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June 25, 2026

ECCI
13000 Cantrell Road
Little Rock, Arkansas 72223

CERTIFICATE OF AUTHORIZATION
McCLELLAND CONSULTING ENGINEERS, INC.
No. 24
ARKANSAS-ENGINEER

ATTN: Mr. Jimmy Rogers
Senior Environmental Scientist

RE: Geotechnical Report for
Clark County Development – CCIC McClellan Site
Clark County, Arkansas
MCE Project No.: **26-3834**

Dear Mr. Rogers:

We are submitting herewith the report for the Geotechnical Report on the above-referenced project. We appreciate the opportunity to provide this service to you. If there are any questions regarding the Geotechnical Investigation, please contact us.

Sincerely yours,

McCLELLAND CONSULTING ENGINEERS, INC.
DESIGNED TO SERVE

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 16434
STEVEN J. HEAD

Steven J. Head P.E.
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06/25/2026

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Associate | Geotechnical Supervisor | Project Manager

Enclosure: Geotechnical Report

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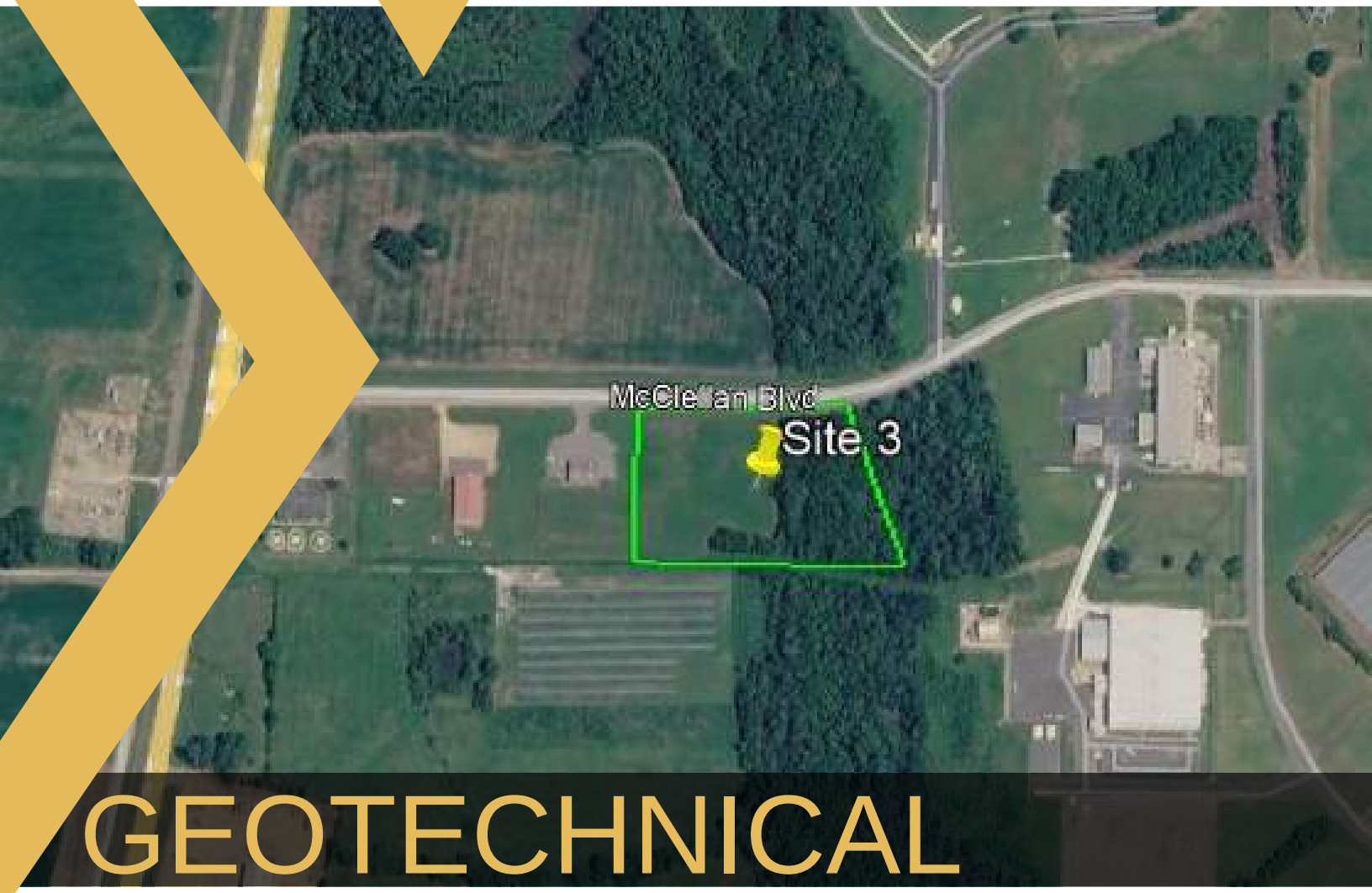

