

# Geotechnical Engineering Report

## Planned Academy Sports + Outdoor Retail Store

3299 US Highway 412  
Siloam Springs, Arkansas  
GTS Project No. 25-15108

December 30, 2025



*Prepared For:*

**MG Siloam, LLC**

3161 Broadway Blvd #100  
Garland, Texas 75043



[www.gtsconsulting.net](http://www.gtsconsulting.net)



December 29, 2025

MG Siloam LLC  
3161 Broadway Blvd #100  
Garland, Texas 75043

Attn: Mr. Steve Harriman

RE: Geotechnical Engineering Report  
Planned Academy Sports + Outdoor Retail Store  
3299 US Highway 412  
Siloam Springs, Arkansas  
GTS Project No. 25-15108

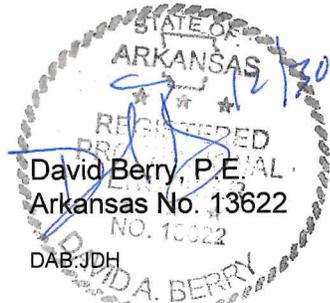
Mr. Harriman:

This report provides the results of the subsurface exploration, laboratory testing, and geotechnical engineering analysis performed for the planned Academy Sports + Outdoor Retail Store which is located at the real address of 3299 Highway 412 (US-412) in Siloam Springs, Arkansas. The approximate project site boundaries are shown in Figure 1 within this report.

We appreciate the opportunity to be of assistance to you on this project. We encourage retaining GTS, Inc. (GTS) to be involved in any pre-bid and pre-construction meetings to allow us to discuss the following findings and recommendations.

Please contact us if further explanation or clarification is required for portions of the report.

Sincerely,



Jeremy Hoffman  
Geotechnical Project Manager

Copies: Addressee (email-steveharriman3@gmail.com)



**TABLE OF CONTENTS**

<b>PROJECT DESCRIPTION and INFORMATION.....</b>	<b>4</b>
Introduction.....	4
Project Site.....	4
Planned Development.....	5
Planned Pavements .....	7
Planned Site Grading .....	7
<b>SUMMARY of SUBSURFACE FINDINGS.....</b>	<b>8</b>
Site Geology.....	8
Surface .....	8
Subsurface Conditions .....	10
Stratum I – Silt-Based Soils .....	10
Stratum II – Low Plasticity Clays.....	10
Stratum III – Sands and Gravels.....	10
Auger Refusal/Hard Drilling Conditions .....	11
Water Measurements.....	12
<b>GEOTECHNICAL ENGINEERING ANALYSIS.....</b>	<b>13</b>
Geotechnical Considerations .....	13
Low-Strength Soils.....	13
Moisture-Sensitive Soils.....	14
Footing Foundation Design Recommendations.....	14
Footing Foundation Construction Recommendations.....	16
General Dimensions.....	16
Allowable Backfill Materials .....	16
Construction Guidelines .....	16
Water Seepage .....	17
Floor Slab-on-Grade Support Recommendations .....	18
Slab-On-Grade Floor Design.....	18
IBC Site Classification.....	19
<b>MASS GRADING RECOMMENDATIONS.....</b>	<b>20</b>
Stripping of Surface Materials.....	20
Dewatering of the Project Site.....	20
Recommended Undercuts .....	20
General Mass Grading.....	21
Weather and Instability Considerations .....	21
Fill Placement.....	22
Re-Use of On-Site Soils as Fill .....	22
Utility Trench Backfill.....	23
Rock Excavation Potential.....	23
Grading and Drainage.....	23
Temporary Earth Slopes and Excavations.....	24
<b>PAVEMENTS.....</b>	<b>25</b>
Pavement Support Recommendations.....	25
Pavement Design Recommendations .....	25
<b>GEOTECHNICAL REPORT REQUIREMENTS and SPECIFICATIONS .....</b>	<b>28</b>



**SUBSURFACE EXPLORATION and PROCEDURES .....30**  
**LABORATORY TESTING and PROCEDURES .....31**  
**GEOTECHNICAL REPORT LIMITATIONS .....31**  
**ENVIRONMENTAL EXCLUSION .....31**

**LIST of TABLES**

---

Table 1: Depths of Hard Drilling Conditions and Auger Refusal at Boring Locations ..... 11  
Table 2: Water Depth Measurements ..... 12  
Table 3: Depths of Low-Shear-Strength Soils at Boring Locations ..... 13  
Table 4: Shallow Foundation Recommendations ..... 15  
Table 5: Suitable Bearing Soils Encountered in the Footprint of the Planned Structure ..... 15  
Table 6: Flexible Pavement Section Recommendations ..... 26  
Table 7: Jointed, Plain Unreinforced Rigid Pavement Section Recommendations ..... 26  
Table 8: Compaction Criteria..... 28  
Table 9: Soil Fill Material Requirements..... 28  
Table 10: Laboratory Test Method Designations ..... 31

**LIST OF APPENDICES**

A

- Boring Location Diagrams
- Boring Logs
- Soil Classification Legend

B

- Results of Laboratory Classification Testing

C

- Site Reconnaissance Package

## **PROJECT DESCRIPTION and INFORMATION**

---

### **Introduction**

Our services were performed in accordance with GTS Proposal No. GTS125201, authorized by Mr. Steve Harriman with MG Siloam, LLC on October 24, 2025. The intent of the authorized scope of services was to explore the subsurface soil/rock conditions at the project site in order to prepare recommendations for the future building's foundations, slabs-on-grade and mass grading as well as provide pavement recommendations for the planned development. To be clear, our scope of services did not include the design of any retaining walls and to our knowledge no retaining walls are planned for the site.

Our scope of services included drilling a total of sixteen (16) borings at the project site. Borings B-1 through B-6, SB1 and SB-2 were located within the footprint of the planned building. Borings B-7, B-8 and SB-3 through SB-6 were located within the footprint of the planned parking and drive areas. Borings SB-7 and SB-8 were drilled in the planned detention pond area. The building borings were drilled to 25 feet below existing grades or auger refusal depth, whichever is least. The parking lot borings were drilled to depths of about 5 to 6 ½ feet below existing grades or auger refusal depth, whichever is least. The detention pond borings were drilled to depths of about 15 feet below existing grades or auger refusal depth, whichever is least

Our currently authorized scope of services will be concluded with the issuance of this Geotechnical Engineering Report.

### **Project Site**

The project site is located at the real address of 3299 Highway 412 (US-412) in Siloam Springs, Arkansas. The project site is recognized by Benton County as Parcel No. 03-04331-001. The project site is approximately 6.6 acres in area. Topographically, the project site is generally flat with approximately 10 feet of topographic relief in 1,000 linear feet, downhill from the southwest corner to the northeast corner of the lot. At the time of the field exploration, the project site is a grass covered field; a surface drainage feature is also present in the central, eastern portion of the project site. An existing access road runs across the southern half of the property in the east-west direction. The general boundaries of the project site are shown in yellow in Figure 1 below.

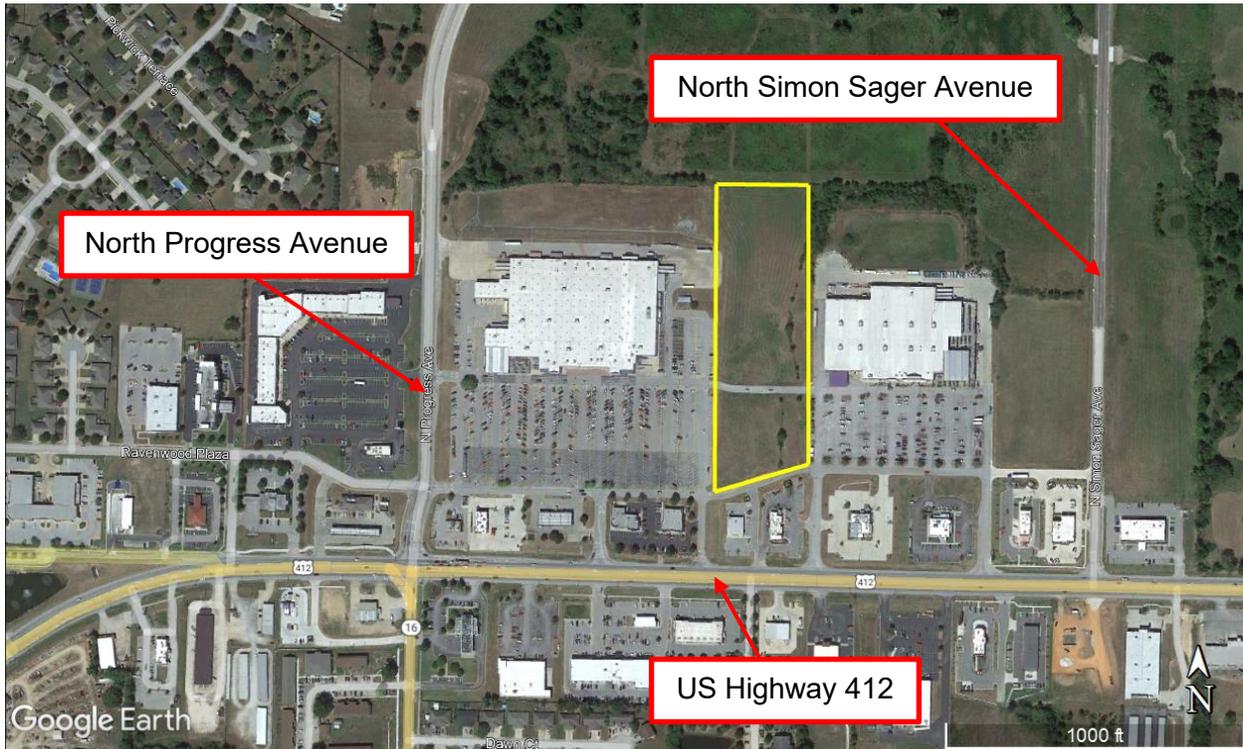


Figure 1 - General Boundaries of the Project Site

## Planned Development

The following documents were provided for our use:

- **3299 US 412 Siloam Springs, AR, Sheet P4, dated July 29, 2025**, This document was prepared by Franz Architects and shows the preliminary site layout.
- **Exhibit 2 – Geotechnical Engineering Requirements dated July 2, 2025**. This document was produced by Academy Sports + Outdoors and details geotechnical requirements for developing a site for the intended use of an Academy Sports + Outdoors retail store. An excerpt of the provided site plan is shown in Figure 2.

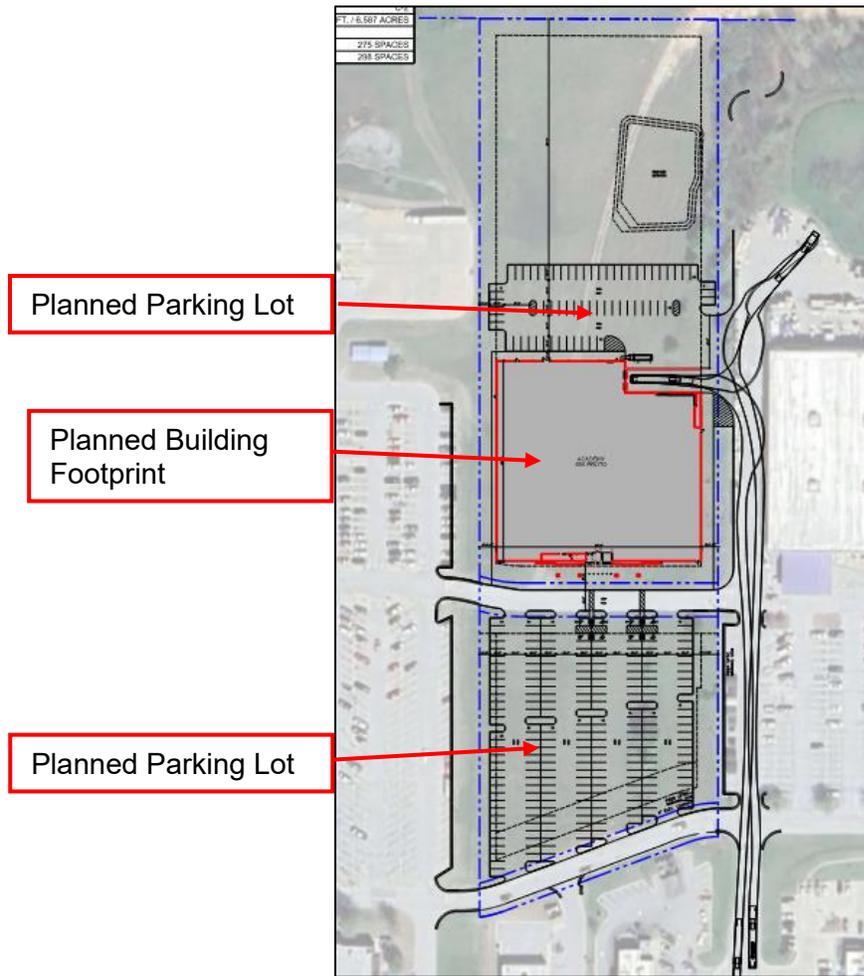


Figure 2: Site Layout Excerpt

Development of the project site consists of one commercial building structure with a footprint area of about 55,000 square feet. We understand that the structure will be one story in height (maximum height below 40 feet) and will consist of tilt wall panels, structural steel framing and concrete slab on grade construction.

Loading information has been provided in **Exhibit 2 – Geotechnical Engineering Requirements**. For the purposes of this report, we have assumed maximum column loads of about 100 kips, isolated concentrated wall loads at panel joints of 165 kips and maximum floor slab loads of about 300 psf for the planned new building structure.



## Planned Pavements

Associated paved parking area (with 220 parking spaces) and drives are planned to the south of the planned new building. Associated paved parking area (with 64 parking spaces) and drives are planned to the north of the planned new building. We anticipate that the new parking area and drives will service predominantly automobile traffic.

Based on guidance provided in the referenced **Exhibit 2 – Geotechnical Engineering Requirements** document, we have designed pavements utilizing Equivalent Single Axle Loadings (ESALs) of 100,000 for standard-duty pavement and 150,000 for heavy-duty pavement, over a 20-year design life. A factor of 1.5 was used to convert flexible ESALs to rigid pavement ESALs. The assumed traffic loading conditions should be evaluated by the design team prior to use of the pavement sections provided in this report.

## Planned Site Grading

GTS was not provided with a grading plan at this time. GTS generally anticipates that maximum cut and fill depths of 2 feet could be required to reach plan finished elevation within areas of planned building and pavements.

If site grading plans differ significantly from our understanding, GTS should be allowed to review the site grading plans and potentially amend our foundation support recommendations for this development.

## SUMMARY of SUBSURFACE FINDINGS

---

### Site Geology

Based on the available geological maps, the project site is located near the geologic units mapped as the Pitkin Limestone, Fayetteville Shale (including the Wedington Sandstone member), and Batesville Sandstone (including the Hindsville Limestone Member) Formations. However, based on the results of our borings, the soils are typical of the geologic unit mapped as the Boone Formation (Mb). The Boone formation is shown approximately 1,200 feet to the north of the project site on the geological maps. The following description of the Boone formation was obtained from the Stratigraphic Summary of Arkansas (Arkansas Geological Commission IC-36, 2004).

*The Boone consists of gray fine to coarse grained fossiliferous limestone interbedded with chert. Some sections may be predominantly limestone or chert. The cherts tend to be dark in color in the lower part of the sequence and light in color in the upper part of the section. The quantity of chert varies considerably both vertically and horizontally. The Boone is well known for dissolutional features such as sinkholes, caves, and enlarged fissures. The thickness of the Boone is 300 to 350 feet in most of northern Arkansas.*

Residual soils resulting from weathering of the Boone Formation typically consist of lean clays, lean to fat clays, and fat clay soils with varying amounts of chert gravel. Deeper soils usually classify as clayey sand/gravel soils due to the increased chert content of the soil with depth. Based on our boring locations, the subsurface conditions at the site are consistent with the Boone Formation.

### Surface

At the time of our field exploration the surface conditions at the project site consisted of grass cover at the performed boring locations. The rootmat associated with the surface organics was measured to be approximately 2 to 3 inches in thickness at the performed boring locations during drilling and sampling.

Photographs that show the surface conditions at the project site at the time of drilling and sampling have been provided on the following page.



## **Subsurface Conditions**

### Stratum I – Silt-Based Soils

Apparent native silt with sand soils were encountered below the surface organics at boring locations B-1, B-4, B-5, B-7 and B-8. These soils extended to depths of about 1 to 2 ½ feet below existing grades, where encountered.

The Stratum I soils had very low to low shear strength during drilling and sampling. A Standard Penetration Test (SPT) N-value of 3 blows per foot (bpf) was recorded in the Stratum I soils at Boring B-8. Due to the limited thickness of the Stratum I soils, no complete SPT were performed entirely within the Stratum I soils at other boring locations.

### Stratum II – Low Plasticity Clays

Lean clay soils with variable silt and sand content were encountered below the surface organics or below the Stratum I soils at all boring locations with the exception of Borings SB-4, SB-5, SB-6 and SB-8. The Stratum II soils extended to depths of about 1 ½ to 8 ½ feet below existing grades where encountered with the exception of Boring SB-7 where the lean clay soils extended to a depth of about 15 feet below existing grades.

The Stratum II soils generally had very low to moderate, yet generally low, shear strength during drilling and sampling. SPT N-values of 0 to 24 bpf were recorded for the Stratum II lean clay soils. An N-value of “zero blows per foot” corresponds to the split-spoon sampler penetrating the sampled soils a distance of 12 inches or greater under the dead weight of the sampling equipment and with no corresponding blows of the 140-pound hammer.

### Stratum III – Sands and Gravels

Sands and gravels with varying amounts of clay and gravel (chert) were encountered below the Stratum II soils at the performed boring locations and below the rootmat at Borings SB-4, SB-5, SB-6 and SB-8. Seams, layers and boulders of hard chert were intermittently encountered within the Stratum III soils at the performed boring locations. The Stratum III soils, where encountered, extended to the terminal depths at the performed boring locations.

The Stratum III soils had moderate to high shear strength during drilling and sampling. SPT N-values of 13 to 57 bpf as well as 50 blows per 0 to 4 inches of penetration were recorded for the Stratum III soils at the performed boring locations.



### Auger Refusal/Hard Drilling Conditions

For the purposes of this report, “hard drilling conditions” are defined as any depth within a boring where a partial N-Value of 30 or more was achieved for any 6-inch increment during SPT sampling or where a complete N-value of 50 bpf or greater was encountered.

Hard drilling conditions were encountered within very dense gravelly Stratum III soils and/or on intermittent hard seams, layers or boulders of chert beginning at depths about 1 to 8 ½ feet below existing grades at the performed boring locations. Auger refusal material was encountered at depths of about 7 to 12 feet below existing grades at 11 of the 16 performed boring locations.

The depths where hard drilling conditions and auger refusal conditions were encountered at our boring locations are shown in Table 1, below.

**Table 1: Depths of Hard Drilling Conditions and Auger Refusal at Boring Locations**

Boring Number	Depths of Hard Drilling Conditions (Feet below Existing Grade)	Depths of Auger Refusal Material (Feet below Existing Grade)
B-1	2 ½	7 ½
B-2	3	7 ½
B-3	8	9 ½
B-4	2	12
B-5	8 ½	9
B-6	5 ½	7
B-7	2 ½	Not Encountered
B-8	5 ½	Not Encountered
SB-1	8 ½	8 ½
SB-2	4	7
SB-3	Not Encountered	Not Encountered
SB-4	2	Not Encountered
SB-5	3 ½	Not Encountered
SB-6	1	Not Encountered
SB-7	Not Encountered	Not Encountered
SB-8	2	5

## Water Measurements

Water observations were made by the drill crew while drilling and immediately after completing the borings. The observations are shown in Table 2, below and on the following page, and at the bottom of each boring log.

**Table 2: Water Depth Measurements**

Boring Number	Water Depth Measurements (feet below existing grades)		Cave-in Depths  (feet below existing grades)
	During Drilling	At Completion of Drilling	
B-1	0	Dry <sup>1</sup>	6
B-2	Dry <sup>1</sup>	5	6
B-3	5	3	5
B-4	3	Dry <sup>1</sup>	7
B-5	4 ½	Dry <sup>1</sup>	n/a
B-6	Dry <sup>1</sup>	Dry <sup>1</sup>	n/a
B-7	2 ½	2 ½	n/a
B-8	1	3	3

<sup>1</sup> Dry boreholes, where noted, may have been due to the relatively fast drilling of a shallow boring.

The boring cave-in depths noted on the boring logs represent a loss of soil shear strength in the sides of the boring. This may be associated with the presence of groundwater and the cave-in depths may correlate to the surface of the groundwater. Cave-in depths ranging from 3 to 7 feet below existing grades were observed at all borings when the borings were checked for groundwater at completion of drilling.

The depths to water are intended as isolated measurements of groundwater levels at the time of drilling. Longer-term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels in these soil types. The installation and periodic measurement of monitoring wells would be required to establish seasonal piezometric surfaces below this project site.

## GEOTECHNICAL ENGINEERING ANALYSIS

---

### Geotechnical Considerations

#### Low-Strength Soils

Low-shear-strength soils (SPT N-values of 6 bpf or less) were encountered to varying depths within the near-surface soils, extending approximately 1 to 2 ½ feet below the ground surface at 8 of the 16 performed boring locations. In addition, low-strength soils were also extended to greater depths of about 4 feet and about 8 ½ feet below the ground surface at Borings B-3 and B-5, respectively. These weak soils consisted of native silt-based (Stratum I) soils and native lean clays (Stratum II soils) in the near-surface portion.

The depths of these low strength soils encountered at our boring locations are shown in Table 3, below. The low strength soils were not encountered at boring locations omitted from Table 3.

