  
 260456

**FIG. C-2**

TEST BORING 1  
 DEPTH (FT) 5

SOIL DESCRIPTION CLAY, SANDY  
 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	94.8%
40	86.4%
100	70.7%
200	60.7%

**ATTERBERG LIMITS**

Plastic Limit	22
Liquid Limit	31
Plastic Index	9

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: CL



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH, FILING NO. 9  
 FLYING HORSE NORTH, LLC

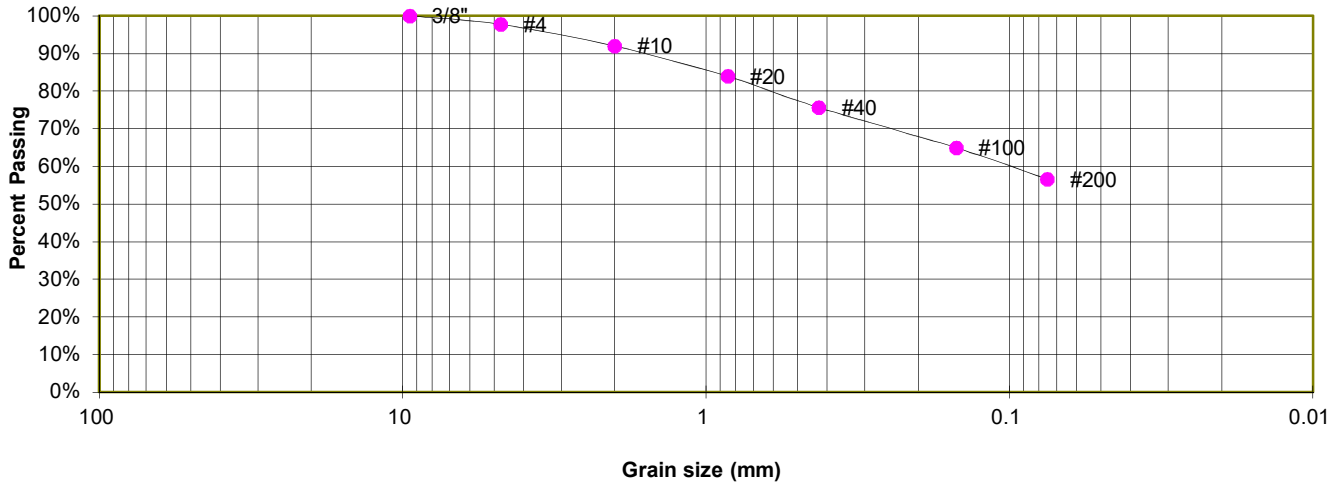
JOB NO.  
 260456

**FIG. C-3**

TEST BORING 2  
 DEPTH (FT) 15

SOIL DESCRIPTION CLAY, SANDY  
 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"	100.0%
4	97.7%
10	92.0%
20	83.9%
40	75.6%
100	65.0%
200	56.6%

**ATTERBERG LIMITS**

Plastic Limit	21
Liquid Limit	32
Plastic Index	11

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: CL



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH, FILING NO. 9  
 FLYING HORSE NORTH, LLC