GEOTECHNICAL INVESTIGATION

Clark County Development -
CCIC McClellan Site

Project No. 26-3834
June, 2026

Prepared For:
ECCI
Mr. Jimmy Rogers
Senior Environmental Scientist
13000 Cantrell Road
Little Rock, Arkansas 72223

Preliminary Geotechnical Site Assessment

Clark County Development – CCIC McClellan Site

MCE Project Number: 26-3834

Clark County, Arkansas

FOR

ECCI
Little Rock, Arkansas

Executive Summary

This is a report of the findings of the Preliminary Geotechnical Site Assessment for the CCIC McClellan Site (MCE Site 3) on the Clark County Development project, located in Clark County, Arkansas. This report includes preliminary information on surface materials and subsurface conditions in addition to providing preliminary recommendations for site preparation, grading, structure foundations, and recommended minimum pavement sections. The significant findings listed below should not be used separately from the further discussion provided in the body of this report.

- This Preliminary Geotechnical Investigation consisted of a total of two (2) project borings. These borings were strategically placed across the site in an effort to provide preliminary Geotechnical Data for future planning and development.
- Auger Refusal Materials were not encountered within any of the project borings during this investigation.
- Perched groundwater was not encountered within any of the project borings during this investigation.
- Surface materials encountered during this investigation consisted of topsoil materials with thicknesses observed to be approximately eight (8) inches.
- The materials that make up Stratum II consist of Lean Clay with Sand (CL) and Fat Clay (CH).
- MCE recommends that the Contractor anticipates a minimum of eight (8) inches of initial stripping to be necessary across the site to remove any surface materials from the planned development area. Additional stripping up to 24 inches may be needed in order to remove any roots and organics from the areas around the existing trees.
- It is recommended that the project budget that stable subgrade materials for the placement of imported select fill materials generally exist at a depth of approximately two (2) feet below the existing surface elevations.
    - The “unsuitable” CH materials should remain a minimum of five (5) feet below the finished subgrade elevations or a minimum of three (3) feet below the foundation elements in order to mitigate the potential for excess shrink/swell characteristics due to the result of moisture content variations. If grades are raised this condition may be fulfilled based on the planned fill amounts.
- Foundation elements are **not** recommended to bear directly on in-situ materials, based on the shrink/swell and frost-heave characteristics of these soils, as well as low consistency materials encountered near the surface, as previously detailed.
- It is recommended that the foundation elements bearing on select fill placed properly above “suitable” native subgrade may utilize safe allowable bearing capacities of 2,300 per square foot (psf) for continuous footings and 2,500 psf for spread footings.
- Any select fill material planned or required for the project is recommended to be an off-site borrow material of locally available clayey or silty sand/gravel material meeting Unified Soils Classifications as an SC, SM, GC, or GM material and meeting the stipulations noted in *Section 10.11*.
- ***A Final Geotechnical Investigation will be required to verify the recommendations and considerations stated in this report. The recommendations presented herein are based on the preliminary information available at the time of preparing this report.***

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Tables

Appendices

1.0 Introduction

McClelland Consulting Engineers, Inc. (MCE) conducted a preliminary subsurface investigation for the proposed Clark County Development CCIC McClellan Site (MCE Site 3) located in Clark County, Arkansas. The investigation was requested and authorized by Mr. Jimmy Rogers, Senior Environmental Scientist with ECCI. This investigation was intended to explore the subsurface soil conditions within the planned development area to provide preliminary recommendations for site preparation, grading, structure foundations, and recommended minimum pavement sections.