**Table 3: Depths of Low-Shear-Strength Soils at Boring Locations**

Boring Number	Depths of Weak Soils (feet below <u>existing</u> grades)	Recorded N-values (blows per foot)
B-1	0 to 1 ½	WOH
B-2	0 to 1 ½	3
B-3	0 to 4	0, 1
B-5	0 to 1; 3 ½ to 8 ½	5, 4
B-6	0 to 1 ½	WOH
B-8	0 to 2 ½	3
SB-1	5 to 6 ½	2
SB-7	0 to 2	4

The very low to low strength of these on-site soils are due, in part, to the relatively high moisture contents encountered within these soils at the time of drilling and sampling. We anticipate unstable soils will likely develop during wet site conditions, during freeze-thaw conditions and when the soils are subjected to repetitive construction traffic.

Supporting foundation loads or placing new fill above these weak soils will result in soil consolidation, which will result in relatively large settlement of the planned building structure. Recommendations are provided in this report to reduce the potential large settlement of the structure, generally through removing these weak on-site soils full-depth from the planned building

footprint, and replacing with new, approved fill material placed and compacted in standard-thickness lifts.

In addition, these weak soils are not suitable for supporting typical loading from floor slabs, pavements, or new fills without ground improvement. Ground improvement recommendations are provided in the Mass Grading Recommendations section of this report.

### Moisture-Sensitive Soils

The silt-based soils and lean clay soils (Stratum I and Stratum II) are susceptible to strength loss with increases in moisture content and/or when exposed to repetitive construction traffic. Ground improvement should be anticipated during wet periods of the year. Therefore, it would be highly advantageous to perform mass grading during an extended period of dry weather. Recommendations for ground improvement if unstable conditions are encountered during mass grading are provided in the Mass Grading Recommendations section of this report.

### Groundwater

We encountered a relatively shallow ground water table during drilling and sampling or immediately after the completion of drilling at several boring locations. Groundwater was encountered beginning at depths of 0 to 5 feet below existing grades during drilling.

The perched water table is anticipated to be encountered within the near-surface silts and lean clay soils, and/or above very dense gravels and hard chert during periods of moderate to high rainfall amounts. Dewatering of excavations and providing positive drainage away from building area should be anticipated to be required if mass grading is performed during wet periods of the year.

### **Footing Foundation Design Recommendations**

The planned structure may be supported on a shallow foundation system. The shallow foundation system should be designed as conventional, open-trench foundations supported on tested and approved, native medium stiff to very stiff lean clay (Stratum II), medium dense to very dense sands and gravels (Stratum III Soils), and/or upon new tested and approved fill materials placed and compacted above stable, on-site soils.

The recommended bearing materials were encountered generally at a depth of about 2 ½ feet below the existing ground surface. However, the bearing soils were not encountered until 6 to 8 ½ feet below existing grades at Borings SB-1, B-3 and B-5 in the center and northeast portion of the building. Foundation trench over-excavations are anticipated to be required to expose the recommended bearing material in the central and eastern portions of the building footprint.



Shallow foundations for the planned building structure may be designed using the information provided in Table 4, on the following page.

**Table 4: Shallow Foundation Recommendations**

Maximum Net Allowable Bearing Pressure (psf)	Bearing Soil Description	Depth to Bearing Soils
1,850 (continuous)	Native, Medium Stiff to Very Stiff Lean Clay (Stratum II Soils), Medium Dense to Very Dense Sands and Gravels (Stratum III Soils) and/or on New, Approved Fill*	Generally Anticipated within 8½ Feet of Existing Grades
2,000 (square, column)		See Table 5, below

\* The recommended bearing soils should be relatively undisturbed and have moderate shear strength. We recommend reverifying in-place dry density and moisture content of new, approved fill immediately below future foundations after excavation of footing trench.

**Table 5: Suitable Bearing Soils Encountered in the Footprint of the Planned Structure**

Boring Number	Depths to Suitable Native Bearing Material	Material Encountered at Recommended Bearing Depths
	(Feet below Existing Grades)	
B-1	2	Lean Clay, with Sand (CL)
B-2	2	Lean Clay, with Sand and Silt (CL)
B-3	5	Sandy Lean Clay (CL)
B-4	1	Sandy Lean Clay (CL)
B-5	8 ½	Sandy Gravel, with Clay (GP)
B-6	2	Sandy Lean Clay, with Gravel (CL)
SB-1	8	Clayey Gravel, with Sand (GC)
SB-2	2	Lean Clay, with Sand (CL)

An allowable passive pressure of 550 psf may be used for footings cast directly against near-vertical sides in tested and approved, stiff to very stiff, lean clay soils, medium dense to very dense sands and gravels soils, and new select fill or for select fill compacted against the vertical footing face. Passive resistance for exterior footings should be neglected in the upper 2 feet of the soil profile unless pavement is constructed directly against the building exterior. We recommend an ultimate coefficient of sliding friction of 0.32 for the interaction between the base of footing and soil bearing material. No safety factors have been applied to these values.

We estimate total long-term and differential settlement of footing foundations, designed and constructed as recommended in this report and per the Mass Grading Recommendations section of this report, should be less than 1 inch and ½ inch in 50 feet, respectively.

## Footing Foundation Construction Recommendations

### General Dimensions

Continuous formed and isolated column foundations should have minimum widths of 18 inches and 30 inches, respectively. A minimum foundation depth of 18 inches below lowest adjoining final grades should be used to protect against frost heave and seasonal moisture variations.

### Allowable Backfill Materials

Compacted select soil fill, compacted aggregate base course, and flowable fill (i.e., “lean concrete”) may be used to backfill foundation overexcavations, where required. Specifications regarding these materials are shown in the Geotechnical Report Requirements and Specifications section of this report.

### Construction Guidelines

Foundation excavations should be cleaned of loose soils, rock, debris, and water. The bottom of all footing foundation excavations should be tested and evaluated by GTS to evaluate the bearing materials prior to placement of new fill, reinforcing bar, and concrete.

We expect that tested and approved, select fill, native, Medium Stiff to Very Stiff Lean Clay (Stratum II Soils) or Medium Dense to Very Dense Sands and Gravels (Stratum III Soils) will be exposed in the majority of the footing foundation excavations. Where weak, unstable or otherwise unsuitable soils are encountered in the bottom of foundation trench excavations, the foundation trenches should also be over excavated until the recommended bearing soils are exposed.

If select soil fill or aggregate base course materials is used to backfill foundation trench over-excavations, the over-excavation should extend at least 8 inches beyond the footing perimeter for every 12 inches of depth below the bottom of footing, per Figure 3 on the following page. Select soil fill or aggregate base course materials should be placed and compacted as recommended in the Geotechnical Report Requirements and Specifications of this report. We recommend the select soil fill or aggregate base course materials, if used to backfill foundation trenches, be field tested for in-place density each lift and again immediately before the placement reinforcing bar and concrete.

If flowable fill is used to backfill foundation trenches or trenches are overpoured full-depth with concrete, the trenches do not need to be widened as shown in Figure 3. The flowable fill should be

placed as soon as possible after foundation trench over-excavations are completed and have been evaluated for bearing suitability. Flowable fill should be field sampled and laboratory tested for strength every day of placement.

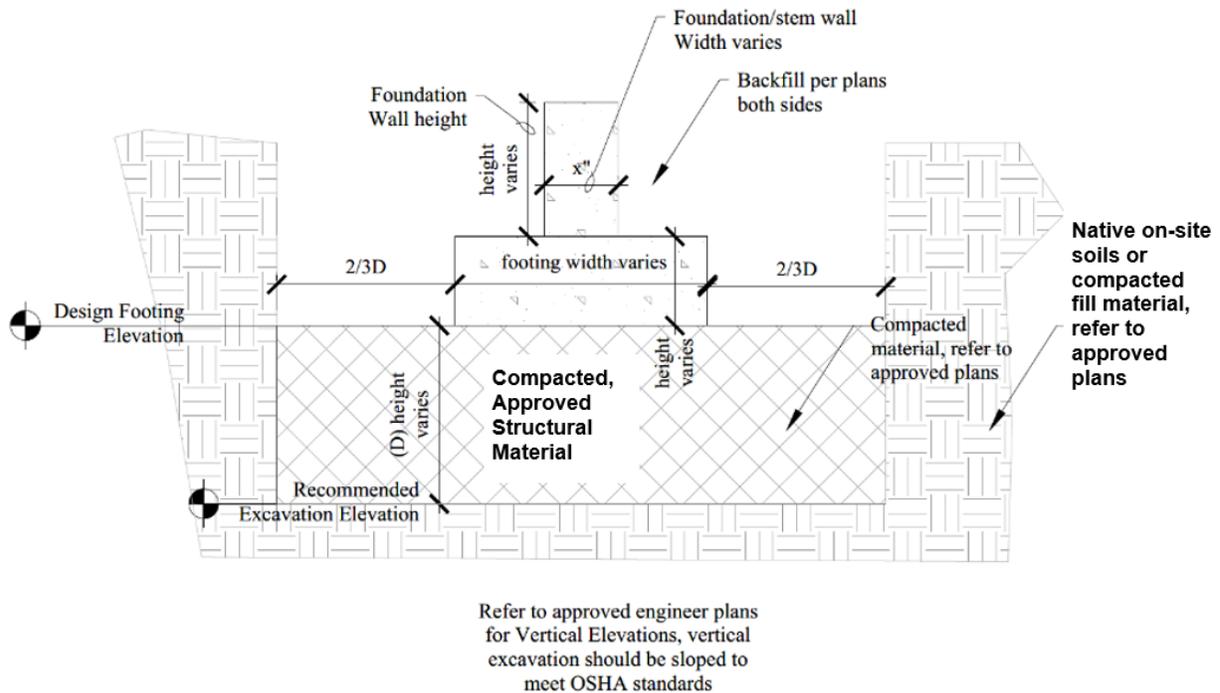


Figure 3: Foundation Trench Backfill Detail for Select Soil or Aggregate Base Course Fill

### Water Seepage

Areas of cut should anticipate water seepage out of the cut slope or where the cut intersects any perched groundwater that may be present in the near-surface soils. Water is anticipated to be perched within the near-surface silts and lean clay soils, and/or above very dense gravels and hard chert during periods of moderate to high rainfall amounts. Based on the soil and rock types encountered at the site, the rate of seepage is anticipated to be high, particularly immediately after rainfall events.

Water seepage should be anticipated to accumulate at the base of cut slopes and during the foundation excavation. Special considerations for dewatering the foundation trenches should be considered, such as the use of a sump pit.

## Floor Slab-on-Grade Support Recommendations

The new floor slab-on-grade should be supported directly on a minimum of 4 inches of Class 7 aggregate base course over 4 inches of drainage gravel over 1 foot of new, approved select fill material placed and compacted above stable on-site soils. Additional fill material is likely to be required to support new floor slab-on-grade if the on-site soils are weak near plan finished subgrade.

Specific recommendations concerning construction of the floor slab-on-grade subgrade, including the potential need for additional select fill to stabilize unstable subgrade soils, are provided in the Mass Grading Recommendations section of this report.

## Slab-On-Grade Floor Design

Based on the anticipated site grading and after removing and replacing any low-strength soils with new select fill within the building footprint, concrete floor slabs constructed as slab-on-grade and supported on 1 foot of tested and approved, new select fill can be designed using a modulus of subgrade reaction (k) value of 300 pounds per square inch, per inch. We recommend that a minimum of 4 inches of free-draining gravel or sand be placed beneath the slab-on-grade to act as a capillary break. This layer is termed a “subbase” layer.

To be effective as a capillary break, the subbase should have a maximum of 5 percent by dry weight passing the No. 200 sieve. The top of the subbase should be compacted using a vibratory plate.

The subbase layer should be topped with an additional 4 inches of ARDOT Class 7 Aggregate Base Course. The topping layer is termed the “base” layer. The base layer should be compacted to a minimum of 95 percent Standard Proctor Value (ASTM D698) at a workable moisture content that allows the density to be achieved. The modulus of subgrade reaction value applies to the top of the base layer.

A vapor barrier having a minimum thickness of 10 mil is recommended immediately below the concrete unless otherwise recommended by the finished flooring manufacturer or other members of the design team.

The general components of a floor slab, are shown in Figure 4, on the following page. The shown reinforcing steel location provides general guidance only. The location and composition of reinforcing steel should be determined by a structural engineer.

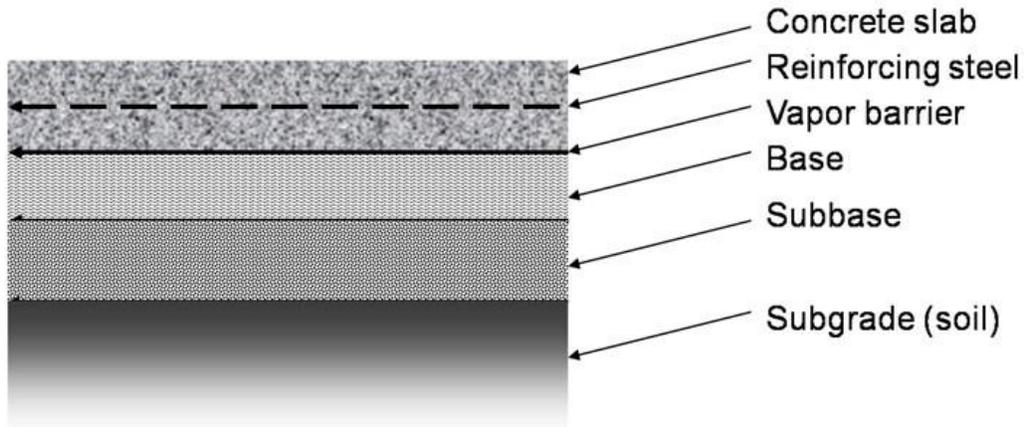


Figure 4: General Floor Slab-on-Grade Section

### IBC Site Classification

Based on the results of the sample borings, the subsurface conditions at this project site are consistent with a Site Class C per the International Building Code (IBC), 2012 Edition.

## **MASS GRADING RECOMMENDATIONS**

---

### **Stripping of Surface Materials**

Mass grading should extend a minimum of 5 feet outside of the building footprint in all directions and a minimum lateral distance of 2 feet behind back of curb.

At a minimum, surface organics should be removed from the planned building and pavement areas. Organic removal depths of ½ foot or less are anticipated, based on the results of the borings. This depth does not include the depth to stump and grub of existing trees, if present at the project site.

### **Dewatering of the Project Site**

Perched groundwater table is anticipated to be present in portions of the project site during moderate to high precipitation periods of the year – especially immediately after rainfall events. The potential perched groundwater table is anticipated to be encountered within the near-surface silts and lean clay soils, and/or above very dense gravels and hard chert during periods of moderate to high rainfall amounts.

Dewatering of the site is likely to be required during foundation construction and/or confined utility trench excavation if the perched groundwater table is present at the time of mass grading and trench excavation. Dewatering can be achieved via the use of sump pits and pumps.

### **Recommended Undercuts**

As previously discussed, low-strength soils were encountered at the performed boring locations and are not suitable for supporting footing foundations, floor slabs, pavements, or new fill material.

After completing cuts for grading, we recommend that any remaining low-strength materials exposed at the site surface be removed and replaced full depth with new, approved fill material. Based on the subsurface conditions encountered at the boring locations, we anticipate undercut depths of up to about 2 feet to 8 ½ feet below existing grades will be required to remove the weak soils full-depth from the planned building footprint and pavement areas, with isolated areas where deeper undercuts are required (specifically, the vicinity of Borings SB-1, B-3 and B-5).

Finally, additional undercuts should be performed, if needed, to allow for a minimum of 1 foot of approved fill material beneath the planned pavements and floor slabs-on-grade.

## General Mass Grading

After removal of the surface organics, completing cuts necessary for grading, further undercuts should be performed, as necessary, to reach a minimum depth of 1 foot below plan finished subgrade elevations in areas of planned new development. The recommended undercuts should be performed regardless of the apparent stability of the removed soils.

The exposed soils should be evaluated for stability by observing overlapping passes with a loaded tandem-axle dump truck (i.e., proof-rolling) weighing at least 25 tons. If the soils are stable, they are suitable to support the placement and compaction of new fill material to reach plan finished grades.

If the exposed soils are unstable during mass grading, ground improvement will be necessary to support new fill and the planned structures. Potential instabilities when on-site soils at the recommended minimum undercut depth are unstable are considered below in the Weather and Instability Considerations report section.

## Weather and Instability Considerations

Soil stability is directly related to the moisture within and below the exposed soils. If the on-site silts and lean clay soils (Stratum I and Stratum II) are moist to wet or have undergone freeze-thaw cycles after mass grading and/or placement and compaction, we anticipate that the near-surface soils will likely be unstable.

If the exposed subgrade soils are unstable but otherwise suitable to remain in-place based on their classification or depth below plan finish grades, they may be scarified and allowed to dry to achieve stability if the construction timeframe and prevailing weather conditions allow. Alternatively, the unstable soils could be undercut and replaced full-depth with new select fill. For budgeting purposes, an average undercut depth of 3 feet below existing grade is anticipated when the on-site soils are wet.

Bridging lifts may be considered – in planned pavement areas only - to stabilize the soils if they remain unstable beginning at a 3 ½-foot undercut depth in areas of planned new improvements. We recommend bridging lift construction be overseen by GTS. If bridging lifts are used, the top 8 inches of the bridging lifts should be compacted to project specifications. The thickness of the bridging lift will depend on site conditions at the time of site grading and should be evaluated and recommended by GTS. GTS recommends that the top of all bridging lifts be a minimum depth of 1 foot below plan finished subgrade elevations.

To be clear, bridging lifts should not be used on the planned building footprint.

Other ground improvement methods could be provided during construction based on the actual site conditions at that time. The appropriate method of improvement, if required, would depend

on factors such as schedule, weather, the size of area to be improved, and the nature of the instability. Performing site grading operations during extended periods of warm, dry weather would help reduce the amount of subgrade stabilization required.

### **Fill Placement**

Lifts of fill material required to reach plan finished subgrade elevation should be composed of tested and approved fill material and placed per the specifications shown in this report. Fill should be placed in near-horizontal lifts beginning in areas requiring the deepest amount of fill. The fill should be benched into the native soils each lift. Fill should not be placed on frozen, saturated, or unstable soils.

We recommend that new fill material placed and compacted within the top 1 foot of finished subgrade elevation in building and pavement subgrade consist of select fill material. The requirements to meet for select fill material, aggregate base course material, and flowable fill material are provided in the Geotechnical Report Requirements and Specifications section of this report.

### **Re-Use of On-Site Soils as Fill**

The on-site silt-based (Stratum I) soils should not be reused as fill in areas of planned new development. These soils may be used in landscaping areas, at the discretion of the design team.

Portions of the on-site lean clay soils (portion of Stratum II) are anticipated to be suitable for reuse as general fill material. However, it should be noted that the lean clay soils that are suitable for reuse as a general fill material are anticipated to require extensive drying before reuse as fill.

Portions of the on-site sands and gravels (Stratum III) soils may be reused as select fill materials provided that the soil has a high fraction of sand and gravel. All rock fragments must be crushed into fragments less than 3 inches in any dimension before reuse as fill material or during compaction breakdown. Seams, layers and boulders of hard chert were intermittently encountered within the Stratum III soils at the performed boring locations

Soil classifications discussed in this report are based on approximately 2-inch diameter samples obtained during our field sampling. This type of sampling follows industry standards; however, this type of sampling can under- or over-estimate the amount of gravel within a soil formation. Therefore, larger, bulk samples of the material should be obtained in the field during mass grading to confirm the apparent classification of these soils prior to reuse.

Larger bulk samples of the on-site soils proposed for use as fill by the contractor should be sampled by GTS during mass grading and laboratory tested to confirm the apparent classification

of these soils, prior to reuse. Any on-site fill and native soils containing debris or deleterious materials should not be re-used as select fill.

Imported fill should also be tested and approved prior to use as fill on this site. Imported fill containing rock will need to be screened or crushed into pieces no greater than 3 inches in any dimension prior to reuse.

### **Utility Trench Backfill**

All trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction. Utility trenches are a common source of water infiltration and migration. If utility trenches are backfilled with relatively clean granular material, they should be capped with at least 18 inches of cohesive fill to reduce the infiltration and conveyance of surface water through the trench backfill.

### **Rock Excavation Potential**

Rock excavation means and methods are anticipated to be intermittently required to penetrate dense gravelly soils or intermittent hard seams, layers and/or boulders of chert at depths of about 1 to 8 ½ feet below the existing ground surface. The depths where rock excavation techniques are anticipated to be required generally correspond with the depths of hard drilling conditions provided in Table 1 on Page 11 of this report.

In general, track hoes and dozers with rock excavation attachments are expected to be required below the depths where we encountered hard drilling. The use of hydraulic or pneumatic hammers, rock breakers, rock saws and controlled blasting could be required near and below the depths where we encountered auger refusal. Greater rock excavation effort is expected in limited access excavations, such as for foundations and utility trenches.

### **Grading and Drainage**

During construction, grades should be developed to direct surface water flow away from or around the site. Exposed subgrades should be sloped to provide positive drainage so that saturation of the subgrade is avoided. Surface water should not be permitted to accumulate on the site to reduce the potential for strength loss of the subgrade soils.

Final grades should be sloped away from the building and pavements on all sides to promote effective drainage and prevent water from ponding. Downspouts should discharge water a minimum of 10 feet beyond the footprint of the building. This can be accomplished by using splash-blocks and downspout extensions. Also, the interface between the building and pavements or sidewalks should be effectively sealed to prevent water from infiltrating into the floor slab-on-grade subgrade.