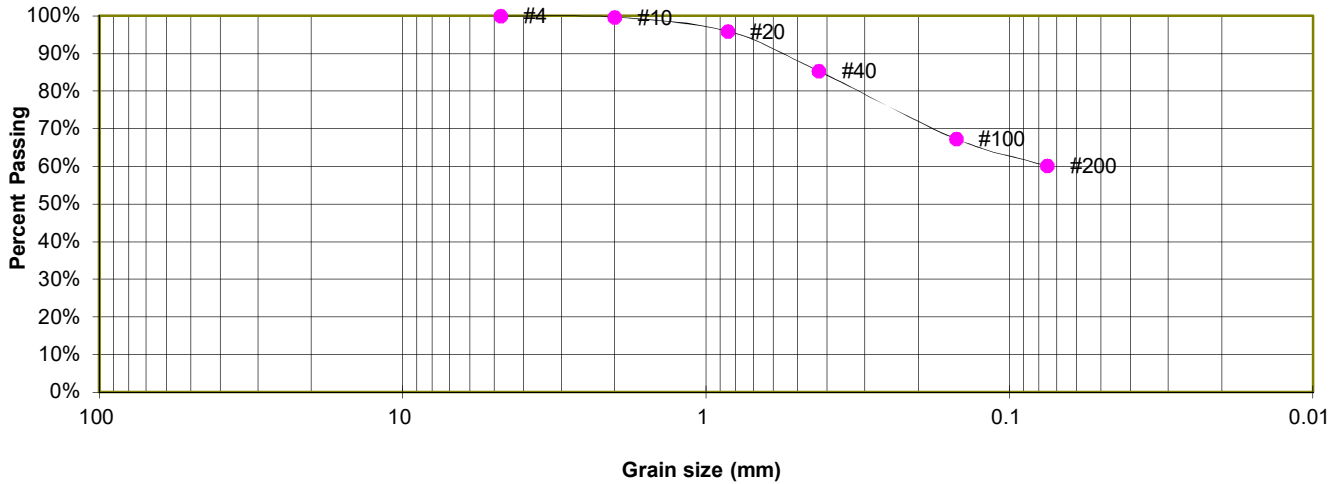
JOB NO.  
 260456

**FIG. C-4**

TEST BORING 3  
DEPTH (FT) 5

SOIL DESCRIPTION CLAY, SANDY  
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	100.0%
10	99.7%
20	96.0%
40	85.3%
100	67.3%
200	60.1%

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: CL



### LABORATORY TEST RESULTS

FLYING HORSE NORTH, FILING NO. 9  
FLYING HORSE NORTH, LLC

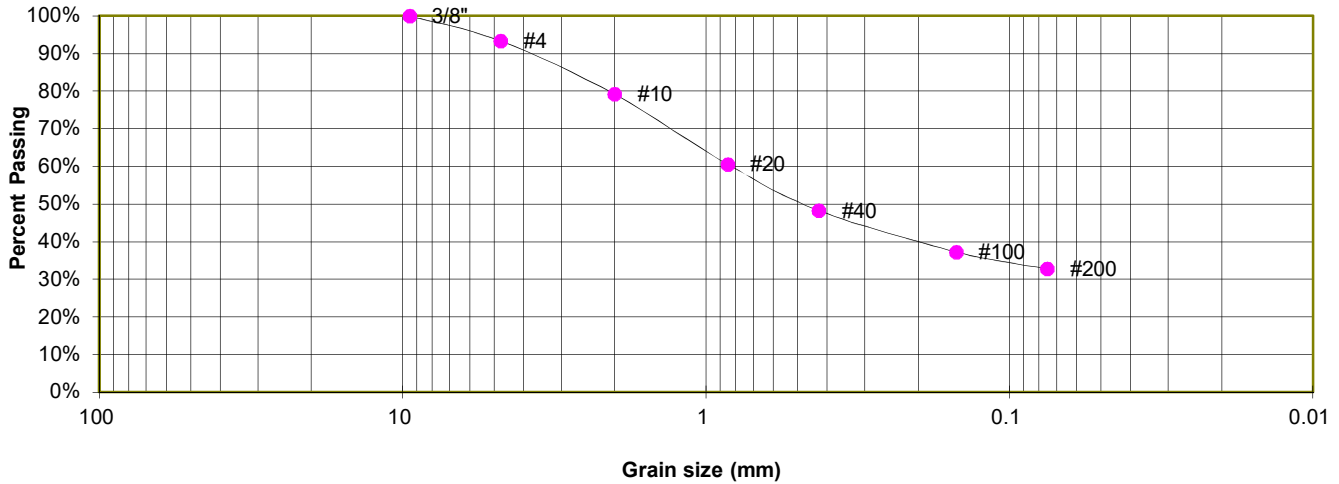
JOB NO.  
260456

**FIG. C-5**

TEST BORING 4  
 DEPTH (FT) 10

SOIL DESCRIPTION SANDSTONE (SAND, CLAYEY)  
 SOIL TYPE 3

**Sieve Analysis  
 Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	93.3%
10	79.2%
20	60.6%
40	48.3%
100	37.3%
200	32.7%

**ATTERBERG LIMITS**

Plastic Limit	22
Liquid Limit	35
Plastic Index	13

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH, FILING NO. 9  
 FLYING HORSE NORTH, LLC