2.0 Existing Site Description

The project site is comprised of one (1) Clark County parcel 01-05472-000, for a total area of approximately 4.5 acres. The site is located south of McClellan Boulevard in Clark County with access to McClellan Boulevard from the northern extents. The site is bound on the southwest and west by existing developments while the southeast and east portions of the property are bound by an undeveloped area of trees.

At the time of the on-site investigation, vegetation consisted of low to medium-cut grass, shrubs, and a large area of trees throughout the eastern portion of the site. Topographically, the site exhibits a rolling terrain with a general grade from the west down to the east with maximum grade differentials estimated to be on the order of nine (9) feet; based of the free digital elevation data provided by Google Earth.

3.0 Preliminary Project Scope

Due to the preliminary nature of the project, neither finalized nor conceptual plans pertaining to site layout, structure sizes, site grading, or structural loading conditions were available at the time of preparing this *Preliminary Geotechnical Site Assessment*. However, we anticipate that the project site is planned for commercial development. These structures are anticipated to range from single to two (2) stories in height and be constructed utilizing either light gauge steel or traditional wood framing. The recommendations provided in this report are with the anticipation that the future structures will range from light to moderately-loaded with maximum column and wall loads not in excess of 150 kips and two (2) kips per linear foot (klf), respectively. Structure height and loading parameters outside of those referenced would likely alter the preliminary recommendations provided by this report.

It is anticipated that the project pavement improvements may consist of access drives, parking areas, loading dock/bays, dumpster pads, and pedestrian walkways. As such, it is likely that both flexible asphalt and rigid concrete materials may be utilized.

4.0 Preliminary Field Investigation

Due to the preliminary nature of this future development, documents pertaining to a potential site layout and/or development features could not be provided. Therefore, MCE conducted a preliminary geotechnical site investigation consisting of two (2) total project borings spread across the planned development area aimed at collecting relevant subsurface data for preliminary recommendations across the entire site. All of the project borings had planned target depths of 20.0 feet below their existing surface elevations.

A boring layout is provided in Appendix A, and the boring logs can be referenced in Appendix B on Plates 2 through 3. A key to the symbols and descriptions utilized on the boring logs is presented in Appendix B on Plate 4.

All project borings were conducted using a Diedrich D-50 Track Rig, utilizing 4.5-inch diameter solid stem augers. Soil samples were obtained at the depths indicated on the boring logs with the use of a two (2) inch diameter split-spoon sampler. The split-spoon sampler was driven by blows from a 140-pound automatic hammer dropped from a fixed height of 30 inches. The number of blows required to drive the split-spoon sampler the final 12 inches of an 18-inch drive, or portion thereof, is referred to as the Standard Penetration value, N, and is recorded on the boring logs in units of blows-per-foot. Final drilled depths are shown as the depths achieved by the split-spoon sampler.

In addition to Standard Penetration Testing (SPT), the field tests performed included visual soil classifications and groundwater observations. Table 1 below provides details for each project boring.

Table 1: Project Boring Details

Boring ID	Existing Surface Elevations (ft)	Surface Material and Thickness (inches)	Groundwater Depth (ft)	Total Depth Investigated (ft)	End of Boring Elevation (ft)
S3B1	231	Topsoil (8”)	N/A	20	211
S3B2	227	Topsoil (8”)	N/A	20	207

NOTES: Surface Elevations shown in Table 1 are rounded to the nearest one (1) foot and are based on the Google Earth Elevation Data. Reported thicknesses of the surface materials are rounded to the nearest one (1) inch.

4.1 Encountered Groundwater Conditions

Groundwater was not encountered by any of the project borings during this investigation. Installation and periodic measurement of monitoring wells would be required to establish seasonal piezometric surfaces below the project site. Project grading should be designed to properly discharge any surface water that may develop following precipitation events.

Any groundwater or perched water, if encountered during construction, must be removed prior to the placement of fill or construction materials. To help reduce the potential for issues related to perched groundwater, it is recommended that earthwork operations take place during typically drier portions of the calendar year (June through September). Earthwork operations conducted outside of this recommended timeframe should expect general dewatering measures to be required to maintain a desirable construction schedule.

4.2 Encountered Auger Refusal Materials

Auger Refusal materials are generally defined as those that, when encountered, the boring can no longer be advanced using traditional auger drilling techniques. Refusal is somewhat subjective and is dependent on the type of drilling equipment used and the down pressures exerted by the drill rig.