## Temporary Earth Slopes and Excavations

Depending on final grading, temporary earth slopes will likely be constructed during development of the project site. The recommended maximum temporary slopes for the native Stratum I and Stratum II soils are 3H:1V (Horizontal:Vertical). Alternatively, local practices allow for benched excavations (4 feet vertically followed by 4 feet horizontally) with an effective slope of 1H:1V.

The contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavation as required to maintain stability of the excavation sides and bottom. All excavations should comply with applicable local, state, and federal safety regulations, including the current Occupational Safety and Health Administration (OSHA) Excavation and Trench Safety Standards.

## PAVEMENTS

---

### Pavement Support Recommendations

New pavements should be supported directly on a minimum of 1 foot of new, approved select fill material placed and compacted above stable on-site soils. Additional fill material is likely to be required to support new pavements if the on-site soils are weak and unstable.

We recommend the new fill material placed within the top 1 foot of pavement subgrade have a laboratory California Bearing Ratio (CBR) value of 8 or greater. Other materials may be considered for directly supporting future pavements, but the use of other materials may warrant thicker pavement sections than those recommended in this report. Contact GTS if other pavement subgrade material is desired for consideration for supporting these new roadways, and GTS can provide alternative recommended pavement sections upon request.

Specific recommendations concerning construction of the pavement subgrade, including the potential need for additional select fill to stabilize unstable subgrade soils, are provided in the Mass Grading Recommendations section of this report.

### Pavement Design Recommendations

Pavement loading design guidance was obtained from the client-provided *Exhibit 2 Geotechnical Engineering Requirements* document. The pavement sections provided in this report are based on the provided Equivalent Single Axle Loading (ESAL) of 100,000 for standard-duty pavement and 150,000 for heavy-duty pavement. A factor of 1.5 was used to convert flexible ESALs to rigid pavement ESALs. These values should be evaluated by the design team for appropriateness for this project site and intended pavement use.

A design modulus of subgrade reaction (k) of 125 pounds per square inch, per inch, was used for the design of the rigid pavements. A design California Bearing Ratio (CBR) of 5 was used for the design of flexible pavements. The pavement design recommendations assume rapid drainage away from the pavements and will be provided during and after construction.

For rigid pavements, the ACI publication titled “Guide for Design and Construction of Concrete Parking Lots”, ACI 330R shall be used to design jointing.

The flexible and rigid pavement sections shown in Tables 6 and 7 on the following page are recommended. Other pavement materials and mix design alternatives could be discussed upon request.



**Table 6: Flexible Pavement Section Recommendations**

Flexible Pavement Section:	Asphalt Surface Course	Base Course (Class 7)	Design Traffic
Standard Duty	3"	8"	car and passenger truck
Heavy-Duty	3"	9"	drive lanes for passenger cars and light trucks and fire lanes
<i>Specification<sup>1</sup></i>	<i>Section 407-1 PG 64-22</i>	<i>Section 303</i>	

<sup>1</sup> Standard Specification for Highway Construction, Arkansas Department of Transportation, Edition of 2014.

**Table 7: Jointed, Plain Unreinforced Rigid Pavement Section Recommendations**

Rigid Pavement Section Alternative:	4,000 psi Portland Cement Concrete Pavement	Base Course (Class 7)	Design Traffic
Standard-Duty	6.5"	4"	car and passenger truck
Heavy-Duty	7"	4"	light semi-truck traffic and dumpster areas
<i>Specification</i>	<i>Section 501<sup>1</sup></i>	<i>Section 303<sup>1</sup></i>	

<sup>1</sup> Standard Specification for Highway Construction, Arkansas Department of Transportation, Edition of 2014.

The pavement design for the new roadways associated with this development were calculated using the AASHTO Guide for Design of Pavement Structures, 1993 edition. The recommended asphalt pavement section is typical of local construction practices for similar projects over the past 10 years. It should be noted that there could be some decreased performance and life span for the new asphalt pavement if actual traffic loading is higher than anticipated and particularly if there is heavy truck traffic. Arkansas references most asphalt specifications on the 1993 AASHTO guide which is largely based on highway traffic, which is why it was used in this design.

Several national asphalt associations and states have developed alternate design guides for asphalt parking lots, several of which are guided by the increased stresses placed on a parking lot pavement due to slower traffic speeds, increased turning traffic and long durations of static loads. The use of several of these alternate methods will provide a thicker pavement section for



the same design traffic and pavement subgrade, which would increase the life expectancy of the pavement. It should be noted that several of these design methods will require a minimum of two layers of asphalt pavement (surface and binder/base courses) for both structural support and long-term rideability. The minimum pavement sections required to ensure that proper placement and compaction is achieved during construction often lead to parking lots that can support much more traffic than the design traffic, particularly for lightly loaded parking lots. If requested, GTS can provide a design based on these alternate methods.

## GEOTECHNICAL REPORT REQUIREMENTS and SPECIFICATIONS

Unless otherwise stated in this report, the recommendations contained in this report are based on the compaction specifications and material types noted in Table 8, Table 9, and the following paragraphs.

**Table 8: Compaction Criteria**

Type of Material	Moisture-Density Specification	Minimum Dry Density (percentage of Proctor)	Range from Optimum Moisture Content (%)
Soil Fill Material – Building Footprint Area	ASTM D698 (Standard Proctor)	98	-2 to +2
Soil Fill Material – Outside of Building Footprint Area	ASTM D698 (Standard Proctor)	95	-2 to +2
ARDOT Class 7 Aggregate Base Course	ASTM D1557 (Modified Proctor)	95	Adequate to Achieve Compaction
Flowable Fill Material	ARDOT Section 206	Not applicable	

**Table 9: Soil Fill Material Requirements**

Type of Soil Fill	Location/Use	Maximum LL	Maximum PI	USCS Classifications
Select	All Areas	40 <sup>A</sup>	18 <sup>A</sup>	GW, GM, GC, GP, GP-GC, SW, SP, SC, Chert
General	Areas below top 1 foot of Building and Pavement Subgrade <u>May not</u> be used as bridging lift material <u>May not</u> be used as foundation trench backfill material	45 <sup>B</sup>	20 <sup>B</sup>	CL, SC, SM, SP, SW, SP-SC, GC, GM, GP, GW, GP-GC, Chert

<sup>A</sup> Plasticity requirements may be waived if the fill has a minimum of 65% retained on the No. 200 sieve.

<sup>B</sup> Plasticity requirements may be waived if the fill has a minimum of 50% retained on the No. 200 sieve.

Fill material should have a maximum nominal aggregate size of 3 inches or less after placement and compaction. If there are questions regarding the effectiveness of compaction equipment

breaking down the material, a test pad should be constructed using the rock fill material and observed by GTS during compaction.

Fill proposed for use in the top 1 foot of pavement subgrade should have a laboratory CBR value of at least 8.

Except for GTS-approved bridging lifts, fill needed for site grading should be placed in loose lifts not exceeding 9 inches in thickness (compacted lift thickness of approximately 6 to 7 inches). We recommend the fill be tested for density every lift during site grading, with a minimum of one test every 2,500 square feet of building area and every 10,000 square feet of pavement area.

Where select soil fill or base course material is used to backfill foundation trench over-excavations up to plan bottom of foundation elevations, the fill should be tested each lift, at each column location, and every 25 linear feet of continuous foundation trench. Additionally, we recommend fill exposed at plan bottom of foundation elevations be tested for in-place density immediately before the placement of reinforcing bar and concrete.

Flowable fill, if used to backfill foundation trench over-excavations (where appropriate), should have a minimum compressive strength of 400 psi and be tested for compressive strength each day of placement.

Only select fill material approved by GTS may be used as bridging lift material.

The recommended moisture content and compaction of the fill should be maintained until fills are completed and floor slabs and pavements are constructed.

Design and construction plans should provide for rapid, positive drainage away from the building and pavement areas both during construction and at completion of the project, including any planned irrigation lines.

## **SUBSURFACE EXPLORATION and PROCEDURES**

---

The subsurface exploration consisted of evaluating and sampling at sixteen (16) sample boring locations. Borings B-1 through B-6, SB1 and SB-2 were located within the footprint of the planned building. Borings B-7, B-8 and SB-3 through SB-6 were located within the footprint of the planned parking and drive areas. Borings SB-7 and SB-8 were drilled in the planned detention pond area. The building borings were drilled to 25 feet below existing grades or auger refusal depth, whichever was least. The parking lot borings were drilled to depths of about 5 to 6 ½ feet below existing grades or auger refusal depth, whichever was least. The detention pond borings were drilled to depths of about 15 feet below existing grades or auger refusal depth, whichever was least.

The boring locations were established in the field by GTS using a recreation-grade hand-held GPS unit. The approximate borings are shown on the attached Boring Location Diagrams in Appendix A. The locations of the borings should be considered accurate only to the degree implied by the methods used to define them. The results of the borings are provided in Appendix A of this report.

The borings were drilled with a track-mounted 7720DT drill rig. Disturbed samples and estimates of the in-situ shear strength of the soil and weathered rock were obtained using an automatic-hammer-driven split-barrel sampler in general accordance with the Standard Penetration Test at the boring locations.

An automatic SPT-hammer was used to advance the split-barrel sampler in the boreholes. A significantly greater efficiency is achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. This higher efficiency has an appreciable effect on the SPT-N value. The effect of the automatic hammer's efficiency has been considered in the interpretation and analysis of the subsurface information for this report.

The soil samples obtained in the field were sealed to reduce moisture loss and taken to the GTS soil laboratory for further examination, testing, and classification. The results of laboratory tests on select samples are shown on the boring logs and are attached to this report.

Field logs were prepared during the drilling and sampling of the borings. These logs report sampling methods, sampling intervals, soil, and groundwater conditions, and notes regarding soil, and drilling conditions observed between sample depths. The final boring logs, included in this report, have been prepared based on the field logs and have been modified, where appropriate, based on the results of the laboratory observation.

## LABORATORY TESTING and PROCEDURES

---

The soil samples were examined in the laboratory by an experienced geotechnical engineer and classified based on the soil's texture and plasticity, in accordance with the Unified Soil Classification System. The estimated Unified Soil Classification System group symbols are shown on the boring logs.

Hand penetrometer tests were performed on select intact cohesive samples. Hand penetrometer test values are shown on the boring logs as filled squares.

The laboratory testing was performed by GTS in general accordance with the American Society for Testing and Materials (ASTM) test designations shown in the table below:

**Table 10: Laboratory Test Method Designations**

Laboratory Test	Test Designation	Method (if applicable)
Moisture Content of Soil and Rock	ASTM D 2216-10	Method A
Visual Classification of Soil Types	ASTM D 2488	
USCS Classification	ASTM D 2487	

## GEOTECHNICAL REPORT LIMITATIONS

---

The recommendations contained in this report are based on our interpretation of subsurface conditions encountered at the discrete boring locations. Variations between the subsurface conditions anticipated in this report and actual project site conditions may occur away from the boring locations.

If significant differences between the findings of the borings and site conditions are observed, GTS should be contacted to assess the variation and, if necessary, reevaluate the recommendations contained in this report.

## ENVIRONMENTAL EXCLUSION

---

A Geotechnical Engineering Report assesses the engineering properties of soil. No environmental assessment of a project site is performed during a geotechnical exploration. If the owner is concerned about the potential for environmental hazards at the project site, additional studies should be performed by GTS.



## APPENDIX A

Boring Location Diagram

Boring Logs

Soil Classification Legend



**Boring Location Diagram**

# LOG OF BORING NO. SB-1

Academy Supplemental Evaluation  
 North Progress Avenue  
 Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 25-15108

Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								LAB. COHESION, TSF ▲				
					Surface Description=Grass Cover Rootmat = 3 inches			0.4	0.8	1.2	1.6	
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0												
			1	18	LEAN CLAY, with sand stiff, brown and tan, with chert fragments, with rootlets	CL						11
2.5			2	17	- very stiff below about 2½ feet							28
			3	15	CLAYEY GRAVEL, with sand loose to very loose, brown and red, with broken chert fragments							7
5			4	14		GC						2
7.5			5	0	- very dense, with chert seams below about 8½ feet							50/0"
10					AUGER REFUSAL AT ABOUT 8½ FEET							
12.5												
15												
17.5												

COMPLETION DEPTH: 8.58 ft.

DEPTH TO WATER: DURING DRILLING: Dry

DATE: 11/28/25

AT COMPLETION: Dry

RIG: Geoprobe 7822DT, Track-Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfill



# LOG OF BORING NO.SB-2

Academy Supplemental Evaluation  
 North Progress Avenue  
 Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 25-15108

Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								LAB. COHESION, TSF ▲				
					Surface Description=Grass Cover Rootmat = 3 inches			0.4	0.8	1.2	1.6	
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0			1	18	LEAN CLAY, with sand stiff, brown and red, trace chert fragments, with rootlets							9
2.5			2	16	hard to medium stiff lean clays below 2 1/2'	CL						32
			3	14								7, 50/2"
5			4	9	CLAYEY GRAVEL very dense to dense, brown and red, trace sand	GC						34, 50/2"
7.5			5	0	AUGER REFUSAL AT ABOUT 7 FEET							50/0"
10												
12.5												
15												
17.5												

COMPLETION DEPTH: 7.08 ft.

DEPTH TO WATER: DURING DRILLING: Dry

DATE: 11/28/25

AT COMPLETION: Dry

RIG: Geoprobe 7822DT, Track-Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfill



# LOG OF BORING NO. SB-3

Academy Supplemental Evaluation  
 North Progress Avenue  
 Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 25-15108

Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT	
								LAB. COHESION, TSF ▲					
					Surface Description=Grass Cover Rootmat = 3 inches			0.4	0.8	1.2	1.6		
								WATER CONTENT, % ●					
								PL	LL				
								20	40	60	80		
0													
			1	10	LEAN CLAY, with sand medium stiff to very stiff, red, tan and brown, with trace chert fragments and rootlets	CL						5	
2.5			2	10									17
			3	17									22
5					BOTTOM OF BORING AT ABOUT 5 FEET								
7.5													
10													
12.5													
15													
17.5													

COMPLETION DEPTH: 5 ft.

DEPTH TO WATER: DURING DRILLING: Dry

DATE: 11/28/25

AT COMPLETION: Dry

RIG: Geoprobe 7822DT, Track-Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfill



# LOG OF BORING NO.SB-4

Academy Supplemental Evaluation  
 North Progress Avenue  
 Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 25-15108

Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								LAB. COHESION, TSF ▲				
					Surface Description=Grass Cover Rootmat = 3 inches			0.4	0.8	1.2	1.6	
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0			1	8	<u>CLAYEY SAND</u> very stiff, brown, with broken chert fragments, with rootlet	SC						21
2.5			2	18	<u>CLAYEY GRAVEL</u> very dense to dense, brown	GC						41 50/1"
			3	0	BOTTOM OF BORING AT ABOUT 3½ FEET							50/0"
5												
7.5												
10												
12.5												
15												
17.5												

COMPLETION DEPTH: 3.58 ft.

DEPTH TO WATER: DURING DRILLING: Dry

DATE: 11/28/25

AT COMPLETION: Dry

RIG: Geoprobe 7822DT, Track-Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfill



# LOG OF BORING NO. SB-5

Academy Supplemental Evaluation  
 North Progress Avenue  
 Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 25-15108 Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								LAB. COHESION, TSF ▲				
					Surface Description=Grass Cover Rootmat = 3 inches			0.4	0.8	1.2	1.6	
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0												
			1	18	<u>LEAN CLAY</u> , with gravel medium stiff to hard, brown and tan, with chert fragments	CL						7
2.5			2	14								38
			3	14	<u>CLAYEY GRAVEL</u> , with sand very dense to dense, brown and tan, with chert seams	GC						48 50/2"
5					BOTTOM OF BORING AT ABOUT 4½ FEET							
7.5												
10												
12.5												
15												
17.5												

COMPLETION DEPTH: 4.67 ft.

DEPTH TO WATER: DURING DRILLING: Dry

DATE: 11/28/25

AT COMPLETION: Dry

RIG: Geoprobe 7822DT, Track-Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfill



# LOG OF BORING NO.SB-6

Academy Supplemental Evaluation  
 North Progress Avenue  
 Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 25-15108

Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT		
								LAB. COHESION, TSF ▲						
					Surface Description= Grass Cover Rootmat = 3 inches			0.4	0.8	1.2	1.6			
								WATER CONTENT, % ●						
								PL	LL					
								20	40	60	80			
0		1	18		<b>CLAYEY GRAVEL</b> very dense, brown and red, with sand seams, with broken chert fragments	GC						79		
			2	3										50/3"
2.5			3	0										
					<b>BOTTOM OF BORING AT ABOUT 3½ FEET</b>									
5														
7.5														
10														
12.5														
15														
17.5														

COMPLETION DEPTH: 3.58 ft.

DEPTH TO WATER: DURING DRILLING: Dry

DATE: 11/28/25

AT COMPLETION: Dry

RIG: Geoprobe 7822DT, Track-Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfill



# LOG OF BORING NO.SB-7

Academy Supplemental Evaluation  
 North Progress Avenue  
 Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 25-15108

Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT	
								LAB. COHESION, TSF ▲					
					Surface Description=Grass Cover Rootmat = 3 inches			0.4	0.8	1.2	1.6		
								WATER CONTENT, % ●					
								PL	LL				
								20	40	60	80		
0					<u>LEAN CLAY</u> , with sand soft, brown, trace rootlets								
			1	16		CL							4
2.5			2	18									12
			3	18	<u>LEAN CLAY</u> very stiff, red and tan, trace broken chert fragments								17
5			4	18		CL							18
7.5													
			5	19	<u>LEAN CLAY</u> , with sand very stiff, dark grey, brown and tan, trace chert fragments								19
10													
12.5			6	18		CL							19
15					BOTTOM OF BORING AT ABOUT 15 FEET								
17.5													

COMPLETION DEPTH: 15 ft.

DEPTH TO WATER: DURING DRILLING: Dry

DATE: 11/28/25

AT COMPLETION: Dry

RIG: Geoprobe 7822DT, Track-Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfill



# LOG OF BORING NO.SB-8

Academy Supplemental Evaluation  
 North Progress Avenue  
 Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 25-15108

Location: Shown on attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT	
								LAB. COHESION, TSF ▲					
					Surface Description=Grass Cover Rootmat = 3 inches			0.4	0.8	1.2	1.6		
								WATER CONTENT, % ●					
								PL	LL				
								20	40	60	80		
0			1	18	<b>CLAYEY GRAVEL</b> dense to very dense, red, tan and brown, with broken chert fragments, with rootlets	GC						43	
			2	5									50/5"
2.5			3	8									50/2"
			4	0									50/0"
5					AUGER REFUSAL AT ABOUT 5 FEET								
7.5													
10													
12.5													
15													
17.5													

COMPLETION DEPTH: 5.08 ft.

DEPTH TO WATER: DURING DRILLING: Dry

DATE: 11/28/25

AT COMPLETION: Dry

RIG: Geoprobe 7822DT, Track-Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfill



# LOG OF BORING NO.B-1

Planned Retail Development  
Highway 412, Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 22-15050 Location: Shown On Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								LAB. COHESION, TSF ▲				
					Surface Description = Grass Cover Root Mat - 2 inches			0.4	0.8	1.2	1.6	
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0					<u>SILT</u> , with clay very loose, dark gray and brown, with rootlets, moist	ML						
			1	18	<u>LEAN CLAY</u> , with sand medium stiff, orange and brown, with organics	CL						5
2.5			2	9	<u>SANDY GRAVEL</u> , with clay very dense, brown, orange and gray, with chert fragments	GP						50/3"
			3	9	<u>SANDY GRAVEL</u> very dense, orange and gray, with chert fragments							50/3"
5			4	2		GP						50/2"
			5	10	- cave-in at 6 feet upon completion of drilling							50/4"
7.5					AUGER REFUSAL AT 7½ FEET							
10												
12.5												
15												
17.5												

COMPLETION DEPTH: 7.5 ft.

DATE: 5/3/2022

RIG: 7720DT Geoprobe, Track Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 0 ft

AT COMPLETION: Dry

AT 24 HOURS: Backfilled



# LOG OF BORING NO.B-2

Planned Retail Development  
Highway 412, Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 22-15050 Location: Shown On Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								0.4	0.8	1.2	1.6	
								LAB. COHESION, TSF ▲				
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0					Surface Description = Grass Cover Root Mat - 2 inches							
			1	18	LEAN CLAY, with sand and silt loose, brown and dark gray, with rootlets and organics	CL						7
2.5			2	9	SANDY GRAVEL very dense, orange and gray, with chert fragments							38/6" 50/1"
			3	2								50/2"
5			4	3		GP						50/3"
					- cave-in at 6 feet upon completion of drilling							
7.5			5	1	AUGER REFUSAL AT 7½ FEET							50/1"
10												
12.5												
15												
17.5												

COMPLETION DEPTH: 7.5 ft.

DATE: 5/3/2022

RIG: 7720DT Geoprobe, Track Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry

AT COMPLETION: 5 ft

AT 24 HOURS: Backfilled

# LOG OF BORING NO.B-3

Planned Retail Development  
Highway 412, Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 22-15050 Location: Shown On Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF				BLOWS PER FT
								0.4	0.8	1.2	1.6	
Surface Description = Grass Cover Root Mat - 3 inches												
0					<u>LEAN CLAY</u> , with sand and silt very soft, brown and gray, wet	CL						W.O.H.
			1	18								
2.5			2	0								1
			3	13	<u>SANDY LEAN CLAY</u> stiff, gray, light brown, orange and red, with chert fragments	CL					3.25	13
5			4	15	- cave-in at 5 feet upon completion of drilling							4.0
7.5												
			5	7	<u>SANDY GRAVEL</u> very dense, red, orange and gray, with chert fragments	GC						50/1"
			6	4								
10					AUGER REFUSAL AT 9½ FEET							
12.5												
15												
17.5												

COMPLETION DEPTH: 9.5 ft.