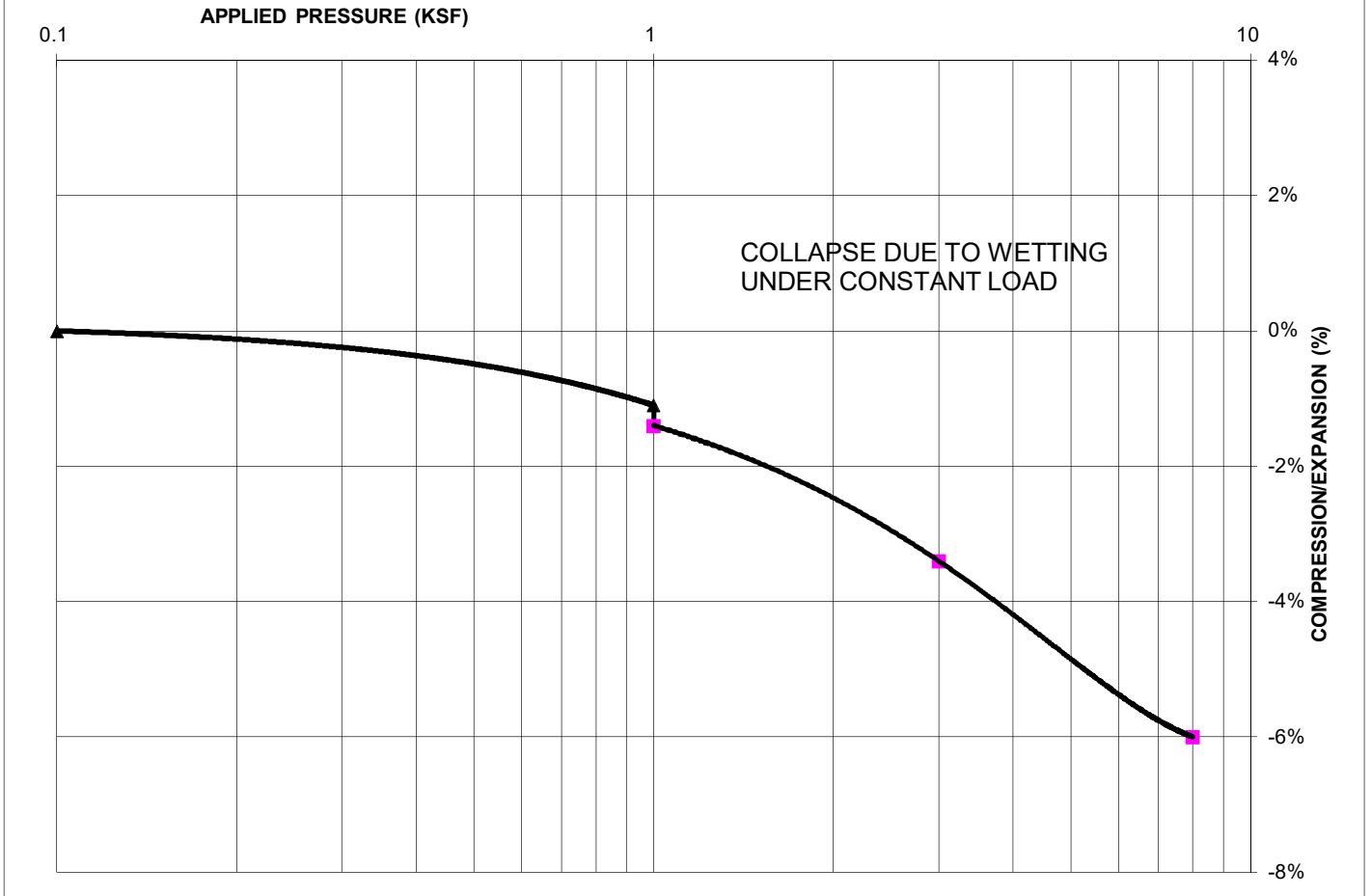
JOB NO.  
 260456

**FIG. C-6**

TEST BORING 2  
DEPTH (FT) 15

SOIL DESCRIPTION CLAY, SANDY  
SOIL TYPE 2

### SWELL CONSOLIDATION



#### **SWELL/COLLAPSE TEST RESULTS**

NATURAL UNIT DRY WEIGHT (PCF): 114  
NATURAL MOISTURE CONTENT: 10.1%  
SWELL/COLLAPSE (%): -0.3%



### SWELL TEST RESULTS

FLYING HORSE NORTH, FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

**FIG. C-7**

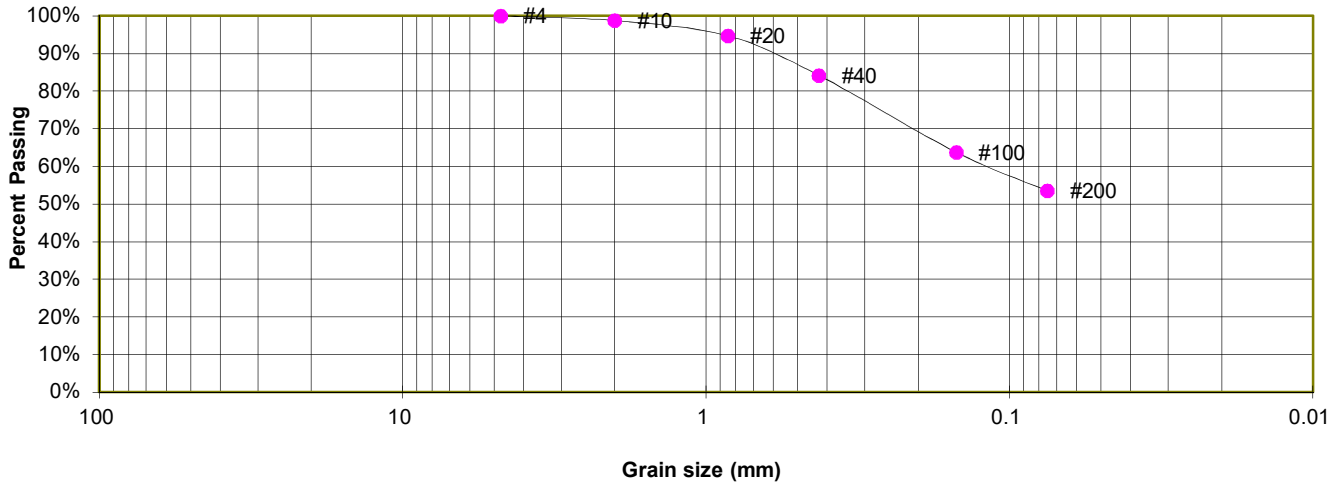
**TABLE C-2  
SUMMARY OF LABORATORY TEST RESULTS**

TEST BORING NO.	DEPTH (FT)	PASSING NO. 200 SIEVE (%)	USDA	USCS	SOIL DESCRIPTION
TP-1	3	53.5	4	CL	CLAY, SANDY
TP-1	5.5	35.8	3A	SC	SAND, CLAYEY
TP-2	2	41.1	3A	SC	SAND, CLAYEY
TP-2	3	42.0	3A	SC	SAND, CLAYEY
TP-3	2	47.5	3A	SC	SAND, CLAYEY
TP-4	3	9.2	2A	SW-SM	SAND, WITH SILT
TP-4	6	7.7	2A	SW-SM	SAND, WITH SILT

TEST BORING TP-1  
DEPTH (FT) 3

SOIL DESCRIPTION CLAY, SANDY

**Sieve Analysis  
Grain Size Distribution**



**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	94.7%
40	84.2%
100	63.8%
200	53.5%

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: CL



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH FILING NO. 9  
FLYING HORSE NORTH, LLC