At the time of this preliminary investigation, materials resulting in auger refusal were not encountered within any of the two (2) boring locations. Additional information pertaining to the local geology and how it affects the project site can be found in the *Local Geology of the Project Site* section of this report (*Section 7.0*).

5.0 Laboratory Analysis

Laboratory tests were performed on the samples recovered from the borings. The laboratory tests were conducted to determine the engineering properties of the project soil strata. The tests performed on samples from the borings included moisture content, Atterberg Limits, and sieve analyses.

The results of the laboratory testing for the project borings are provided on the boring logs and in the Laboratory Testing Results, found in Appendix C. Table 2 below shows the relevant test method specifications utilized on the project.

Table 2: Laboratory Test Method Specifications

Test Designation	Test Method
ASTM D2488	Standard Practice for Description and Identification of Soils (Visual)
ASTM D2487	Standard Practice for Classification of Soils for Engineering Purpose (USCS)
ASTM D2216	Standard Test Method for Lab Determination of Water Content of Soil
ASTM D6913	Standard Test Method for Particle-Size Distribution of Soils Using Sieve Analysis
ASTM D4318	Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

6.0 On-Site Soil Conditions

The following project sections provide information regarding onsite conditions at the project location. This information includes descriptions of the existing soil types, imagery showing the approximate location of the existing soil types, and details about the local geology.

6.1 United States Department of Agriculture (USDA) Soil Types and Map

The following soil types exist in the project area according to current USDA soil maps, with descriptions from the Natural Resources Conservation Service (NRCS). The project site is located in Clark County in southern Arkansas. The existing soil types are briefly detailed in Table 3 below.

Table 3: USDA Local Soil Types

USDA Soil Type	USDA Symbol	USDA Descriptions
Houston Clay	28	The Houston series consists of very deep and moderately well-drained soils. These soils formed from clayey marl derived from chalk. These soils are on upland flats, stream terraces, and in depressions. Slopes are between three (3) to eight (8) percent.
Terouge Silty Clay	82	The Terouge series consists of very deep and somewhat poorly drained soils that formed from clayey alluvium. These soils are on blackland prairie fluvial terraces. Slopes are between one (1) to three (3) percent.

Figure 1 below provides imagery of the approximate site location and how it relates to the existing soil types.

Figure 1: USDA Soil Survey Report Image
The image was produced by the United States Department of Agriculture.
The red outline represents the approximate extent of the project site.

7.0 Local Geology of the Project Site

According to maps and literature published by the United States Geological Survey (USGS) and the Arkansas Geological Survey (AGS), the project site is underlain by materials indicative of Cretaceous Aged Arkadelphia Marl. A brief description from the Stratigraphic Summary of Arkansas – Information Circular 36 (IC36) of the local geologic formation is provided below, as well as how these materials may impact the project site.

7.1 The Arkadelphia Marl Formation

The Arkadelphia Marl is mainly composed of dark gray to black marl or clay-rich sediment. It also contains some lime, gray sandstone, sandy clay, sandy limestone, concretionary limestone, and chalk that ranges from white to light brown and is somewhat impure. The sandy marls and limestones are typically found near the bottom of the formation, while the impure chalk occurs closer to the top. The layers that Hill originally used to define “Arkadelphia” are no longer included in this unit. Fossils found in the formation include corals, bivalves, gastropods, cephalopods, shark teeth, and various microfossils. The Arkadelphia Marl rests slightly unconformably on the Nacatoch Sand. The formation is about 120 to 160 feet thick.

Figure 2 below provides a visual of the local geologic formation in relation to the project site.