DATE: 5/4/2022

RIG: 7720DT Geoprobe, Track Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 5 ft

AT COMPLETION: 3 ft

AT 24 HOURS: Backfilled

# LOG OF BORING NO.B-4

Planned Retail Development  
Highway 412, Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 22-15050

Location: Shown On Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								0.4	0.8	1.2	1.6	
								LAB. COHESION, TSF ▲				
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0					Surface Description = Grass Cover Root Mat - 3 inches							
					<u>SILT</u> , with sand loose, dark brown, with rootlets, moist	ML						
			1	18	<u>SANDY LEAN CLAY</u> very stiff, brown and orange, with trace chert fragments, moist	CL						19
2.5			2	1	<u>SANDY GRAVEL</u> very dense, gray and orange, with chert fragments							50/3"
			3	2								50/2"
5			4	3		GP						50/3"
7.5					- cave-in at 7 feet upon completion of drilling							
10			5	18	<u>CLAYEY GRAVEL</u> very dense, red, orange and gray, with chert fragments and fat clay pockets	GC						57
12.5			6	1	<u>SANDY GRAVEL</u> very dense, gray and orange, with chert fragment	GP						50/1"
					AUGER REFUSAL AT 12 FEET							
15												
17.5												

COMPLETION DEPTH: 12 ft.

DEPTH TO WATER: DURING DRILLING: 3 ft

DATE: 5/3/2022

AT COMPLETION: Dry

RIG: 7720DT Geoprobe, Track Mounted, Auto Hammer Assisted

AT 24 HOURS: Backfilled

# LOG OF BORING NO.B-5

Planned Retail Development  
Highway 412, Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 22-15050 Location: Shown On Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF				BLOWS PER FT
								0.4	0.8	1.2	1.6	
Surface Description = Grass Cover Root Mat - 3 inches												
0					<u>SILT</u> , with clay loose, dark brown, with rootlets	ML						
			1	18	<u>SANDY LEAN CLAY</u> , with silt medium stiff, brown, orange and tan - stiff below 2 feet						4.0	7
2.5			2	13	- medium stiff below 3½ feet						4.0	9
			3	18		CL					2.5	5
5			4	12	- soft and wet, with trace chert fragments below 5 feet							4
7.5												
			5	2	<u>SANDY GRAVEL</u> , with clay	GP						50/2"
			6	1	very dense, orange, gray and red, with chert fragments							50/1"
10					AUGER REFUSAL AT 9 FEET							
12.5												
15												
17.5												

COMPLETION DEPTH: 9 ft.

DATE: 5/3/2022

RIG: 7720DT Geoprobe, Track Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 4.5 ft

AT COMPLETION: Dry

AT 24 HOURS: Backfilled

# LOG OF BORING NO.B-6

Planned Retail Development  
Highway 412, Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 22-15050 Location: Shown On Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								0.4	0.8	1.2	1.6	
								LAB. COHESION, TSF ▲				
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0					Surface Description = Grass Cover Root Mat - 3 inches							
			1	18	LEAN CLAY, with silt medium stiff, dark brown and orange	CL						6
2.5			2	14	SANDY LEAN CLAY, with gravel very stiff, gray, brown and orange, with chert fragments	CL						16
			3	14								24
5			4	11	SANDY GRAVEL very dense, gray and orange, with chert fragment	GP						50/5"
7.5			5	1	AUGER REFUSAL AT 7 FEET							50/1"
10												
12.5												
15												
17.5												

COMPLETION DEPTH: 7 ft.  
DATE: 5/4/2022  
RIG: 7720DT Geoprobe, Track Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING:  
AT COMPLETION:  
AT 24 HOURS:



# LOG OF BORING NO.B-7

Planned Retail Development  
Highway 412, Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 22-15050 Location: Shown On Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								0.4	0.8	1.2	1.6	
								LAB. COHESION, TSF ▲				
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0					Surface Description = Grass Cover Root Mat - 2 inches							
			1	18	<u>SILT</u> loose, dark brown, with rootlets	ML						
			2	5	<u>LEAN CLAY</u> , with silt and sand stiff, orange, tan and dark brown, with rootlets and trace chert fragments	CL						11
2.5			2	3	<u>SANDY GRAVEL</u> very dense, gray and orange, with chert fragments	GP						50/3"
5			4	5								50/2"
7.5					BOTTOM OF BORING AT 6½ FEET							
10												
12.5												
15												
17.5												

COMPLETION DEPTH: 6.5 ft.

DATE: 5/3/2022

RIG: 7720DT Geoprobe, Track Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 2.5 ft

AT COMPLETION: 2.5 ft

AT 24 HOURS: Backfilled

# LOG OF BORING NO.B-8

Planned Retail Development  
 Highway 412, Siloam Springs, Arkansas



Fayetteville, AR

Project No.: 22-15050 Location: Shown On Attached Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■				BLOWS PER FT
								0.4	0.8	1.2	1.6	
								LAB. COHESION, TSF ▲				
								WATER CONTENT, % ●				
								PL	LL			
								20	40	60	80	
0					Surface Description = Grass Cover Root Mat - 3 inches							
			1	18	SANDY SILT, with clay very loose, dark brown and gray, with trace chert fragments, moist	ML						3
2.5			2	18	SANDY LEAN CLAY, with gravel medium stiff, orange, gray and brown, with chert fragments - cave-in at 3½ feet upon completion of drilling	CL						8
			3	18	CLAYEY SAND, with gravel dense, red, orange and gray, with chert fragments	SC						32
5			4	11	SANDY GRAVEL very dense, gray and orange, with chert fragments	GP						50/5"
					BOTTOM OF BORING AT 6½ FEET							
7.5												
10												
12.5												
15												
17.5												

COMPLETION DEPTH: 6.5 ft.

DATE: 5/3/2022

RIG: 7720DT Geoprobe, Track Mounted, Auto Hammer Assisted

DEPTH TO WATER: DURING DRILLING: 1 ft

AT COMPLETION: 3 ft

AT 24 HOURS: Backfilled

# SOIL CLASSIFICATION LEGEND

APPARENT CONSISTENCY OF COHESIVE SOILS (PECK, HANSON & THORNBURN 1974, AASHTO 1988)				
Descriptor	SPT N <sub>60</sub> (blows/foot)*	Pocket Penetrometer, Qp (tsf)	Torvane (tsf)	Field Approximation
Very Soft	< 2	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	2 – 4	0.25 – 0.50	0.12 – 0.25	Easily penetrated several inches by thumb
Medium Stiff	5 – 7	0.50 – 1.0	0.25 – 0.50	Penetrated several inches by thumb w/moderate effort
Stiff	8 – 11	1.0 – 2.0	0.50 – 1.0	Readily indented by thumbnail
Very Stiff	12 – 29	2.0 – 4.0	1.0 – 2.0	Indented by thumb but penetrated only with great effort
Hard	≥ 30	> 4.0	> 2.0	Indented by thumbnail with difficulty

\* Using SPT N<sub>60</sub> is considered a crude approximation for cohesive soils.

APPARENT DENSITY OF COHESIONLESS SOILS (AASHTO 1988)	
Descriptor	SPT N <sub>60</sub> Value (blows/foot)
Very Loose	0 – 3
Loose	4 – 8
Medium Dense	9 – 29
Dense	30 – 49
Very Dense	≥ 50

MOISTURE (ASTM D2488-06)	
Descriptor	Criteria
Dry	Absence of moisture, dusty, dry to the touch, well below optimum moisture content (per ASTM D698 or D1557)
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table, well above optimum moisture content (per ASTM D698 or D1557)

PERCENT OR PROPORTION OF SOILS (ASTM D2488-06)	
Descriptor	Criteria
Trace	Particles are present but estimated < 5%
Few	5 – 10%
Little	15 – 25%
Some	30 – 45%
Mostly	50 – 100%
Percentages are estimated to nearest 5% in the field. Use "about" unless percentages are based on laboratory testing.	

SOIL PARTICLE SIZE (ASTM D2488-06)	
Descriptor	Size
Boulder	> 12 inches
Cobble	3 to 12 inches
Gravel - Coarse Fine	¾ inch to 3 inches No. 4 sieve to ¾ inch
Sand - Coarse Medium Fine	No. 10 to No. 4 sieve (4.75mm) No. 40 to No. 10 sieve (2mm) No. 200 to No. 40 sieve (.425mm)
Silt and Clay ("fines")	Passing No. 200 sieve (0.075mm)

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2488)			
Major Division		Group Symbol	Description
<b>Coarse Grained Soils</b>  (more than 50% retained on #200 sieve)	<b>Gravel</b> (50% or more retained on No. 4 sieve)	Clean Gravel	GW Well-graded gravels and gravel-sand mixtures, little or no fines
		Gravel with fines	GP Poorly graded gravels and gravel-sand mixtures, little or no fines
			GM Silty gravels and gravel-sand-silt mixtures
	<b>Sand</b> (> 50% passing No. 4 sieve)	Clean sand	GC Clayey gravels and gravel-sand-clay mixtures
		Sand with fines	SW Well-graded sands and gravelly sands, little or no fines
			SP Poorly-graded sands and gravelly sands, little or no fines
<b>Fine Grained Soils</b>  (50% or more passing #200 sieve)	<b>Silt and Clay</b> (liquid limit < 50)	SM Silty sands and sand-silt mixtures	
		SC Clayey sands and sand-clay mixtures	
		ML Inorganic silts, rock flour and clayey silts	
	<b>Silt and Clay</b> (liquid limit > 50)	CL Inorganic clays of low-medium plasticity, gravelly, sandy & lean clays	
		OL Organic silts and organic silty clays of low plasticity	
		MH Inorganic silts and clayey silts	
		CH Inorganic clays or high plasticity, fat clays	
		OH Organic clays of medium to high plasticity	
<b>Highly Organic Soils</b>		PT Peat, muck and other highly organic soils	



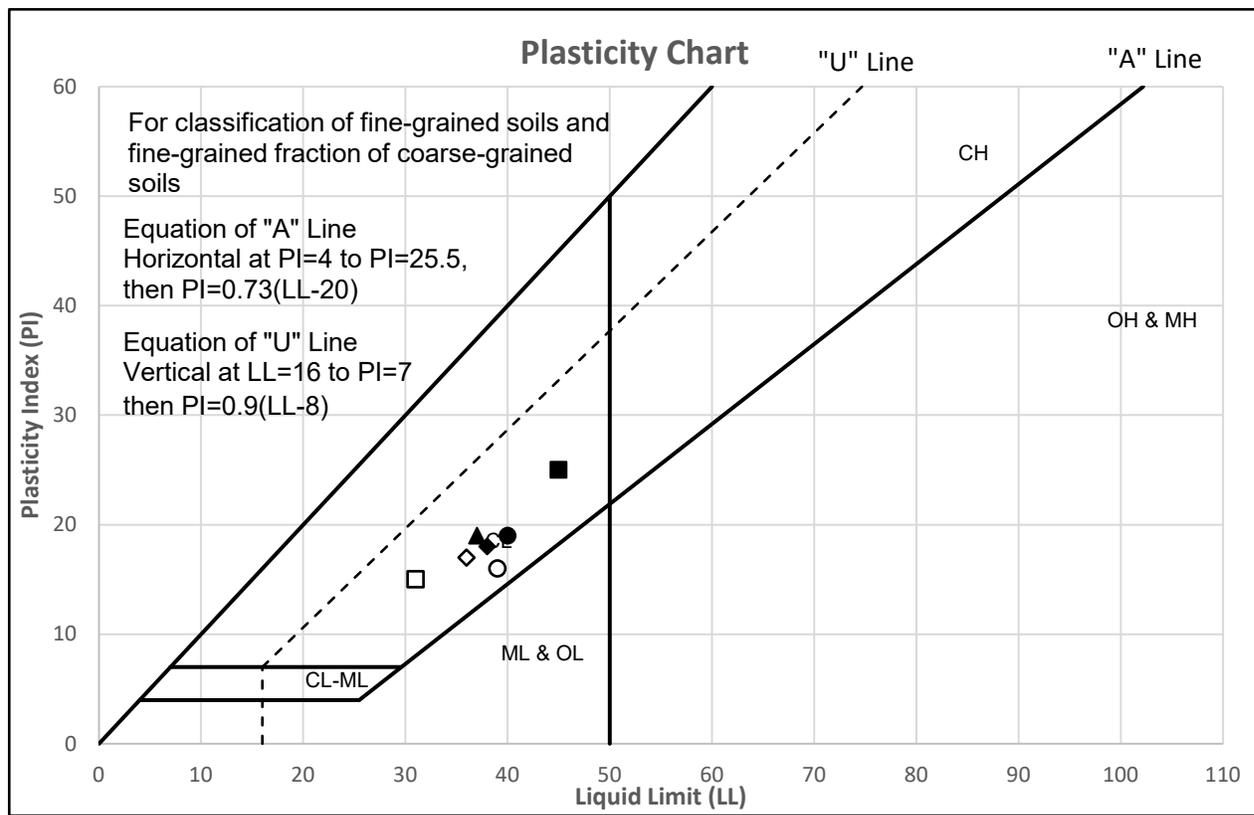
GRAPHIC SYMBOL LEGEND		
SPT	⊗	Standard Penetration Test (2" OD), ASTM D1586
GRAB	▣	Grab Sample
ST		Shelby Tube, ASTM D1587 (pushed)
AUGER	■	Boring Advanced Through Drilling
CORE		Rock coring



## APPENDIX B

### Laboratory Test Results

## Results of Classification Tests



	Boring No	Depth (ft)	LL	PL	PI	% Fines	USCS Classification
■	B-1, S-1	0.5 to 2	45	20	25	---	Lean Clay with sand (CL)
□	B-2, S-2	2 to 3.5	31	16	15	---	Lean Clay with sand (CL)
◆	B-3, S-2	2 to 3.5	38	20	18	---	Lean Clay with sand (CL)
◇	B-3, S-3	3.5 to 5	36	19	17	---	Lean Clay with sand (CL)
●	B-5, S-2	2 to 3.5	40	21	19	---	Lean Clay with gravel (CL)
○	B-7, S-2	2 to 3.5	39	23	16	---	Lean Clay with sand (CL)
▲	B-7, S-3	3.5 to 5	37	18	19	---	Lean Clay (CL)

Planned Academy Supplemental Services  
3299 U.S. Highway 412  
Siloam Springs, Arkansas

GTS Project No. 25-15108



# GTS, Inc.

Geotechnical & Testing Services

1915 North Shiloh Drive  
Fayetteville, Arkansas 72704

Office: (479) 521-7645

## Office Locations

Fayetteville, Arkansas  
Little Rock, Arkansas  
Fort Smith, Arkansas  
Tulsa, Oklahoma  
Dallas, Texas

**PROJECT:** Planned Academy  
Supplemental Services

**DATE:** 12/5/2025

**JOB NO:** 25-15108

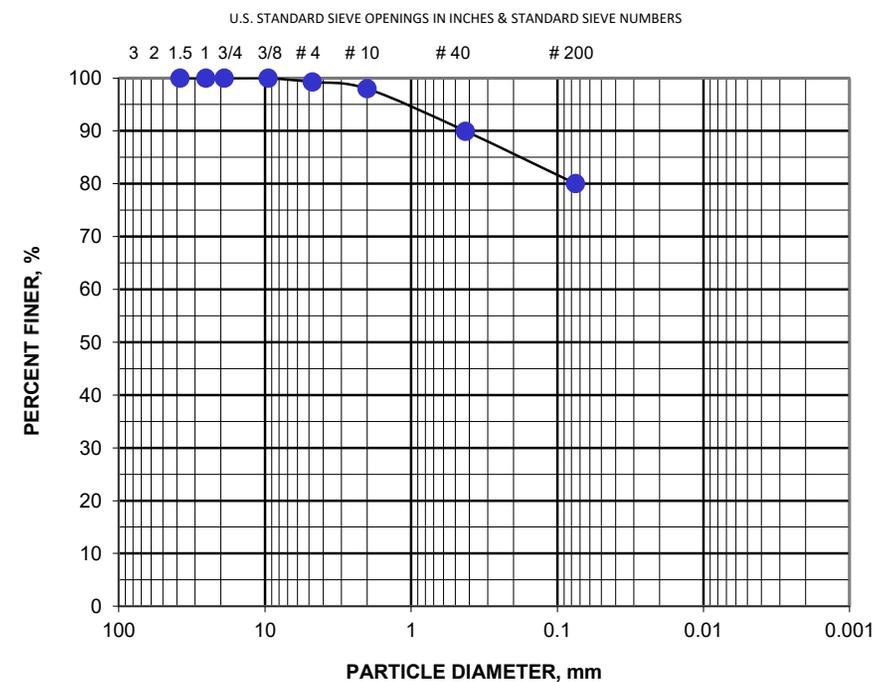
		SIEVE SIZE	PERCENT PASSING
<b>BORING NO.</b>	SB-1	3.00"	100.0%
<b>SAMPLE NO.</b>	S-1	1.50"	100.0%
<b>DEPTH (FT)</b>	0.5 to 2	1.00"	100.0%
		3/4"	100.0%
<b>PLASTIC LIMIT</b>	20	3/8"	100.0%
		No. 4	99.3%
<b>LIQUID LIMIT</b>	32	No. 10	98.0%
		No. 40	90.0%
<b>PLASTICITY INDEX</b>	12	No. 200	80.0%

**MOISTURE CONTENT (%)** 22.3

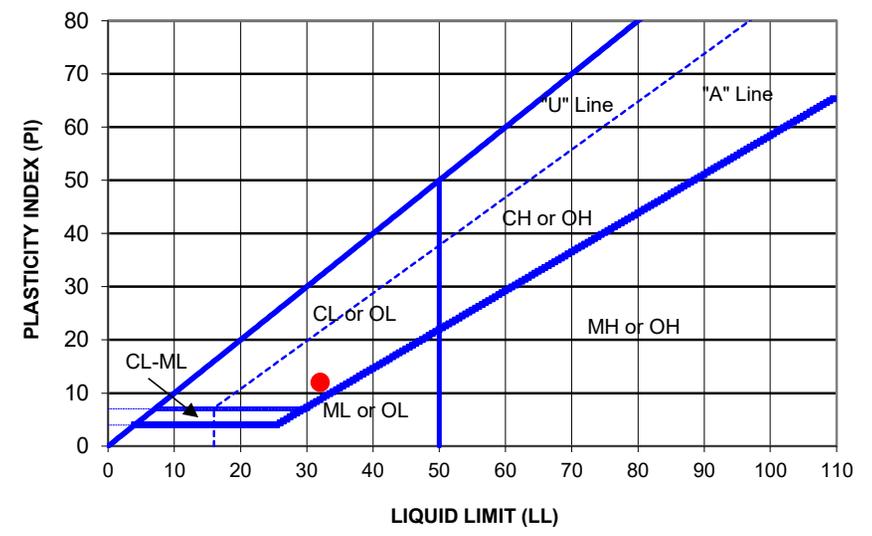
**VISUAL DESCRIPTION** brown and tan, with trace chert fragments

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Sand, CL	A-6	9

## GRAIN SIZE DISTRIBUTION CURVE



## PLASTICITY CHART



**PROJECT:** Planned Academy  
Supplemental Services

**DATE:** 12/5/2025

**JOB NO:** 25-15108

**BORING NO.** SB-2

**SAMPLE NO.** S-2

**DEPTH (FT)** 2 to 3.5

**PLASTIC LIMIT** 16

**LIQUID LIMIT** 31

**PLASTICITY INDEX** 15

**MOISTURE CONTENT (%)** 17.3

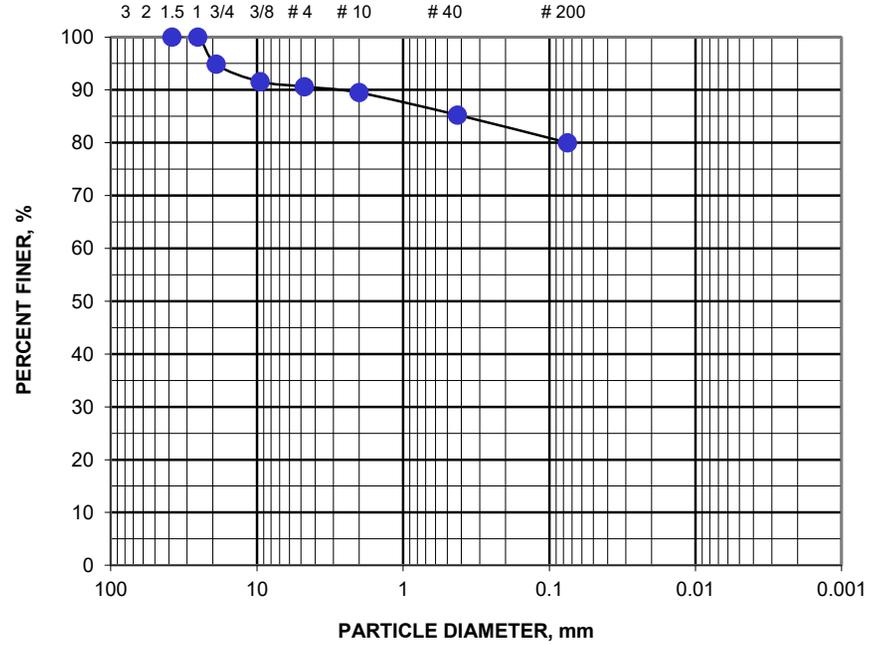
**VISUAL DESCRIPTION** brown and red, with trace chert fragments, and rootlets