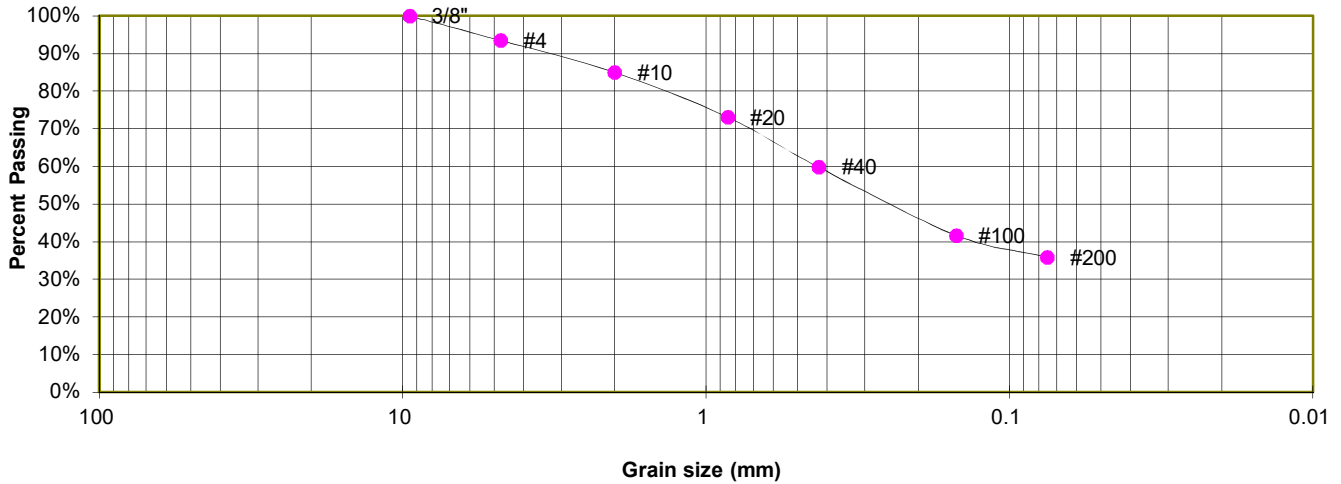
JOB NO.  
260456

**FIG. C-8**

TEST BORING TP-1  
DEPTH (FT) 5.5

SOIL DESCRIPTION SAND, CLAYEY

**Sieve Analysis  
Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	93.5%
10	85.0%
20	73.1%
40	59.8%
100	41.7%
200	35.8%

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH FILING NO. 9  
FLYING HORSE NORTH, LLC

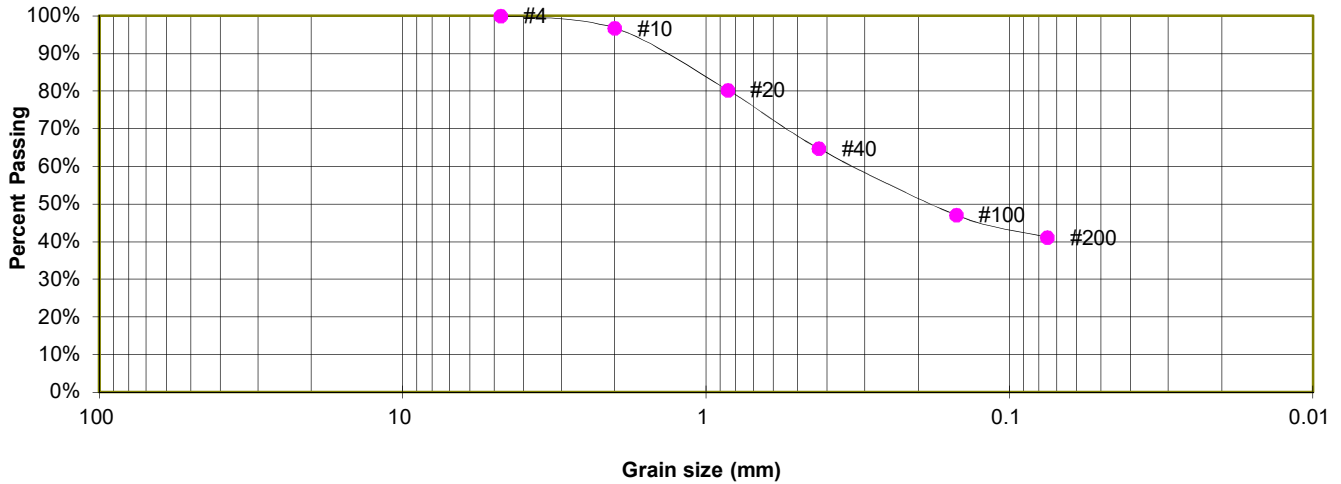
JOB NO.  
260456

**FIG. C-9**

TEST BORING TP-2  
DEPTH (FT) 2

SOIL DESCRIPTION SAND, CLAYEY

**Sieve Analysis  
Grain Size Distribution**



**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	80.3%
40	64.8%
100	47.1%
200	41.1%

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH FILING NO. 9  
FLYING HORSE NORTH, LLC