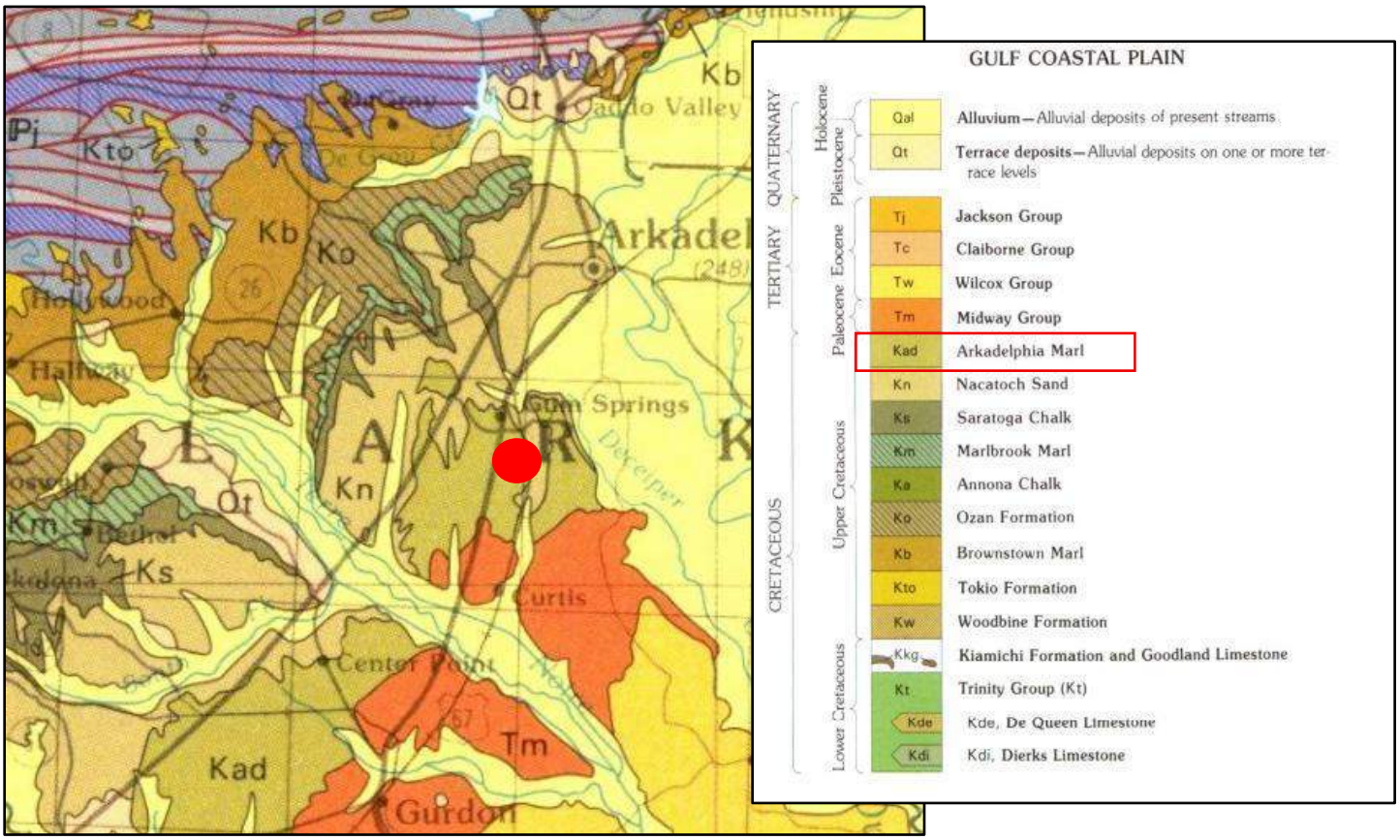

Figure 2: Image from the Geologic Map of Arkansas (1993)
The red dot represents the approximate location of the project site.

8.0 IBC Site Classification

Due to the preliminary nature of the project, it is not possible to assign a general Risk Category to any planned development features. However, based on the information gathered during this Preliminary Site Assessment, and for the purposes of planning and budgeting, it is anticipated that the seismic site classification for each planned structure will utilize a Site Class D for the soil profile. This is common for the project area, although isolated areas with Site Class C or Site Class E soil profiles are known to exist.

Further Geotechnical Data on each planned structure and development feature would be required to provide a final Risk Category, site specific site classification, site specific seismic site classification, and spectral response acceleration values in accordance with the 2021 International Building Code (IBC).

9.0 On-Site Soil Stratum Summary

This summary is based on a collection of field notes and field-testing values recorded during the investigation, notes recorded during the lab analysis, and results from the laboratory testing. The encountered subsurface soil conditions are summarized below.

9.1 Stratum I – Surface Materials

The surface materials across the site consisted of grass and topsoil. The encountered topsoil was observed to have a thickness of approximately eight (8) inches. These thicknesses are only relative to the explored boring locations and may vary across the unexplored portions of the project site. MCE anticipates that roots associated with the trees may exist at deeper depths than those measured for topsoil. This anticipation is based on the maturity and size of the existing trees within the project site.