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Sand, CL	A-6	10

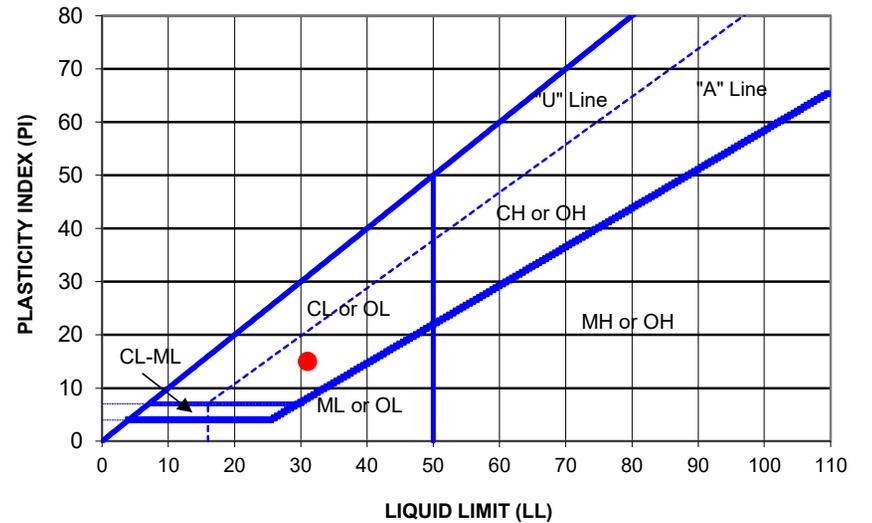
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	94.9%
3/8"	91.6%
No. 4	90.6%
No. 10	89.5%
No. 40	85.3%
No. 200	80.0%

**GRAIN SIZE DISTRIBUTION CURVE**

U.S. STANDARD SIEVE OPENINGS IN INCHES & STANDARD SIEVE NUMBERS



**PLASTICITY CHART**



# GTS, Inc.

Geotechnical & Testing Services

1915 North Shiloh Drive  
Fayetteville, Arkansas 72704

Office: (479) 521-7645

### Office Locations

Fayetteville, Arkansas  
Little Rock, Arkansas  
Fort Smith, Arkansas  
Tulsa, Oklahoma  
Dallas, Texas

**PROJECT:** Planned Academy  
Supplemental Services

**DATE:** 12/5/2025

**JOB NO:** 25-15108

**BORING NO.** SB-3

**SAMPLE NO.** S-2

**DEPTH (FT)** 2 to 3.5

**PLASTIC LIMIT** 20

**LIQUID LIMIT** 38

**PLASTICITY INDEX** 18

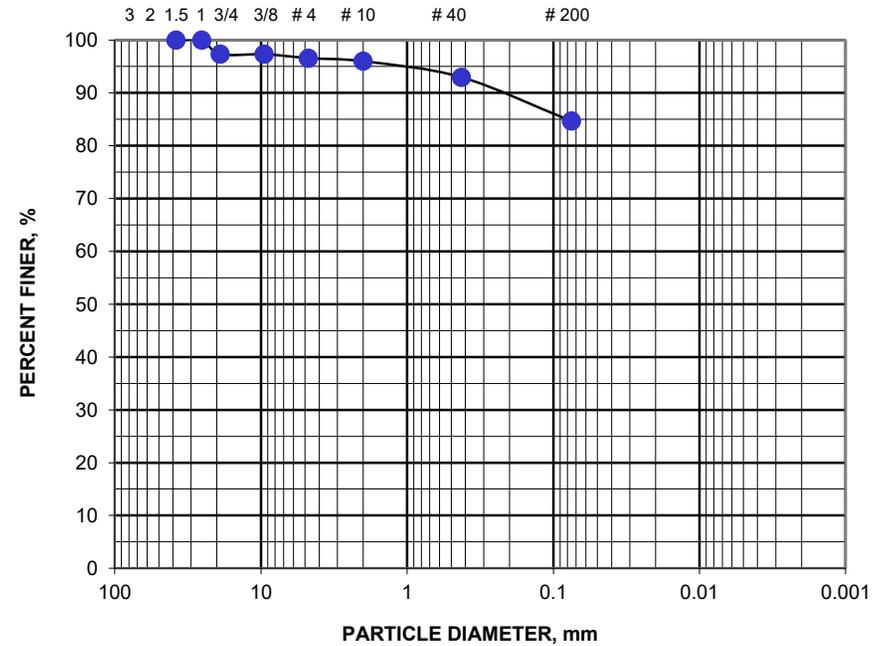
**MOISTURE CONTENT (%)** 21.8

**VISUAL DESCRIPTION** red, tan and brown, with trace chert fragments and rootlets

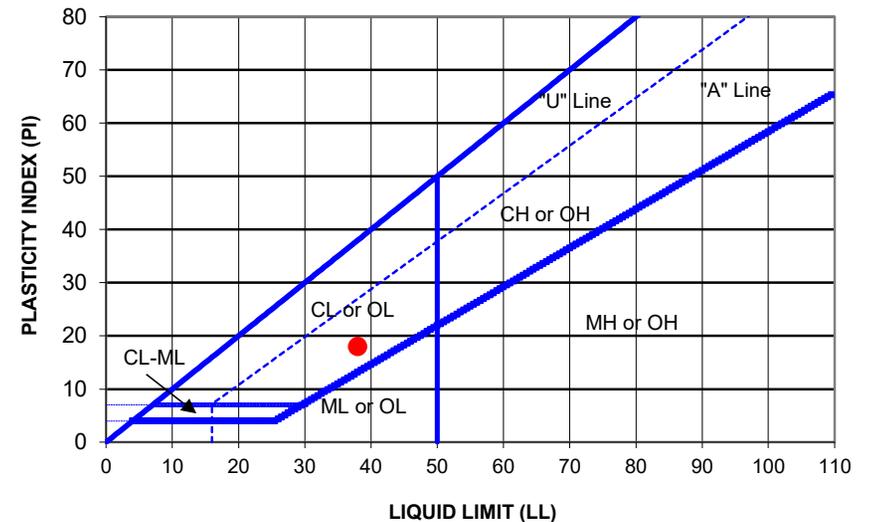
ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Sand, CL	A-6	15

## GRAIN SIZE DISTRIBUTION CURVE

U.S. STANDARD SIEVE OPENINGS IN INCHES & STANDARD SIEVE NUMBERS



## PLASTICITY CHART



# GTS, Inc.

Geotechnical & Testing Services

1915 North Shiloh Drive  
Fayetteville, Arkansas 72704

Office: (479) 521-7645

## Office Locations

Fayetteville, Arkansas  
Little Rock, Arkansas  
Fort Smith, Arkansas  
Tulsa, Oklahoma  
Dallas, Texas

**PROJECT:** Planned Academy  
Supplemental Services

**DATE:** 12/5/2025

**JOB NO:** 25-15108

**BORING NO.** SB-3

**SAMPLE NO.** S-3

**DEPTH (FT)** 3.5 to 5

**PLASTIC LIMIT** 19

**LIQUID LIMIT** 36

**PLASTICITY INDEX** 17

SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	99.5%
No. 4	98.1%
No. 10	95.1%
No. 40	87.8%
No. 200	83.2%

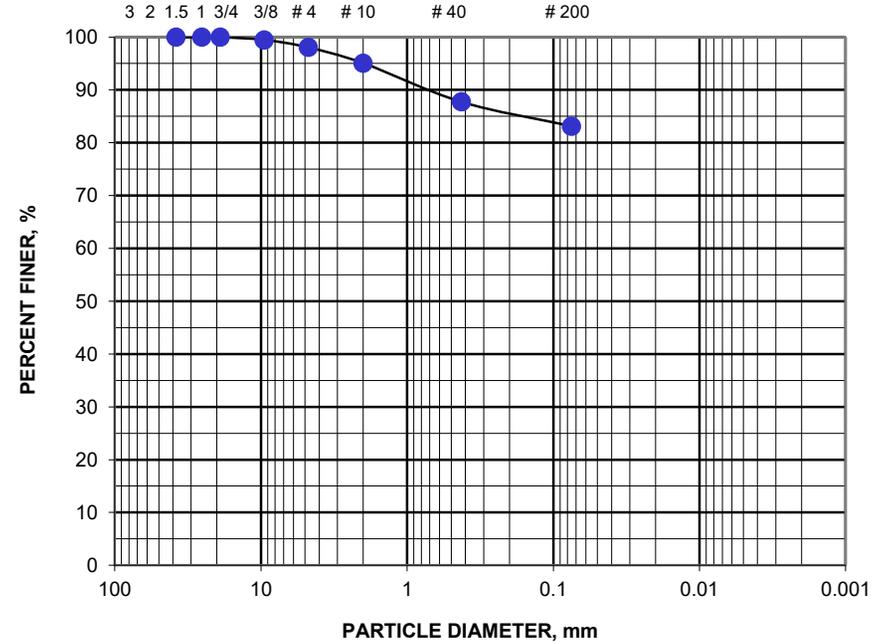
**MOISTURE CONTENT (%)** 17.8

**VISUAL DESCRIPTION** red, tan and brown, with trace chert fragment, and trace rootlets

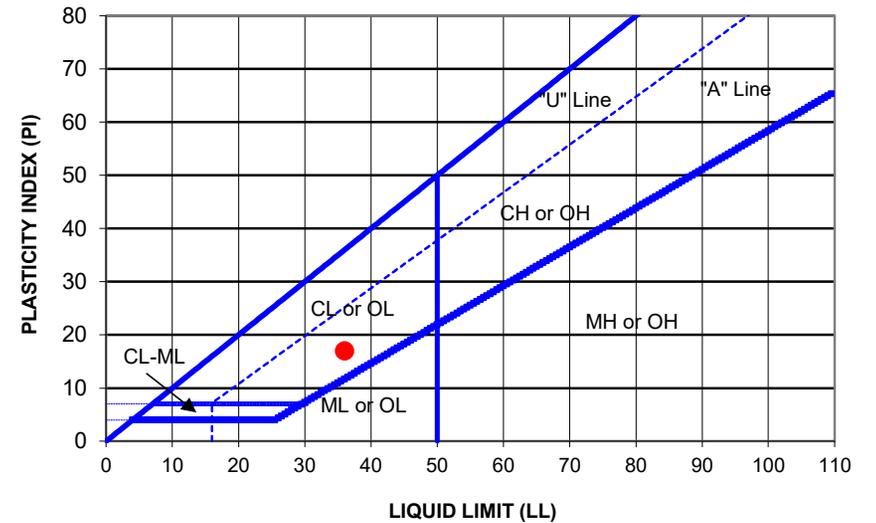
ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Sand, CL	A-6	13

## GRAIN SIZE DISTRIBUTION CURVE

U.S. STANDARD SIEVE OPENINGS IN INCHES & STANDARD SIEVE NUMBERS



## PLASTICITY CHART



**PROJECT:** Planned Academy  
Supplemental Services

**DATE:** 12/5/2025

**JOB NO:** 25-15108

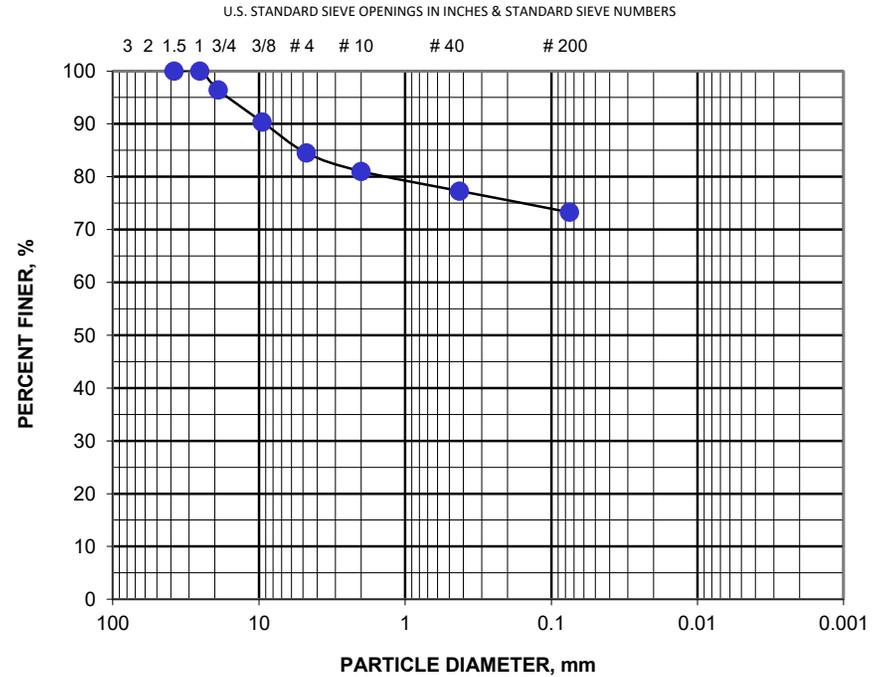
		SIEVE SIZE	PERCENT PASSING
<b>BORING NO.</b>	SB-5	3.00"	100.0%
<b>SAMPLE NO.</b>	S-2	1.50"	100.0%
<b>DEPTH (FT)</b>	2 to 3.5	1.00"	100.0%
<b>PLASTIC LIMIT</b>	21	3/4"	96.5%
<b>LIQUID LIMIT</b>	40	3/8"	90.4%
<b>PLASTICITY INDEX</b>	19	No. 4	84.5%
		No. 10	81.0%
		No. 40	77.3%
		No. 200	73.3%

**MOISTURE CONTENT (%)** 16.1

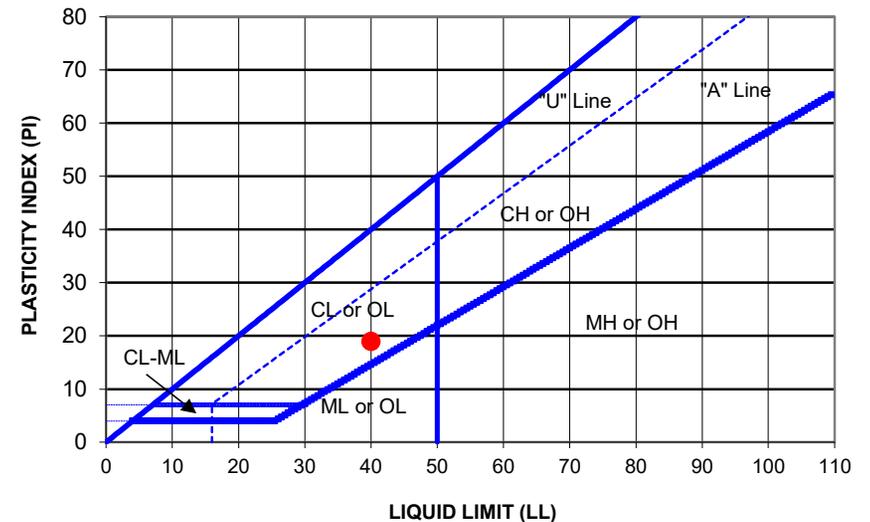
**VISUAL DESCRIPTION** brown and tan

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Gravel, CL	A-6	13

**GRAIN SIZE DISTRIBUTION CURVE**



**PLASTICITY CHART**



**PROJECT:** Planned Academy  
Supplemental Services

**DATE:** 12/5/2025

**JOB NO:** 25-15108

**BORING NO.** SB-7

**SAMPLE NO.** S-2

**DEPTH (FT)** 2 to 3.5

**PLASTIC LIMIT** 21

**LIQUID LIMIT** 39

**PLASTICITY INDEX** 18

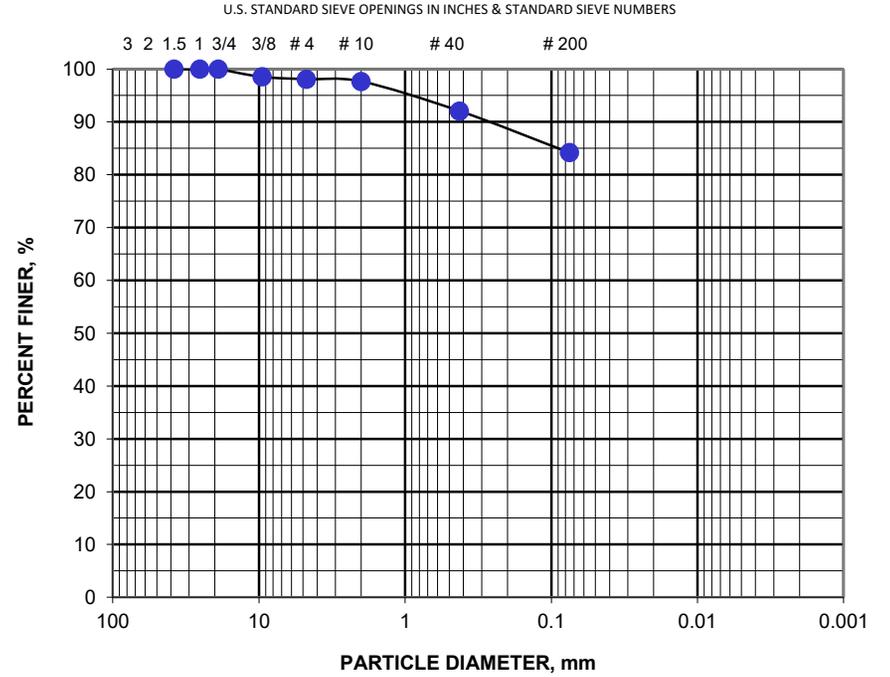
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	98.6%
No. 4	98.1%
No. 10	97.7%
No. 40	92.1%
No. 200	84.2%

**MOISTURE CONTENT (%)** 21.4

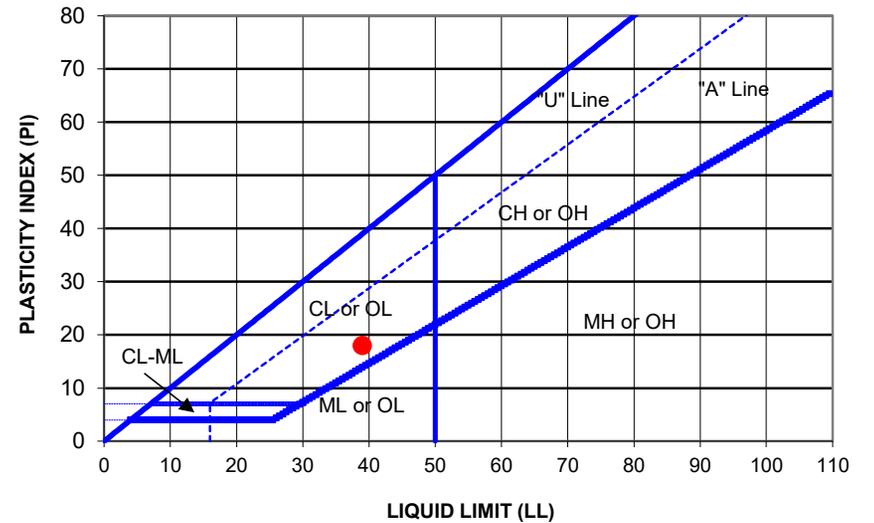
**VISUAL DESCRIPTION** red and tan, with trace broken chert fragments

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Sand, CL	A-6	15

**GRAIN SIZE DISTRIBUTION CURVE**



**PLASTICITY CHART**



**PROJECT:** Planned Academy  
Supplemental Services

**DATE:** 12/5/2025

**JOB NO:** 25-15108

**BORING NO.** SB-7

**SAMPLE NO.** S-3

**DEPTH (FT)** 3.5 to 5

**PLASTIC LIMIT** 18

**LIQUID LIMIT** 37

**PLASTICITY INDEX** 19

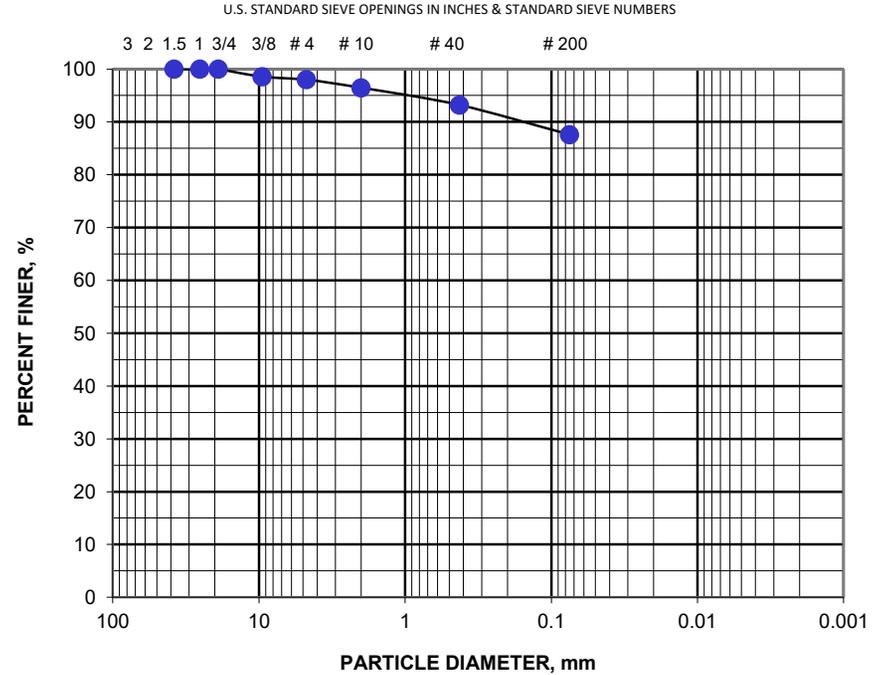
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	98.6%
No. 4	98.0%
No. 10	96.5%
No. 40	93.2%
No. 200	87.6%

**MOISTURE CONTENT (%)** 18.9

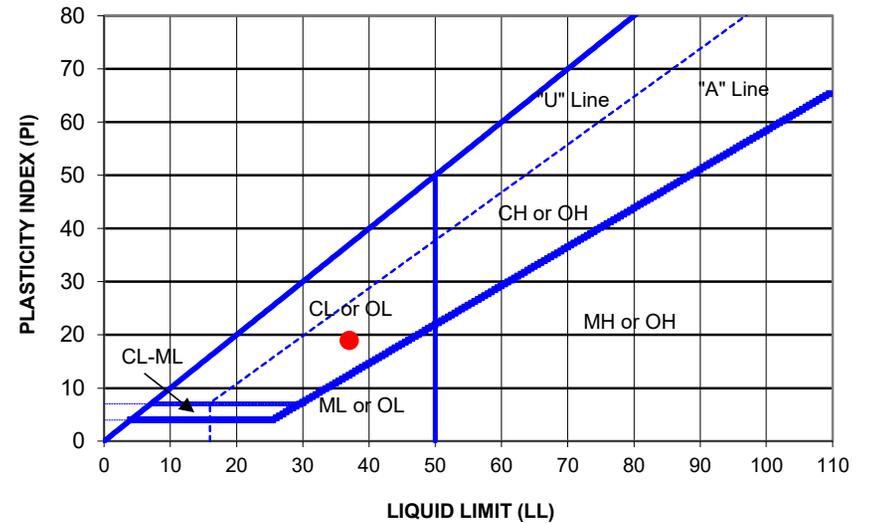
**VISUAL DESCRIPTION** red and tan, with trace broken chert fragments

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay, CL	A-6	16

**GRAIN SIZE DISTRIBUTION CURVE**



**PLASTICITY CHART**





## APPENDIX C

### Site Reconnaissance Package

## Site Reconnaissance Checklist

- Project Title: Planned Academy Sports + Outdoor Retail Store
- Project Description: New Retail Store
- Project Address: 3299 US Highway 412  
Siloam Springs, Arkansas
- Project Coordinates: 36° 10' 59.62" N 94° 30'37.9" W
- Academy Sports Contact Name: N/A
- Academy Sports Contact Info: N/A
- Date of Reconnaissance: October 14, 2025
- Site Conditions:
  - The project site is located at the real address of 3299 Highway 412 (US-412) in Siloam Springs, Arkansas. The project site is recognized by Benton County as Parcel No. 03-04331-001. The project site is approximately 6.6 acres in area. Topographically, the project site is generally flat with approximately 10 feet of topographic relief in 1,000 linear feet, downhill from the southwest corner to the northeast corner of the lot. At the time of the site reconnaissance, the project site was a grass covered field; a surface drainage feature is also present in the central, eastern portion of the project site. An existing access road runs across the southern half of the property in the east-west direction. No buildings or other pavements were observed on the site.