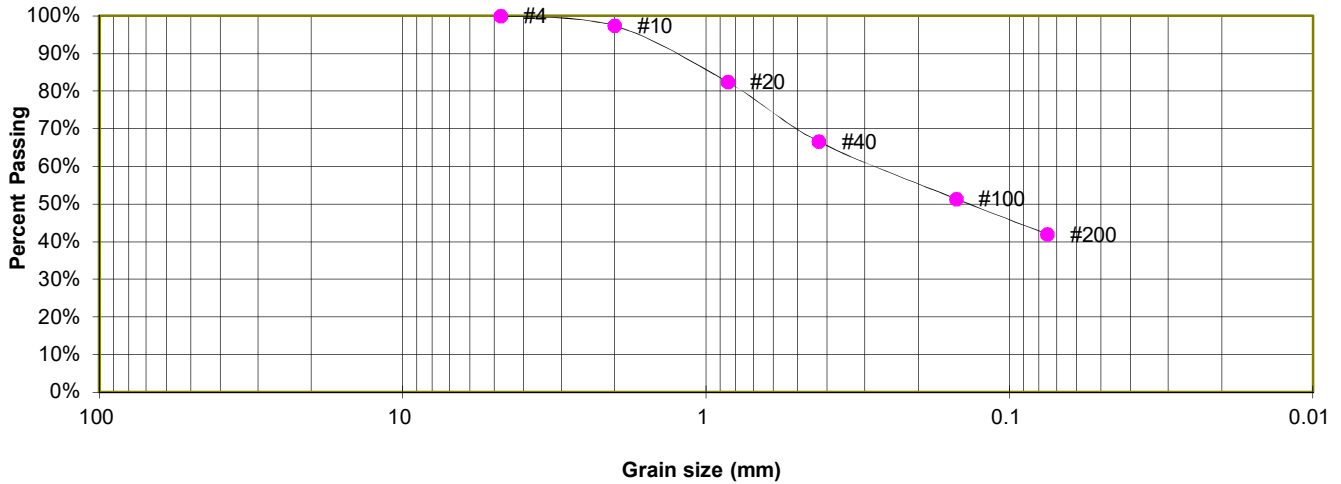
JOB NO.  
260456

**FIG. C-10**

TEST BORING TP-2  
DEPTH (FT) 3

SOIL DESCRIPTION SAND, CLAYEY

**Sieve Analysis  
Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	97.4%
20	82.4%
40	66.6%
100	51.4%
200	42.0%

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH FILING NO. 9  
FLYING HORSE NORTH, LLC