9.2 Stratum II – Fine-Grained Subgrade Materials

The materials that make up Stratum II consist Lean Clay with Sand (CL) and Fat Clay (CH). These materials were generally encountered in various shades of brown and grayish-brown and contained varying gradations of gravel, sand, and fines.

Table 4 below organizes the consistency, moisture content, and plasticity properties of the Stratum II soils.

Table 4: Stratum II Materials – Classification Data

Property	Stratum II – CL Materials	Stratum II – CH Materials
Consistency Values	Medium Stiff to Stiff	Stiff to Very Stiff
N-Values	Six (6) to 10	Seven (7) to 19
Natural Soil Moisture Content (%)	24.2 to 33.8	26.8 to 36.6
Liquid Limit (LL)	-	83 to 87
Plasticity Index (PI)	-	62 to 64
Plasticity Characteristics	Low to Moderate	Moderate to High
Fine Fraction of Total Mass (%)	-	96
Volumetric Change Potential	Low to Moderate Due to Moisture Content Variation	High Potential Due to Moisture Content Variation

Figure 3 on the following page provides a visual of the Stratum II materials encountered during this investigation.

Figure 3: Stratum II Materials
Left: S3B1 / S-2 (CL Materials)
Right: S3B2 / S-6 (CH Materials)

10.0 Preliminary Analysis and Recommendations

Due to the preliminary nature of this investigation, the final project scope of work was not available at the time of preparing this report. However, we anticipate that the project site is planned for commercial development. These structures are anticipated to range from single to two (2) stories in height and be constructed utilizing either light gauge steel or traditional wood framing.

Additional developments across the site are anticipated to include assorted pavement and civil site improvements. The pavement improvements are anticipated to include access drives, parking areas, loading dock/bays, dumpster pads, and pedestrian walkways. As such, it is likely that both flexible asphalt and rigid concrete materials will be utilized.

The purpose of this investigation was to obtain adequate subsurface information from which to provide preliminary recommendations and considerations for the planned structures and associated pavement improvements; presented in the following sub-sections of this report.

The recommendations and considerations contained herein should be considered preliminary and are not to be considered as "Construction-Quality". It is recommended that a Final Geotechnical Investigation take place for any planned development features (structures, pavements, etc.).

10.1 Initial Site Preparation

As previously described in the Stratum I summary (*Section 9.1*), the project borings encountered topsoil materials at the surface of the investigated areas. The topsoil materials across the project site can generally be expected to extend to a depth of eight (8) inches below surface elevations.

It is anticipated that a majority of the existing greenspaces across the project site have similar topsoil thicknesses as those noted in the project boring locations. However, roots surrounding mature trees are likely to extend to depths of two (2) feet or greater. These conditions should be verified through a Final Geotechnical Investigation.

MCE recommends that all Stratum I surface materials, as well as all organics and otherwise deleterious materials, be removed full-depth as part of the initial site preparation. At the time of preparing this Preliminary Site Assessment, MCE recommends that a minimum depth of eight (8) inches is budgeted for the adequate removal of surface materials across the project site.

10.2 Preliminary Site Grading Considerations

Project grading plans were not available at the time of preparing this report; as such, anticipations and considerations contained herein estimate that final site grades will be near the existing elevations. For the purposes of this report, "suitable" materials refer to subgrade materials that MCE believes will pass proof rolling operations in their current state and/or will be adequately stable for the subsequent placement of select fill materials.

Highly expansive soils (Stratum II - Fat Clay (CH)) materials were encountered within all project borings (S3B1 and S3B2) at depths ranging from 2.5 to 20 feet below the existing surface elevations. As depths increased, these materials were noted to generally increase in consistency from stiff to very stiff.

The plasticity characteristics of these materials have the potential to lead to structural defects in the future if unmitigated by select fill materials or other means. As such, these materials are not recommended for the direct placement of foundation elements, but may in suitable condition for the placement of select fill below the structure footings. Materials recommended to be in suitable condition by the Geotechnical Engineer of his/her representative should be exposed prior to the placement of select fill or other construction materials. Further details pertaining to this verification process are provided in *Section 10.3* of this report.