**Photograph No. 1 Looking north down east property line.**



**Photograph No. 2 Looking west across property.**



**Photograph No. 3 Looking north down center of property.**



**Photograph No. 4 Looking southwest across property.**

## Site Reconnaissance Bench Study

- Google Earth Image
- USGS Topo Map
- Geological Map
- Water Well Logs
- Geo-Hazard Map (Karst)
- Wetland Maps
- NRCS Soil Map
- GTS Previous Borings

Walmart Auto Care Center

Low's Home Improvement

Waffle House

RBC b BQ

59

# EDR Aerial Photo Decade Package

10/15/25

**Site Name:**

Siloam Crossing  
3299 E Hwy 412  
Siloam Springs, AR 72761  
EDR Inquiry # 8139082.8

**Client Name:**

GTS Inc.  
1915 North Shiloh Dr  
Fayetteville, AR 72704-0000  
Contact: Michelle Parker



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

### Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2023	1"=500'	Flight Year: 2023	USDA/NAIP
2019	1"=500'	Flight Year: 2019	USDA/NAIP
2015	1"=500'	Flight Year: 2015	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2000	1"=500'	Flight Year: 2000	USGS/DOQQ
1994	1"=500'	Acquisition Date: March 03, 1994	USGS/DOQQ
1984	1"=500'	Flight Date: September 05, 1984	USGS
1980	1"=500'	Flight Date: March 14, 1980	USDA
1971	1"=500'	Flight Date: February 13, 1971	USGS
1968	1"=500'	Flight Date: March 01, 1968	USGS
1964	1"=500'	Flight Date: February 22, 1964	USGS

**When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.**

#### Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT.

ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA), ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT. Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2025 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.



INQUIRY # 8139082.8

YEAR: 2023

— = 500'





INQUIRY # 8139082.8

YEAR: 2019

— = 500'





INQUIRY # 8139082.8

YEAR: 2015

— = 500'





INQUIRY # 8139082.8

YEAR: 2010

— = 500'





INQUIRY # 8139082.8

YEAR: 2006

— = 500'





INQUIRY # 8139082.8

YEAR: 2000

— = 500'



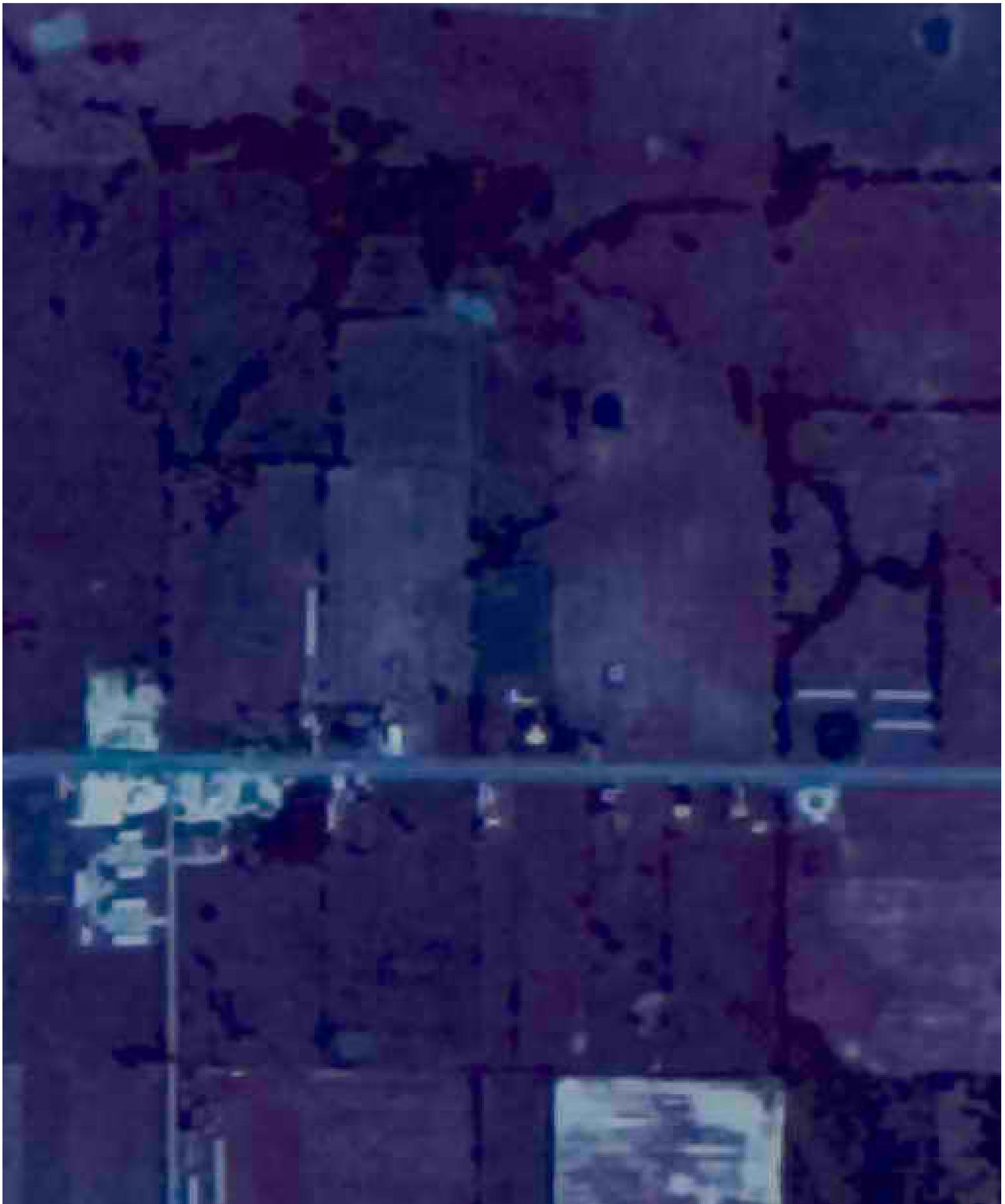


INQUIRY # 8139082.8

YEAR: 1994

\_\_\_\_\_ = 500'





INQUIRY #: 8139082.8

YEAR: 1984

— = 500'



Subject boundary not shown because it e



INQUIRY #: 8139082.8

YEAR: 1980

— = 500'





INQUIRY # 8139082.8

YEAR: 1971

\_\_\_\_\_ = 500'





INQUIRY # 8139082.8

YEAR: 1968

\_\_\_\_\_ = 500'





INQUIRY # 8139082.8

YEAR: 1964

\_\_\_\_\_ = 500'



# EDR Historical Topo Map Report

10/14/25

**Site Name:**

Siloam Crossing  
3299 E Hwy 412  
Siloam Springs, AR 72761  
EDR Inquiry # 8139082.4

**Client Name:**

GTS Inc.  
1915 North Shiloh Dr  
Fayetteville, AR 72704-0000  
Contact: Michelle Parker



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by GTS Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

**Search Results:****Coordinates:**

<b>P.O.#</b>	NA	<b>Latitude:</b>	36.183201 36° 11' 0" North
<b>Project:</b>	MG Siloam	<b>Longitude:</b>	-94.51044 -94° 30' 38" West
		<b>UTM Zone:</b>	Zone 15 North
		<b>UTM X Meters:</b>	364178.38
		<b>UTM Y Meters:</b>	4005325.50
		<b>Elevation:</b>	1153.14' above sea level

**Maps Provided:**

2020  
2017  
2014  
1982  
1970, 1972  
1901, 1904  
1899

**Disclaimer - Copyright and Trademark Notice**

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, LLC. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. This Report is provided on an "AS IS", "AS AVAILABLE" basis. NO WARRANTY EXPRESS OR IMPLIED IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, LLC AND ITS SUBSIDIARIES, AFFILIATES AND THIRD PARTY SUPPLIERS DISCLAIM ALL WARRANTIES, OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, ARISING OUT OF OR RELATED TO THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT, INCLUDING WITHOUT LIMITATION, ANY WARRANTIES REGARDING ACCURACY, QUALITY, CORRECTNESS, COMPLETENESS, COMPREHENSIVENESS, SUITABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NON-INFRINGEMENT, MISAPPROPRIATION, OR OTHERWISE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, LLC OR ITS SUBSIDIARIES, AFFILIATES OR THIRD PARTY SUPPLIERS BE LIABLE TO ANYONE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES OF ANY TYPE OR KIND (INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF USE, OR LOSS OF DATA), ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS REPORT OR ANY OF THE DATA AND INFORMATION PROVIDED IN THIS REPORT. Any analyses, estimates, ratings, environmental risk levels, or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only an assessment performed by a qualified environmental professional can provide findings, opinions or conclusions regarding the environmental risk or conditions in, on or at any property.

Copyright 2025 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, LLC or its affiliates. All other trademarks used herein are the property of their respective owners.

## Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 2020 Source Sheets



Siloam Springs  
2020  
7.5-minute, 24000



Gallatin  
2020  
7.5-minute, 24000

### 2017 Source Sheets



Siloam Springs  
2017  
7.5-minute, 24000



Gallatin  
2017  
7.5-minute, 24000

### 2014 Source Sheets



Siloam Springs  
2014  
7.5-minute, 24000



Gallatin  
2014  
7.5-minute, 24000

### 1982 Source Sheets



Siloam Springs  
1982  
7.5-minute, 24000  
Aerial Photo Revised 1980



Gallatin  
1982  
7.5-minute, 24000  
Aerial Photo Revised 1980

## Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

### 1970, 1972 Source Sheets



Gallatin  
1970  
7.5-minute, 24000  
Aerial Photo Revised 1968



Siloam Springs  
1972  
7.5-minute, 24000  
Aerial Photo Revised 1971

### 1901, 1904 Source Sheets



Fayetteville  
1901  
30-minute, 125000



Siloam Springs  
1904  
30-minute, 125000

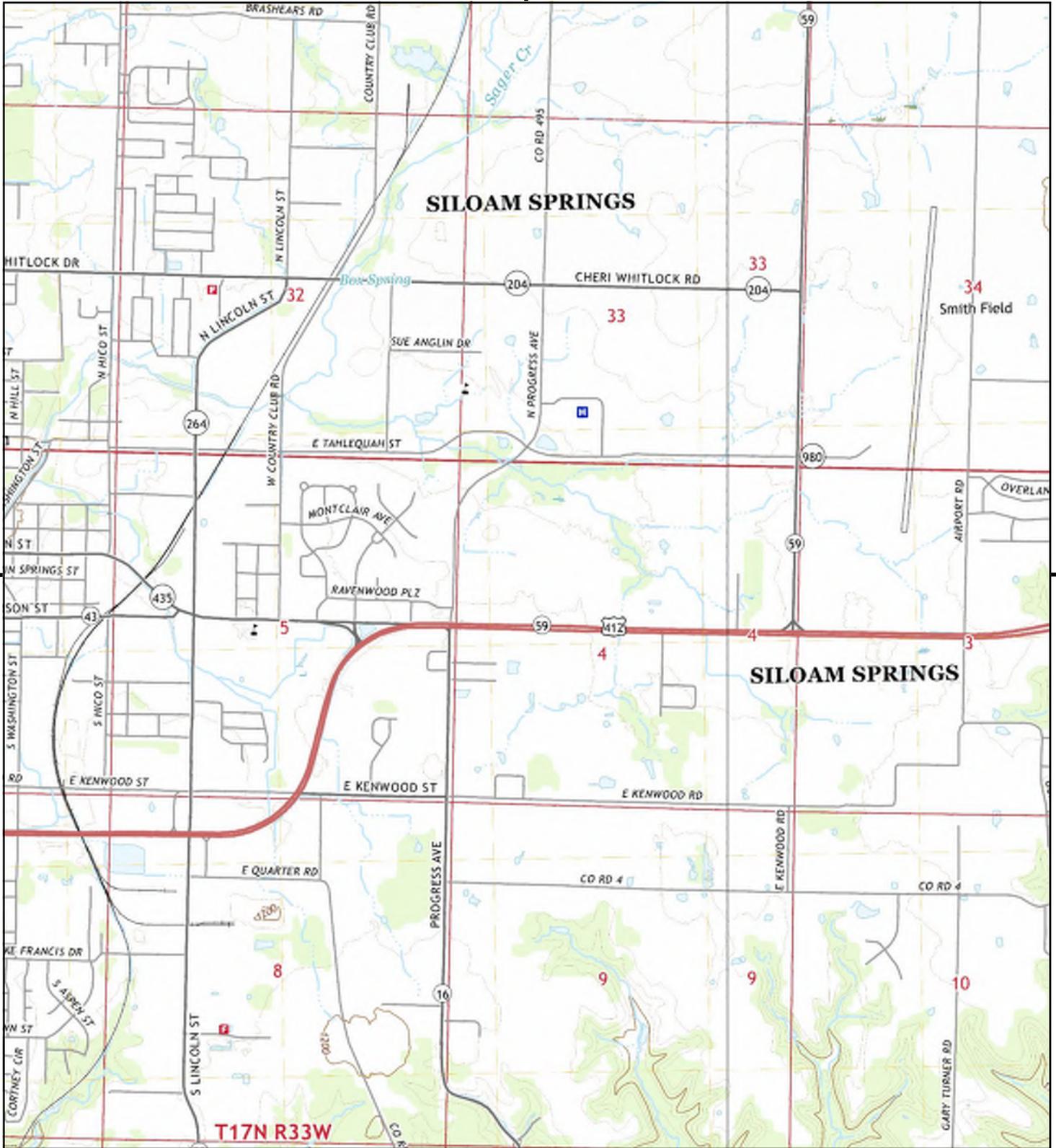
### 1899 Source Sheets



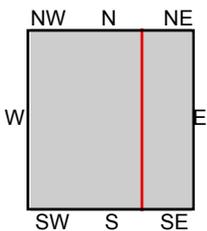
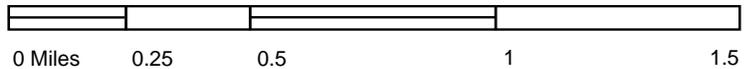
Fayetteville  
1899  
30-minute, 125000



Siloam Springs  
1899  
30-minute, 125000



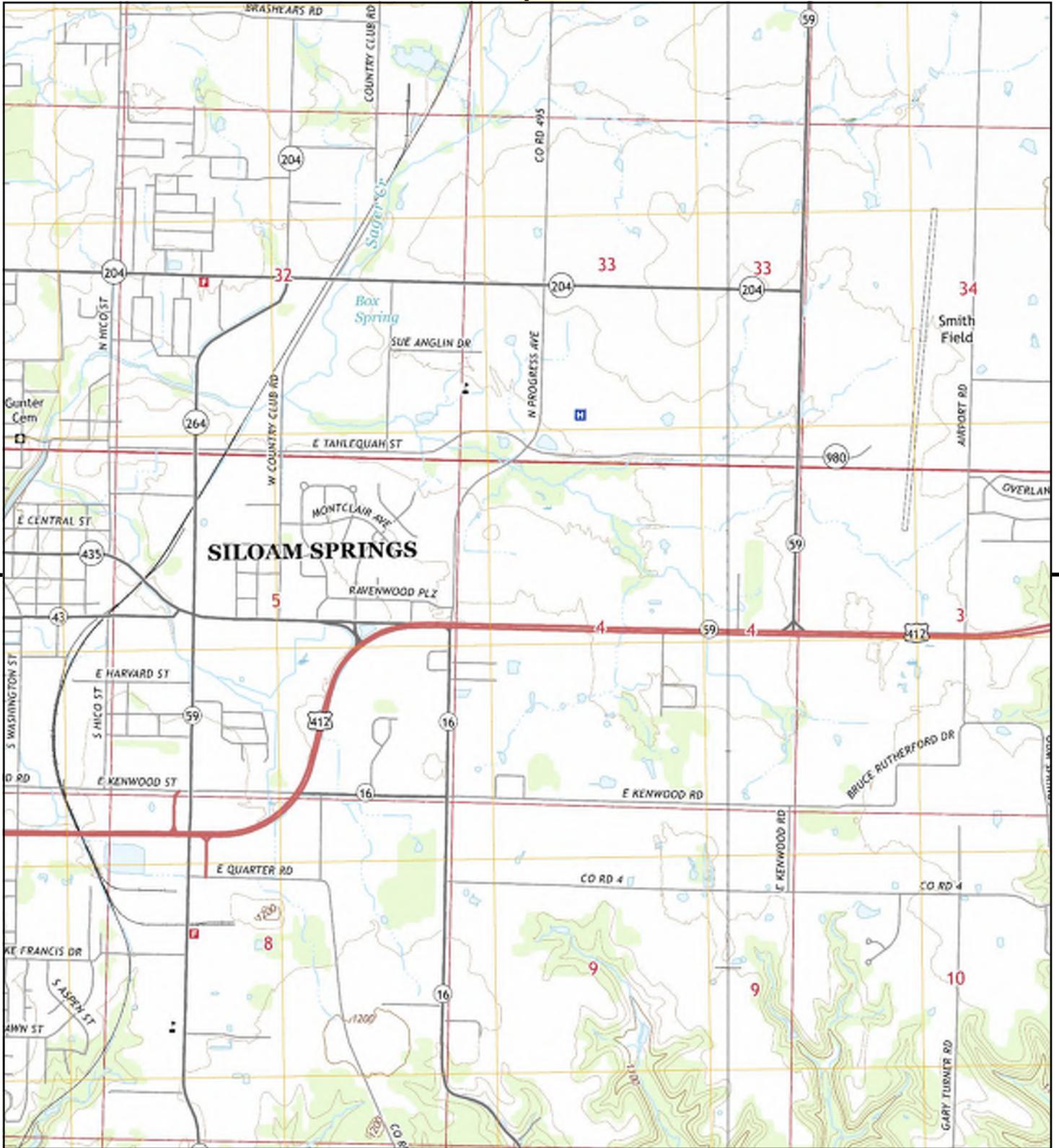
This report includes information from the following map sheet(s).



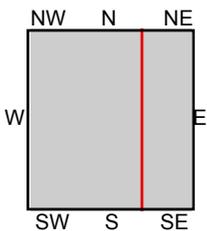
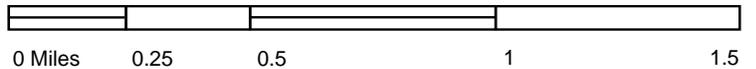
TP, Siloam Springs, 2020, 7.5-minute  
E, Gallatin, 2020, 7.5-minute

SITE NAME: Siloam Crossing  
ADDRESS: 3299 E Hwy 412  
Siloam Springs, AR 72761  
CLIENT: GTS Inc.