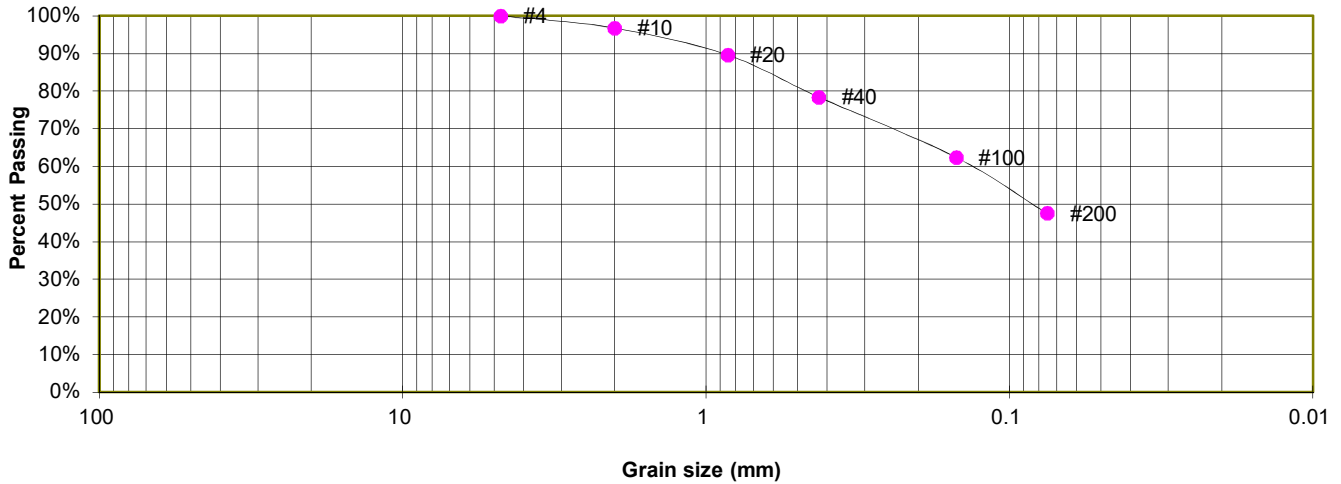
JOB NO.  
260456

**FIG. C-11**

TEST BORING TP-3  
DEPTH (FT) 2

SOIL DESCRIPTION SAND, CLAYEY

**Sieve Analysis  
Grain Size Distribution**



**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	89.6%
40	78.4%
100	62.4%
200	47.5%

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH FILING NO. 9  
FLYING HORSE NORTH, LLC

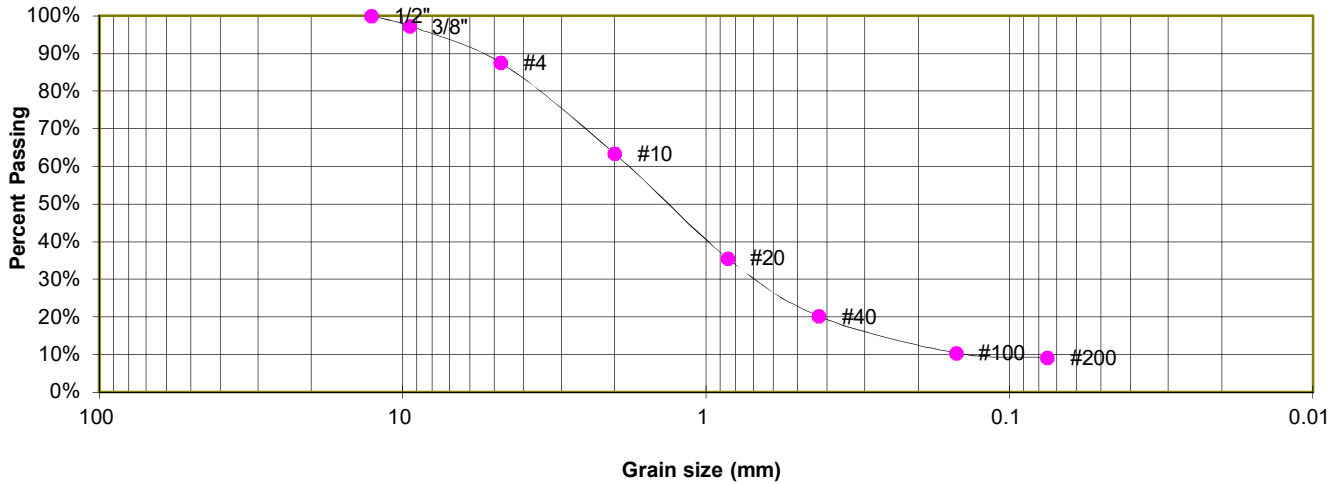
JOB NO.  
260456

**FIG. C-12**

TEST BORING TP-4  
 DEPTH (FT) 3

SOIL DESCRIPTION SAND, WITH SILT

**Sieve Analysis  
 Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	97.3%
4	87.5%
10	63.4%
20	35.6%
40	20.2%
100	10.4%
200	9.2%