Additional care should be taken by the Contractor to prevent saturation of the subgrade soils, as these materials are known to lose significant strength following increased moisture conditions. This can be achieved by providing positive drainage during construction and covering with select fill materials soon after excavation, if applicable. The on-site subgrade soils will be especially susceptible to reduced shear strengths if construction occurs during historically wet portions of the calendar year, generally occurring between October and May.

The anticipated depths and elevations to the suitable subgrade materials described herein are based on the conditions encountered at the time of this investigation and may vary based on site conditions at the time of construction. It is recommended that MCE be allowed the opportunity to revise these preliminary recommendations when the final site grading and structural plans are made available. Additionally, MCE would request the opportunity to prepare a *Construction Quality* geotechnical scope of work once additional information pertaining to the development are known.

10.2.1 Site Grading Considerations – Excavated Slopes/Vertical Trenching

Excavations should be performed in accordance with the requirements outlined by the Occupational Safety and Health Administration (OSHA) 1926 – Subpart P – Appendix B. Excavated slopes during construction with depths less than 20 feet should be benched or sloped to provide the minimum horizontal-to-vertical (H:V) ratios as noted in Table 5 below.

Table 5: Temporary Slopes During Construction

On-site Soil Stratum	Material Description	OSHA Soil Type	Maximum Allowable Slopes (H:V)
Stratum II	Fine Grained Subgrade Materials	Type C	1 1/2:1 (34°)

Note: OSHA Soil Type assignments should be considered preliminary and should be verified at the time of construction, if applicable, by an OSHA-competent person.
Prolonged exposure of Stratum II materials to the environment and/or increased moisture conditions may require additional shoring measures.

Sloping or benching of excavations greater than 20 feet deep shall be designed by a licensed Professional Engineer (PE) prior to excavation. Construction slopes steeper than recommended may be unstable, particularly when introduced to moisture increases during precipitation events.

If excavation efforts require deep vertical trenching (deeper than five (5) feet), and the minimum allowable slope ratio is not achievable, then the Contractor must establish a comprehensive Shoring Plan. That Shoring Plan should be reviewed and stamped by a license PE prior to excavation.

10.3 Subgrade Verification Method

Following stripping and initial grading, site pavement and structure subgrade areas should be initially evaluated by the Geotechnical Engineer or his/her representative. All subgrade materials should be proof-rolled with a tandem-axle fully-loaded dump truck weighing approximately 60,000 pounds, or equivalent construction equipment.

The proof-rolling should be observed by the Geotechnical Engineer or his/her representative to verify and document stable subgrade conditions. Alternate means of subgrade verification may be conducted should proof rolling not be feasible within undercut dimensions. The implemented means of verification should be under the direction of the Geotechnical Engineer.

Any soft and/or yielding subgrade areas encountered should be repaired by undercutting and backfilling with select fill material. These materials should then be subsequently evaluated by the Geotechnical Engineer or his/her representative for approval.

It is highly recommended that the project pavements and structure footprints are evaluated immediately following initial site stripping and grading to reduce unnecessary undercut.

10.4 General Foundation Recommendations

The foundations relevant to the planned structure should be sized to meet three (3) conditions:

- Bearing Capacity (Ultimate & Allowable)
  The maximum stresses imposed on the foundation strata should not exceed the allowable bearing pressures as determined by the shear strength properties of the in-situ soils. The allowable bearing pressures outlined in this report incorporate an appropriate factor of safety against general shear failure.
- Settlement & Serviceability Limits
  The design of the foundation system must limit both total and differential settlement to magnitudes that will neither damage nor impair the use of the structure.
- Lateral Stability & Seismic Resilience
  The foundation system must provide sufficient resistance to lateral and overturning forces under the most critical load conditions, including earthquake loadings.

These factors, as well as construction considerations related to the existing soil and ground conditions, were influential in the preparation of the recommendations presented hereinafter.

10.5 Preliminary Shallow Foundation Recommendations

At the time of drafting this Preliminary Site Assessment, it is anticipated that lightly- to moderately-loaded structures constructed of light gauge steel or timber framing will be part of the project development features. It will likely be feasible for these structures to be constructed utilizing a shallow foundation system composed of continuous and individual (spread) footings bearing on imported select fill materials.