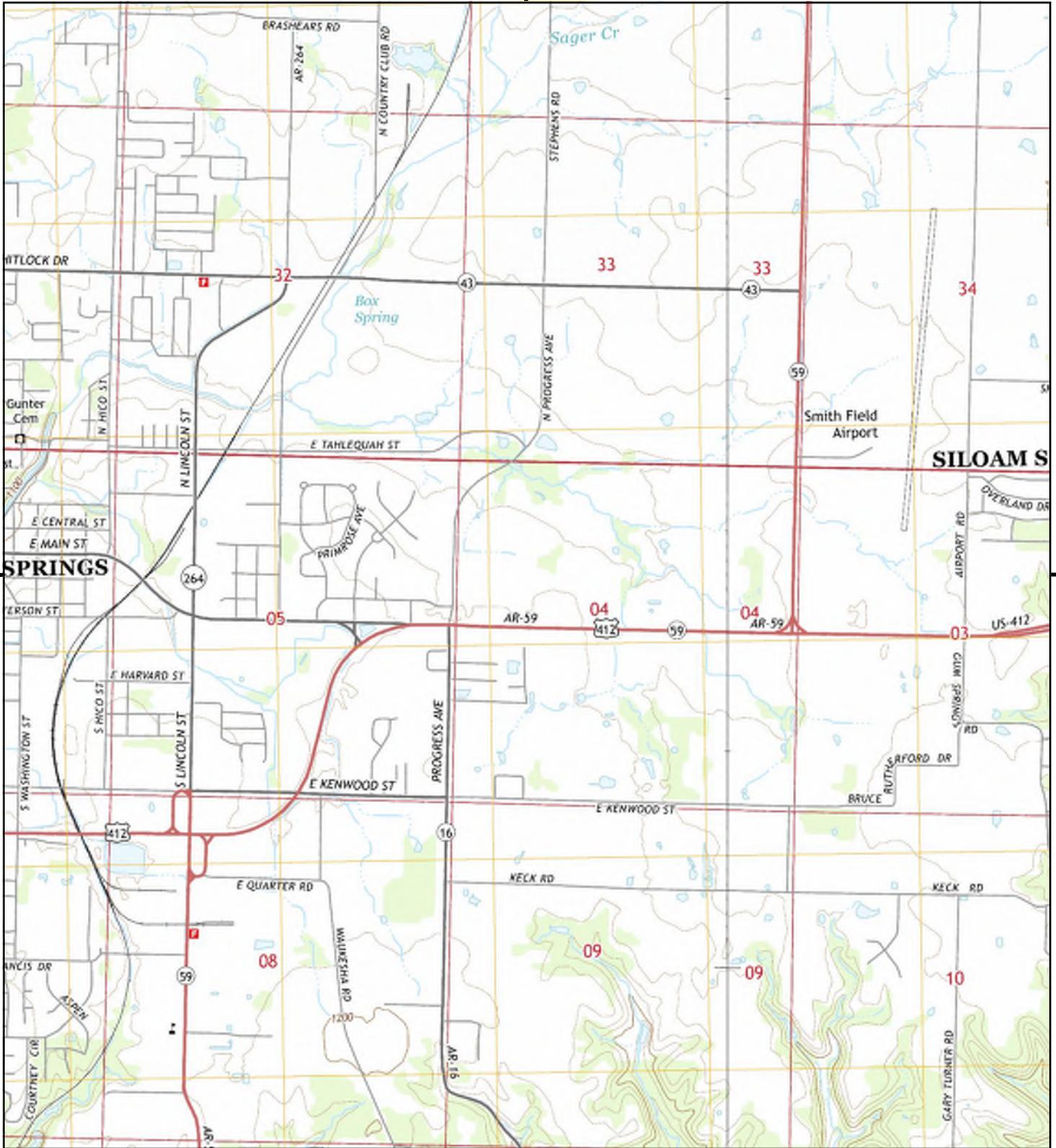
This report includes information from the following map sheet(s).



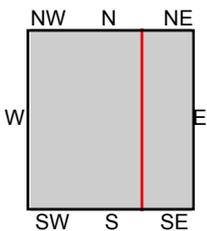
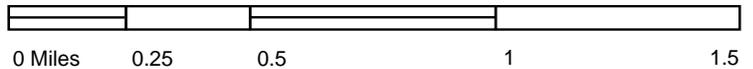
TP, Siloam Springs, 2017, 7.5-minute  
 E, Gallatin, 2017, 7.5-minute

SITE NAME: Siloam Crossing  
 ADDRESS: 3299 E Hwy 412  
 Siloam Springs, AR 72761  
 CLIENT: GTS Inc.





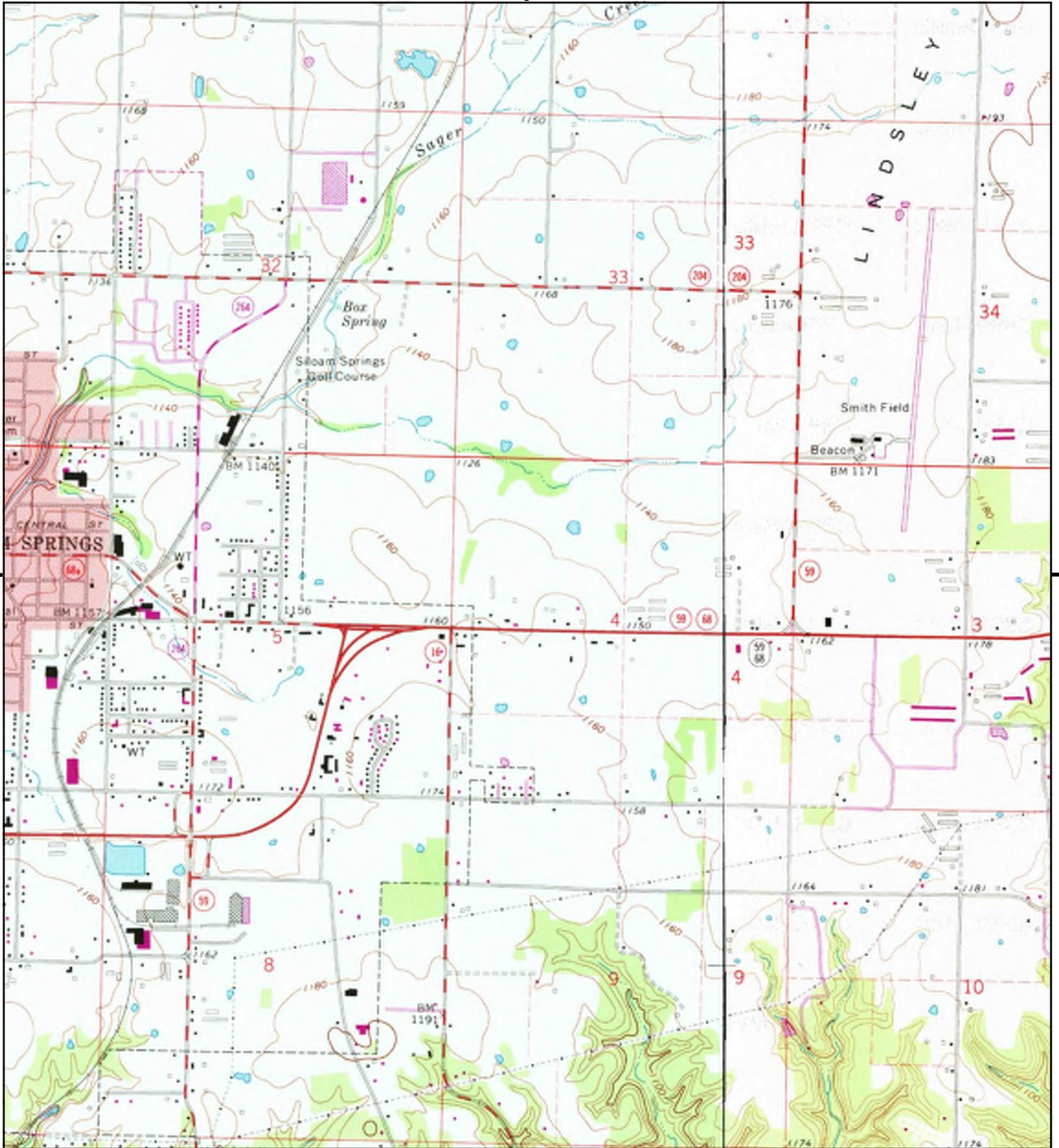
This report includes information from the following map sheet(s).



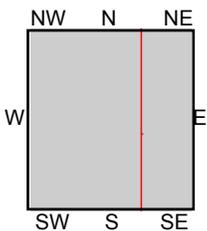
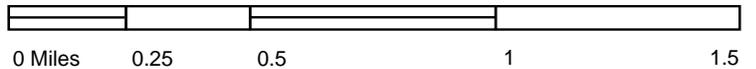
TP, Siloam Springs, 2014, 7.5-minute  
 E, Gallatin, 2014, 7.5-minute

SITE NAME: Siloam Crossing  
 ADDRESS: 3299 E Hwy 412  
 Siloam Springs, AR 72761  
 CLIENT: GTS Inc.





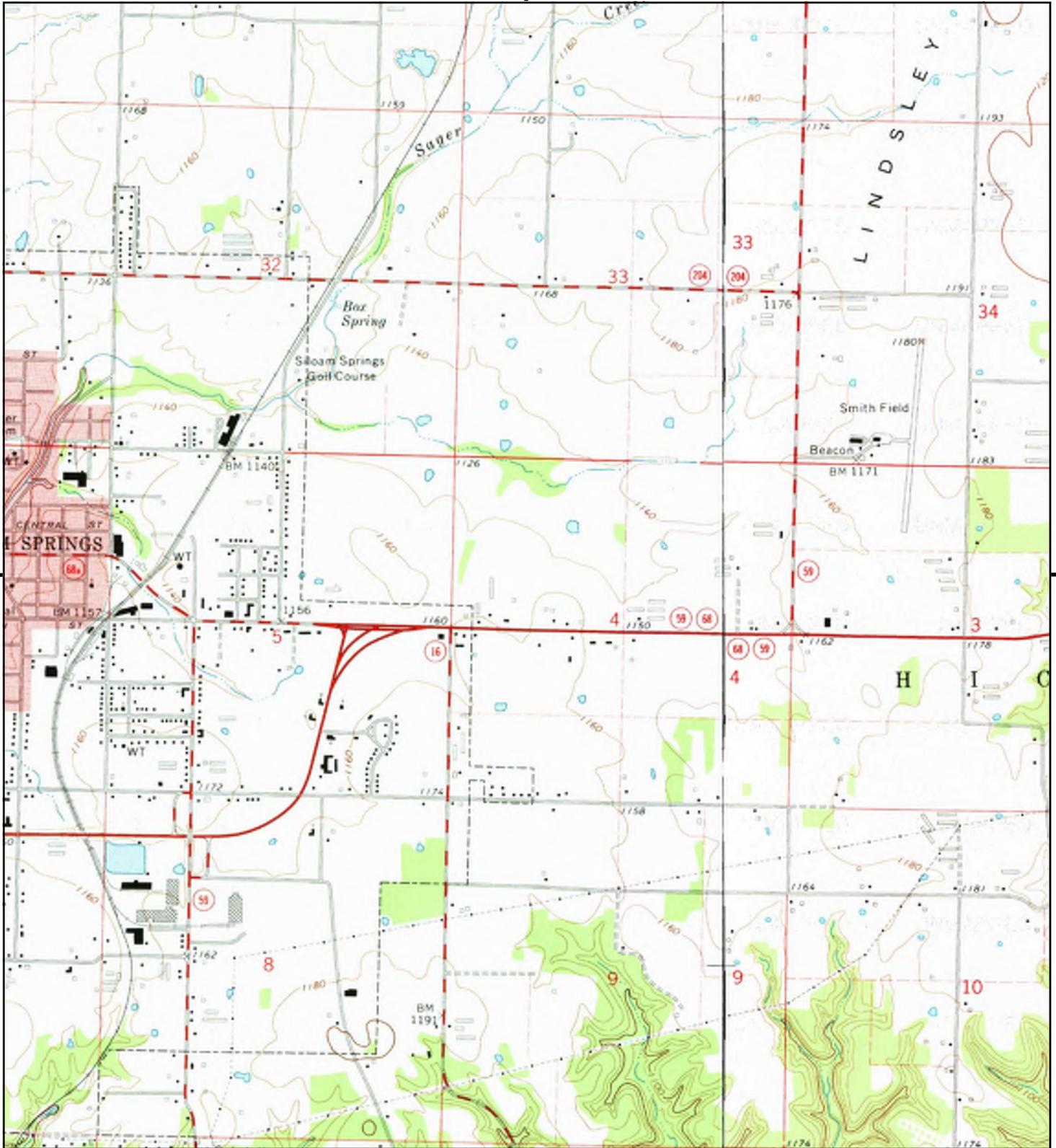
This report includes information from the following map sheet(s).



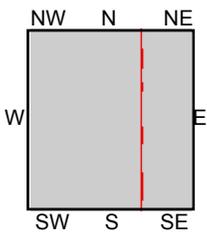
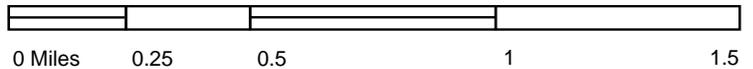
TP, Siloam Springs, 1982, 7.5-minute  
E, Gallatin, 1982, 7.5-minute

SITE NAME: Siloam Crossing  
ADDRESS: 3299 E Hwy 412  
Siloam Springs, AR 72761  
CLIENT: GTS Inc.





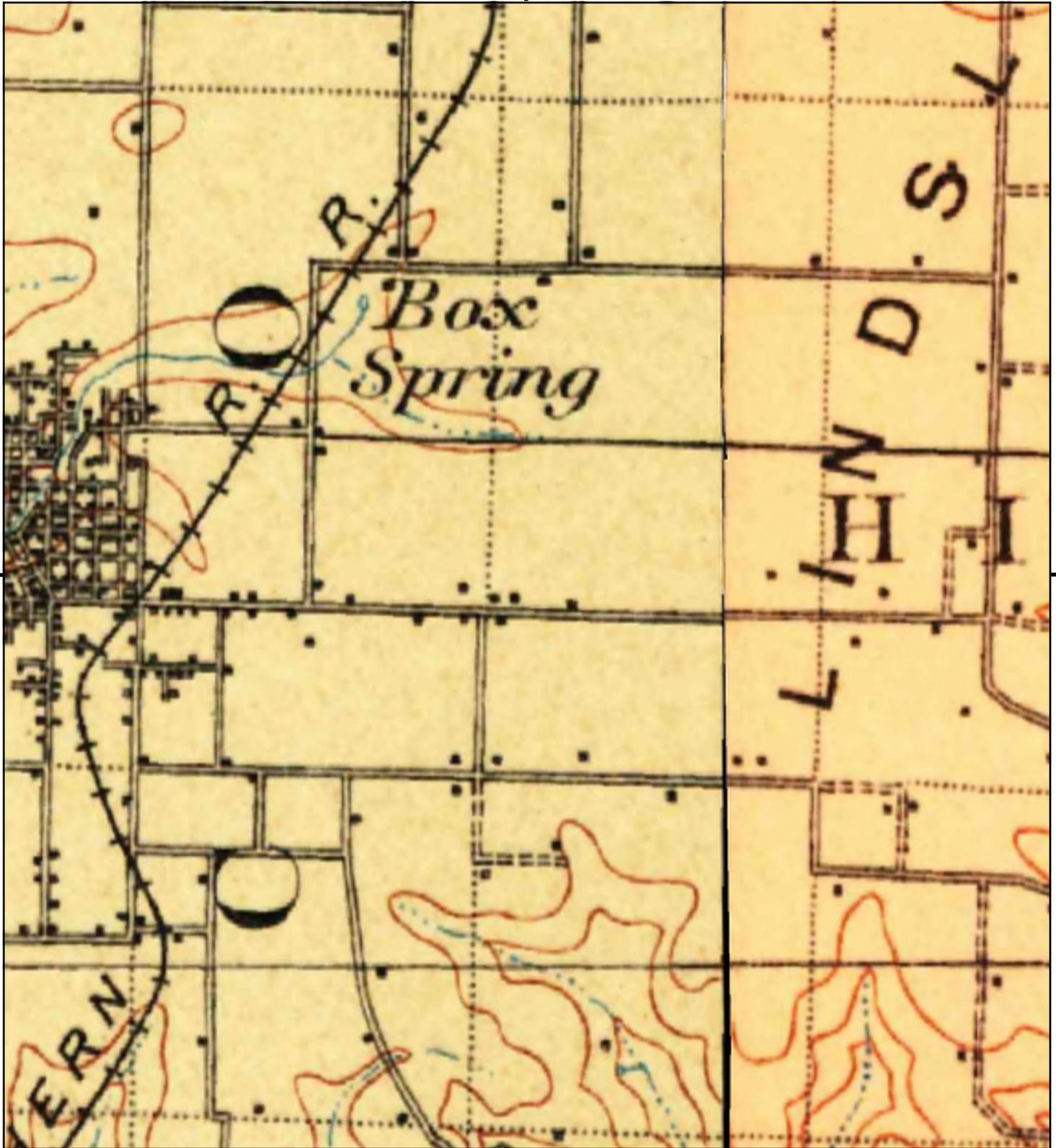
This report includes information from the following map sheet(s).



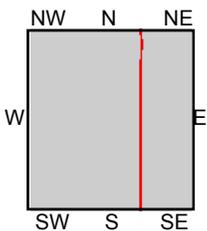
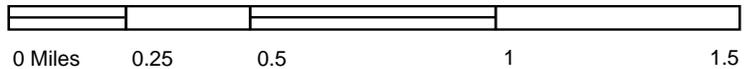
TP, Siloam Springs, 1972, 7.5-minute  
E, Gallatin, 1970, 7.5-minute

**SITE NAME:** Siloam Crossing  
**ADDRESS:** 3299 E Hwy 412  
Siloam Springs, AR 72761  
**CLIENT:** GTS Inc.





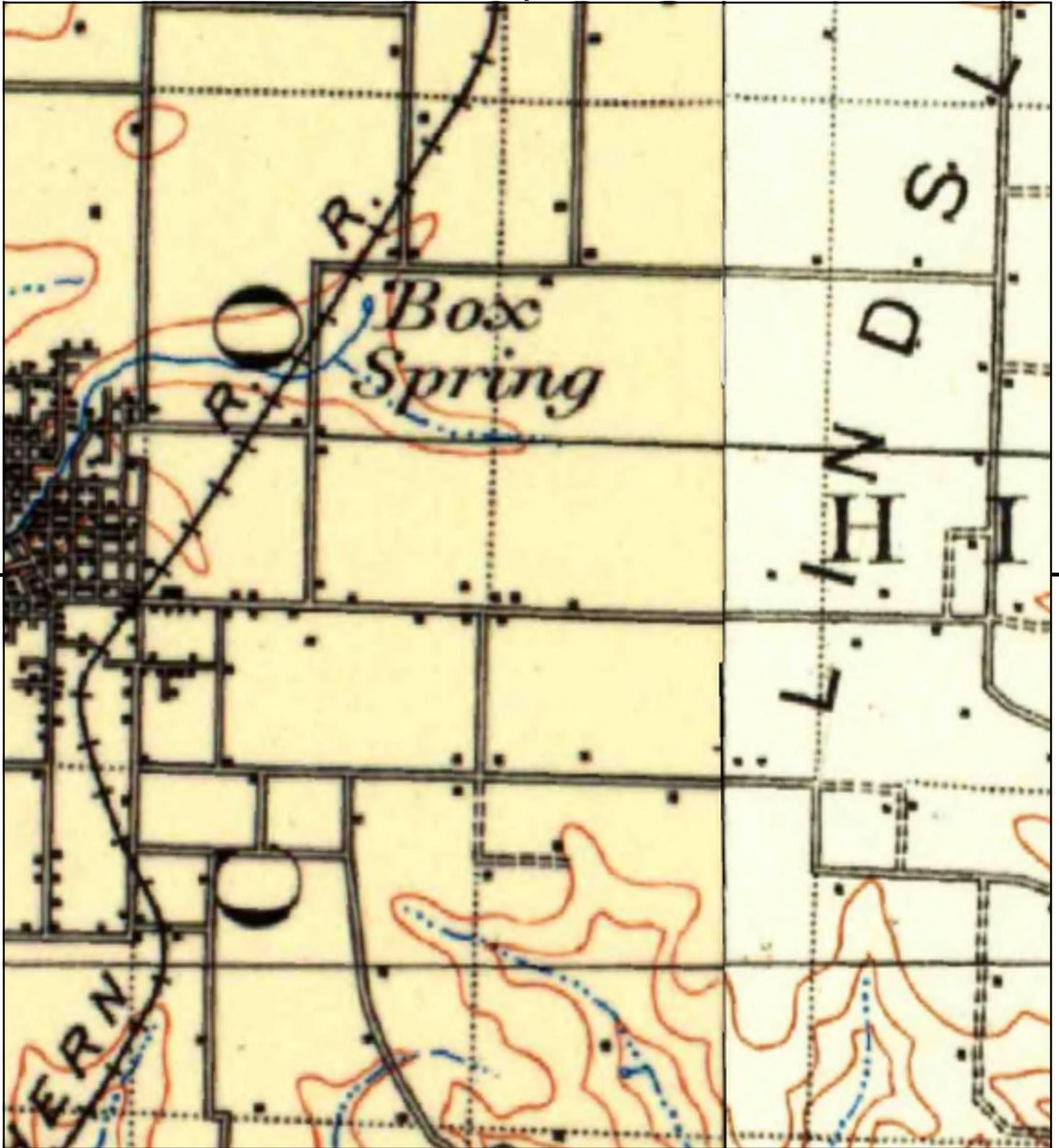
This report includes information from the following map sheet(s).



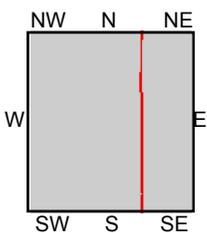
TP, Siloam Springs, 1904, 30-minute  
E, Fayetteville, 1901, 30-minute

SITE NAME: Siloam Crossing  
ADDRESS: 3299 E Hwy 412  
Siloam Springs, AR 72761  
CLIENT: GTS Inc.