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SW-SM



**LABORATORY TEST RESULTS**

FLYING HORSE NORTH FILING NO. 9  
 FLYING HORSE NORTH, LLC

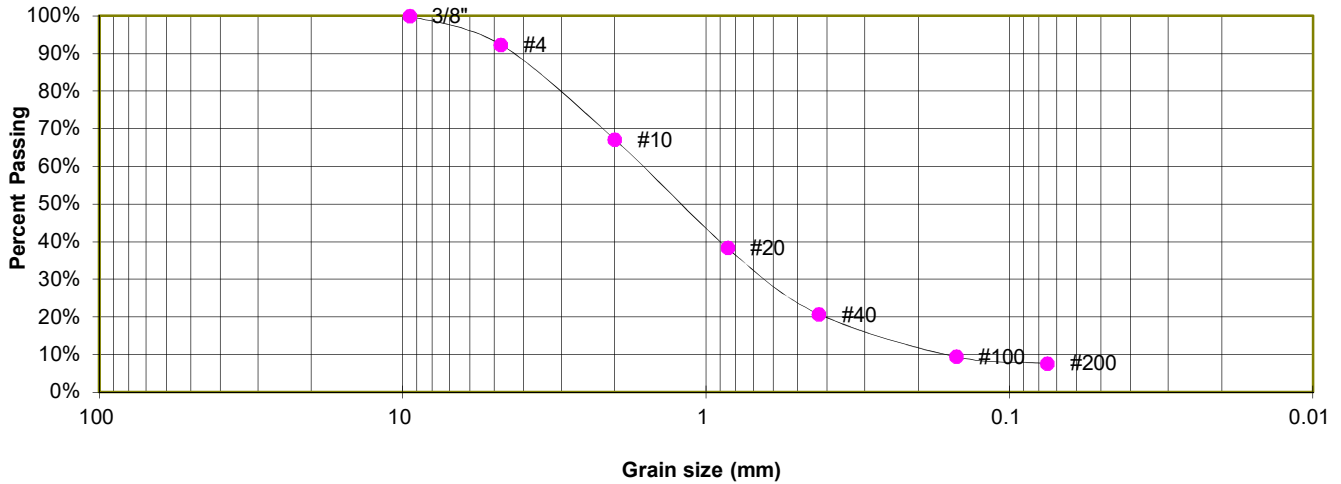
JOB NO.  
 260456

**FIG. C-13**

TEST BORING TP-4  
DEPTH (FT) 6

SOIL DESCRIPTION SAND, WITH SILT

### Sieve Analysis Grain Size Distribution



#### GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	92.4%
10	67.2%
20	38.3%
40	20.7%
100	9.4%
200	7.7%

#### SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM



### LABORATORY TEST RESULTS

FLYING HORSE NORTH FILING NO. 9  
FLYING HORSE NORTH, LLC

JOB NO.  
260456

**FIG. C-14**

## **APPENDIX D: USDA Soil Survey Descriptions**

## El Paso County Area, Colorado

### 26—Elbeth sandy loam, 8 to 15 percent slopes

#### Map Unit Setting

*National map unit symbol:* 367y  
*Landscape:* Uplands  
*Elevation:* 7,300 to 7,600 feet  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

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

#### Description of Elbeth

##### Setting

*Landscape:* Uplands  
*Landform:* Hills  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Alluvium derived from arkose

##### Typical profile

*A - 0 to 3 inches:* sandy loam  
*E - 3 to 23 inches:* loamy sand  
*Bt - 23 to 68 inches:* sandy clay loam  
*C - 68 to 74 inches:* sandy clay loam

##### Properties and qualities

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):*  
Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 7.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* B  
*Ecological site:* F048AY908CO - Mixed Conifer  
*Hydric soil rating:* No



### **Minor Components**

#### **Other soils**

*Percent of map unit:* 10 percent

*Hydric soil rating:* No

#### **Pleasant**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

## **Data Source Information**

Soil Survey Area: El Paso County Area, Colorado

Survey Area Data: Version 23, Aug 29, 2025



## El Paso County Area, Colorado

### 67—Peyton sandy loam, 5 to 9 percent slopes

#### Map Unit Setting

*National map unit symbol:* 369d  
*Landscape:* Uplands  
*Elevation:* 6,800 to 7,600 feet  
*Mean annual air temperature:* 43 to 45 degrees F  
*Frost-free period:* 115 to 125 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

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

#### Description of Peyton

##### Setting

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

##### Typical profile

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

##### Properties and qualities

*Slope:* 5 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 7.3 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* B



*Ecological site:* R049XY216CO - Sandy Divide  
*Hydric soil rating:* No

**Minor Components**

**Other soils**

*Percent of map unit:* 10 percent  
*Hydric soil rating:* No

**Pleasant**

*Percent of map unit:* 5 percent  
*Landform:* Depressions  
*Hydric soil rating:* Yes

**Data Source Information**

Soil Survey Area: El Paso County Area, Colorado  
Survey Area Data: Version 23, Aug 29, 2025