This report includes information from the following map sheet(s).

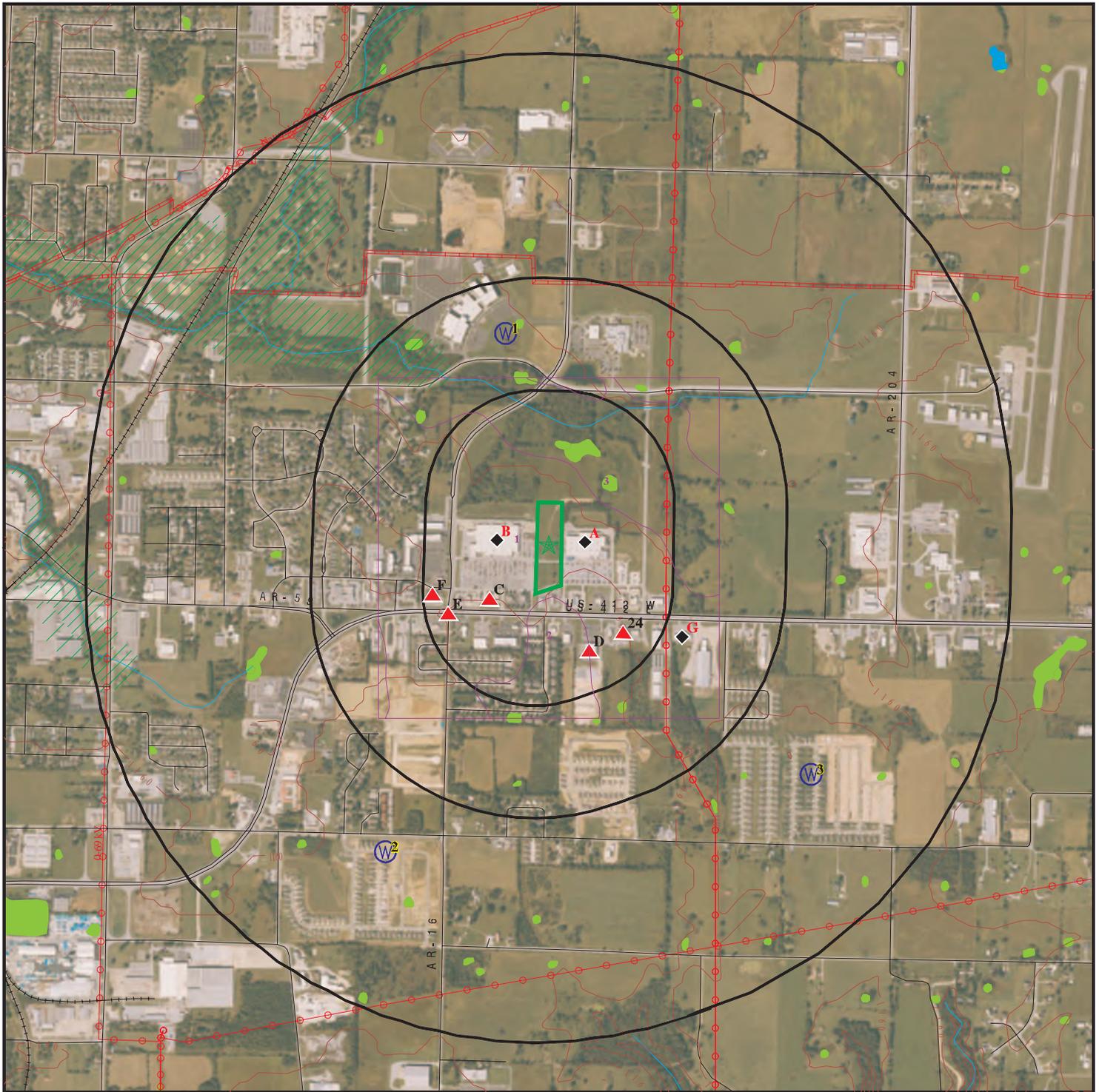


TP, Siloam Springs, 1899, 30-minute  
E, Fayetteville, 1899, 30-minute

SITE NAME: Siloam Crossing  
ADDRESS: 3299 E Hwy 412  
Siloam Springs, AR 72761  
CLIENT: GTS Inc.



# OVERVIEW MAP - 8139082.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

Pipelines

Special Flood Hazard Area (1%)

0.2% Annual Chance Flood Hazard

National Wetland Inventory

State Wetlands



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Siloam Crossing  
 ADDRESS: 3299 E Hwy 412  
 Siloam Springs AR 72761  
 LAT/LONG: 36.183201 / 94.51044

CLIENT: GTS Inc.  
 CONTACT: Michelle Parker  
 INQUIRY #: 8139082.2s  
 DATE: October 14, 2025 11:00 am

# DETAIL MAP - 8139082.2S



 Target Property

 Sites at elevations higher than or equal to the target property

 Sites at elevations lower than the target property

 Manufactured Gas Plants

 Sensitive Receptors

 National Priority List Sites

 Dept. Defense Sites

 Indian Reservations BIA

 Power transmission lines

 Special Flood Hazard Area (1%)

 0.2% Annual Chance Flood Hazard

 National Wetland Inventory

 State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Siloam Crossing  
 ADDRESS: 3299 E Hwy 412  
 Siloam Springs AR 72761  
 LAT/LONG: 36.183201 / 94.51044

CLIENT: GTS Inc.  
 CONTACT: Michelle Parker  
 INQUIRY #: 8139082.2s  
 DATE: October 14, 2025 11:01 am

## GEOCHECK<sup>®</sup> - PHYSICAL SETTING SOURCE ADDENDUM

### TARGET PROPERTY ADDRESS

SILOAM CROSSING  
3299 E HWY 412  
SILOAM SPRINGS, AR 72761

### TARGET PROPERTY COORDINATES

Latitude (North):	36.183201 - 36° 10' 59.52"
Longitude (West):	94.51044 - 94° 30' 37.58"
Universal Tranverse Mercator:	Zone 15
UTM X (Meters):	364175.1
UTM Y (Meters):	4005124.5
Elevation:	1154 ft. above sea level

### USGS TOPOGRAPHIC MAP

Target Property Map:	15504652 SILOAM SPRINGS, AR
Version Date:	2020

East Map:	15504642 GALLATIN, AR
Version Date:	2020

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

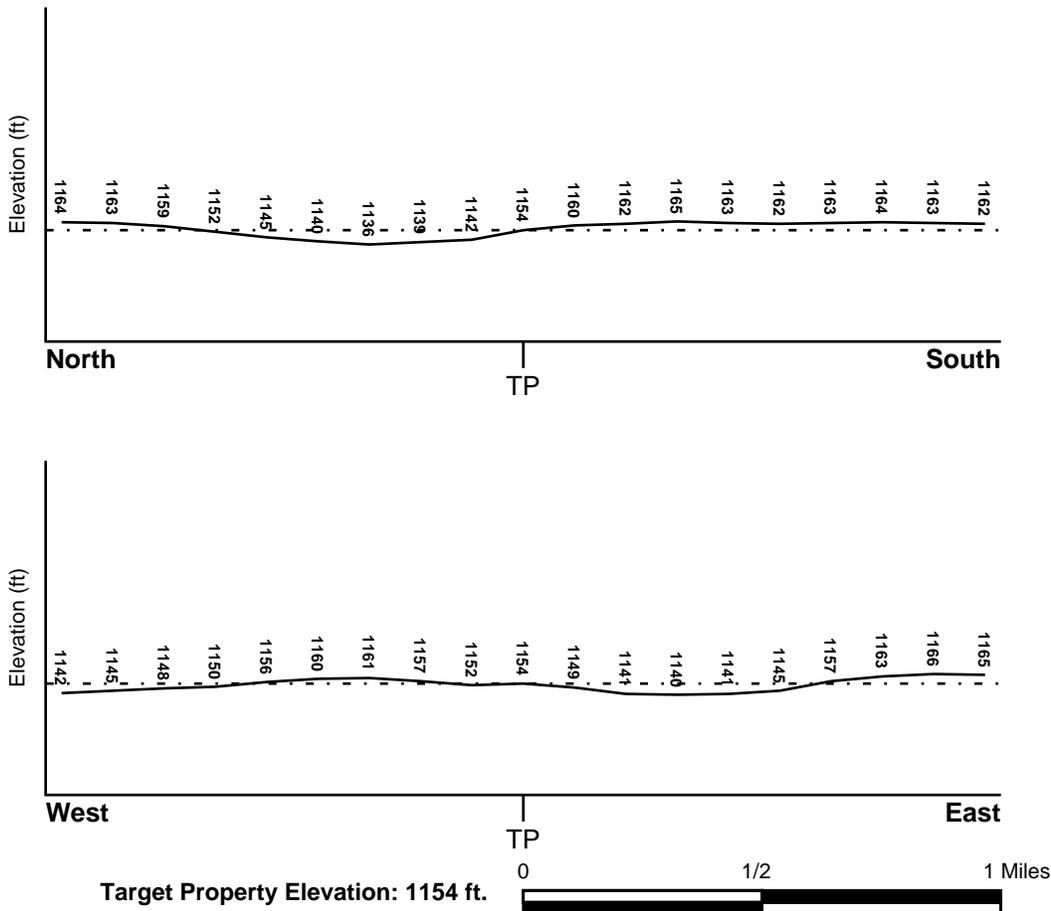
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

## SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

## **FEMA FLOOD ZONE**

<u>Flood Plain Panel at Target Property</u>	<u>FEMA Source Type</u>
40001C0075D	FEMA FIRM Flood data
<u>Additional Panels in search area:</u>	<u>FEMA Source Type</u>
05007C0380J	FEMA FIRM Flood data
05007C0390J	FEMA FIRM Flood data

## **NATIONAL WETLAND INVENTORY**

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

## **AQUIFLOW®**

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

### GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

### GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

#### **ROCK STRATIGRAPHIC UNIT**

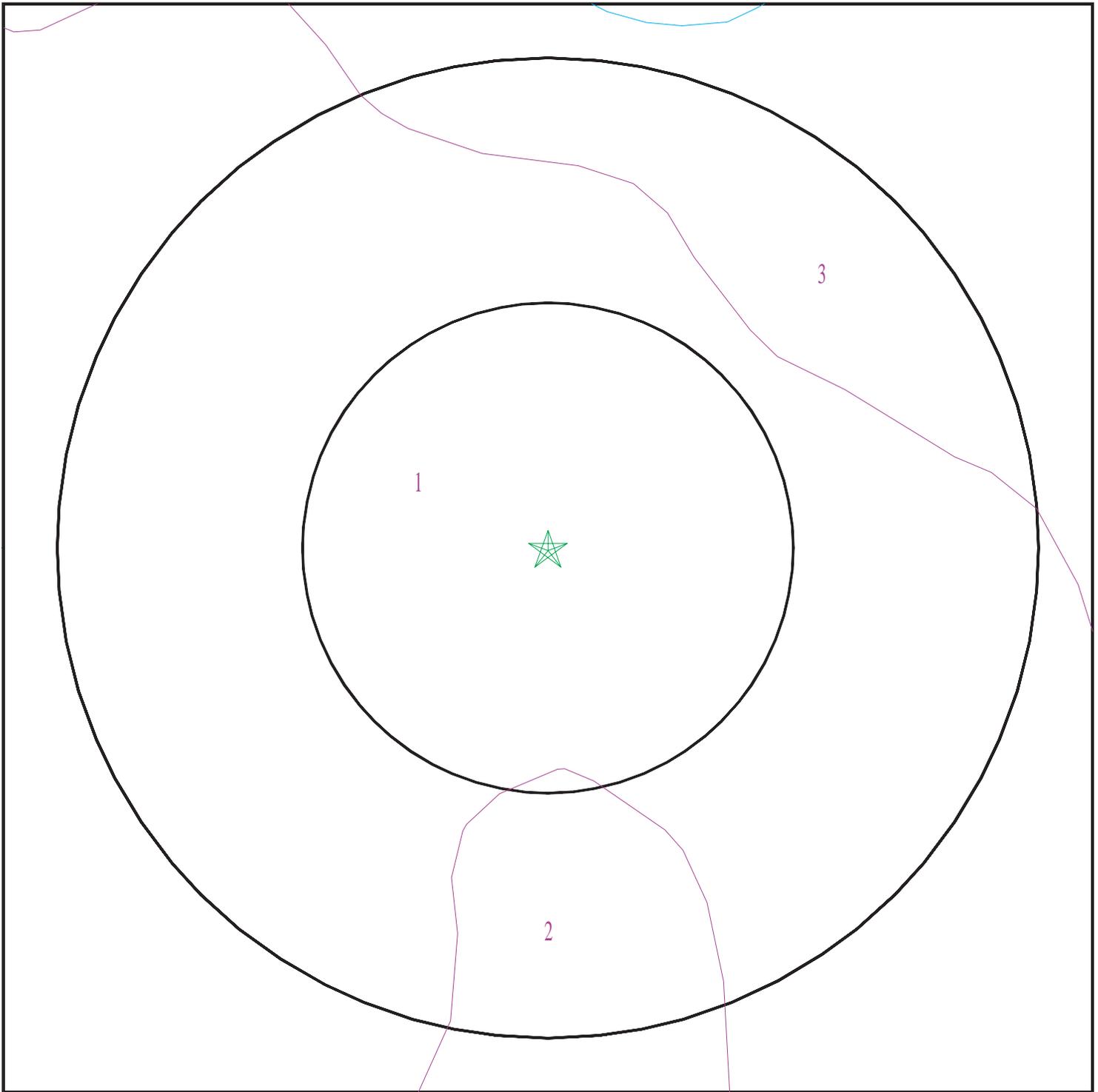
Era: Paleozoic  
System: Mississippian  
Series: Osagean and Kinderhookian Series  
Code: M1 (*decoded above as Era, System & Series*)

#### **GEOLOGIC AGE IDENTIFICATION**

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 8139082.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: Siloam Crossing  
ADDRESS: 3299 E Hwy 412  
Siloam Springs AR 72761  
LAT/LONG: 36.183201 / 94.51044

CLIENT: GTS Inc.  
CONTACT: Michelle Parker  
INQUIRY #: 8139082.2s  
DATE: October 14, 2025 11:01 am

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

### Soil Map ID: 1

Soil Component Name: Jay

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 61 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 1.4 Min: 0.42	Max: Min:
2	11 inches	22 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 1.4 Min: 0.42	Max: Min:
3	22 inches	35 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 1.4 Min: 0.42	Max: Min:
4	53 inches	61 inches	gravelly silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 1.4 Min: 0.42	Max: Min:

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
5	35 inches	53 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 1.4 Min: 0.42	Max: Min:
6	61 inches	79 inches	weathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 1.4 Min: 0.42	Max: Min:

### Soil Map ID: 2

Soil Component Name: Taloka

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 36 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	11 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 5.1

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
2	22 inches	35 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 5.1
3	11 inches	22 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 5.1
4	35 inches	72 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 5.1

### Soil Map ID: 3

Soil Component Name: Carytown

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 15 inches

## GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 5.6
2	9 inches	18 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 5.6
3	18 inches	79 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 8.4 Min: 5.6

### LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

### WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

### FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
1	USGS40000124596	1/4 - 1/2 Mile NNW

### FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

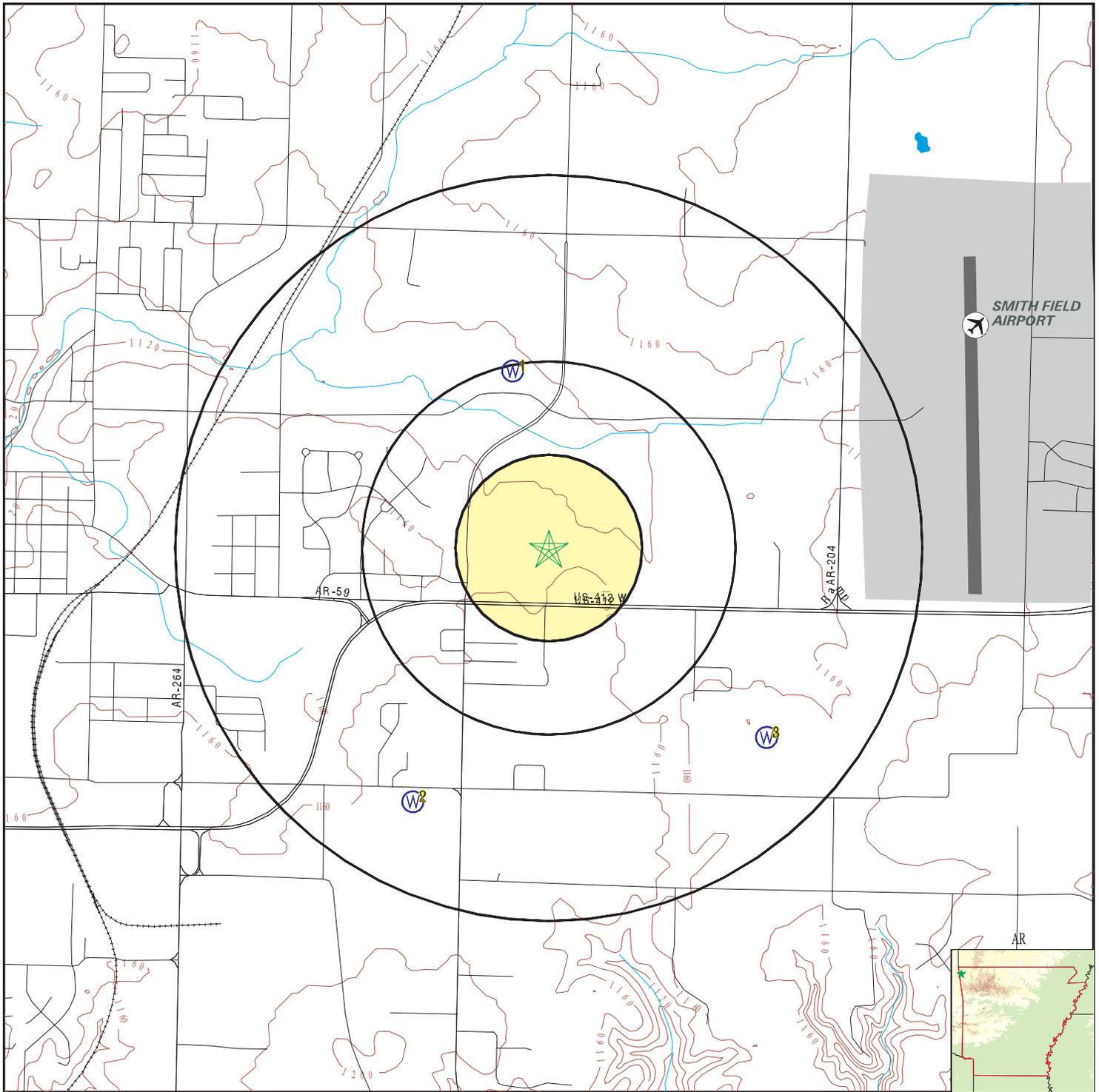
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

## STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	AR1000000044622	1/2 - 1 Mile SSW
3	AR1000000052968	1/2 - 1 Mile SE

# PHYSICAL SETTING SOURCE MAP - 8139082.2s



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

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells



**SITE NAME:** Siloam Crossing  
**ADDRESS:** 3299 E Hwy 412  
 Siloam Springs AR 72761  
**LAT/LONG:** 36.183201 / 94.51044

**CLIENT:** GTS Inc.  
**CONTACT:** Michelle Parker  
**INQUIRY #:** 8139082.2s  
**DATE:** October 14, 2025 11:01 am

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID  
Direction  
Distance  
Elevation

Database      EDR ID Number

**1**  
**NNW**  
**1/4 - 1/2 Mile**  
**Lower**      **FED USGS**      **USGS40000124596**

Organization ID:	USGS-AR	Organization Name:	USGS Arkansas Water Science Center
Monitor Location:	18N33W33CCB1	Type:	Well
Description:	Not Reported	HUC:	11110103
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Ozark Plateaus aquifer system	Aquifer Type:	Not Reported
Formation Type:	Not Reported	Well Depth:	2236
Construction Date:	19481024	Well Hole Depth:	Not Reported
Well Depth Units:	ft		
Well Hole Depth Units:	Not Reported		

**2**  
**SSW**  
**1/2 - 1 Mile**  
**Higher**      **AR WELLS**      **AR1000000044622**

Well id:	94310136102401	Original w:	943101361024
City and z:	BENTONVILLE AR 72712	County nam:	BENTON
Latitude:	36-10-24	Longitude:	94-31-01
Well statu:	Replacement	Depth:	1156
Date well:	19951012	Use code:	LV
Owner name:	HONEY CREEK PARTNERSHIP	Driller na:	DALE LETT
Remarks:	Not Reported	Site id:	AR1000000044622

**3**  
**SE**  
**1/2 - 1 Mile**  
**Lower**      **AR WELLS**      **AR1000000052968**

Well id:	94296036103301	Original w:	942960361033
City and z:	COLCORD, OK 74338	County nam:	BENTON
Latitude:	36-10-33	Longitude:	94-29-60
Well statu:	New Well	Depth:	460
Date well:	20100930	Use code:	DO
Owner name:	JUAN BARNES	Driller na:	LARRY CAIN
Remarks:	Not Reported	Site id:	AR1000000052968



Siloam Springs Golf Club

Siloam Sogs Regl Hospital

Target Property

Blue Squares Indicate Projects where borings were performed by GTS

Walmart Supercenter

Lowe's Home Improvement

Atwoods

E Main St

412

412

16

Jersey Mike's Subs

Cathy's Corner

E Kenwood St

Image © 2025 Airbus