We anticipate stable subgrade materials that allow for the placement of select fill materials exist at an approximate depth of 2.5 feet below the existing surface elevations. However, the “unsuitable” CH materials encountered during this investigation should remain a minimum of five (5) feet below the finished subgrade elevations or a minimum of three (3) feet below the bottom of foundation elements, whichever is greater in order to mitigate the potential for excess shrink/swell characteristics due to the result of moisture content variations. If grades are raised this condition may be fulfilled based on the planned fill amounts.

The suitability of the in-situ materials should be verified at the time of construction based on the results of proof-rolling operations, as outlined in *Section 10.3*. It is highly recommended that these subgrade verification operations take place immediately following initial stripping and grading to help eliminate unnecessary undercut operations.

Foundation elements are not recommended to bear directly on in-situ materials, based on the shrink/swell and frost-heave characteristics of these soils, as previously detailed.

It is recommended that the foundation elements bearing on properly placed select fill bearing on “suitable” native subgrade may utilize safe allowable bearing capacities of 2,300 per square foot (psf) for continuous footings and 2,500 psf for spread footings.

The allowable bearing capacities provide a minimum factor of safety of three (3) and were calculated using a minimum footing width of two (2) feet, a minimum footing thickness of one (1) foot, and a minimum footing depth of two (2) feet below exterior ground elevations, which is adequate to protect against frost heave in the project area.

The total long-term foundation settlement for footings bearing on properly placed select fill material with the assumed dimensions and loading is anticipated to be approximately one (1) inch. The maximum differential settlement between individual footings or along a 40-foot span for continuous footings is anticipated to be on the order of ½-inch between individual footings. **These values may be drastically increased if proper mitigation of the encountered CH soils is not carried out as described above.**

The structure foundations should be equipped with a perimeter drain system, which provides positive drainage away from the site structure elements. If positive drainage cannot be accomplished, it is recommended that a sump pump be utilized in order to ensure that the water drains away from the structure foundation dimensions. Seasonal variations in subgrade moisture conditions could induce shrink/swell potential from the on-site clays that are beyond the recommended tolerances for the project structures.

Should higher allowable bearing capacity values than those allowed by this report be required, it is recommended that ground improvement methods be discussed to provide additional capacity. Alternatively, a geogrid and aggregate section, such as a load-transfer platform (LTP) may be sufficient at providing additional capacity as well. Further coordination should occur with the Project Team prior to if these alternative systems are needed.

A Final Geotechnical Investigation is necessary to determine the recommended and necessary foundation systems for each of the planned structures. The information provided in this section is for the consideration of the project Design Team based on the information available at the time of preparing this report.

10.6 Preliminary Foundation Recommendations – Engineered Aggregate Pier

In the event that the provided allowable bearing capacities are inadequate for the support of the planned structure loading across certain elements of the project, it is recommended that the Design Team consider the use of an engineered aggregate pier (EAP) system to improve the in-situ subgrade materials and increase the recommended allowable bearing capacities. An EAP system is preliminarily recommended to be utilized if bearing capacities greater than 3,000 psf are required for the structure.

Further, this system could be considered as a means to reduce the size of foundation elements, which can become a cost-saving measure to projects in certain situations. The EAP system could also be incorporated into an LTP to further assist with transition of bearing conditions and mitigation of expansive soils, depending on final loading and grading conditions.

MCE anticipates that EAPs may provide adequate foundation and could offer potential cost savings when compared to alternative deep foundation systems such as drilled piers. The recommendation for the EAP system would be aimed at improving the subgrade capacity and conditions within the structure footprint by their installation. The implementation of the EAP system can improve the bearing capacity of otherwise unsuitable subgrade materials so that conventional shallow foundations may be utilized and also reduce the settlement potential for the subgrade soils. The piers are typically constructed by drilling 24 to 30-inch diameter holes to planned terminal depths and backfilling the holes with compacted aggregate, though hole diameters may vary. Compaction consolidates the aggregate column and increases lateral stress in the soil matrix.

The installation of an EAP system is typically more economical and efficient than other deep foundation options, which require achieving a more competent bearing stratum at deeper elevations, with added material costs. It is anticipated that the EAP installation will occur after pad construction (generally three (3) feet of moisture-conditioned and properly compacted select fill material) within the relevant building areas. EAPs may also be required for stabilization beneath any additional site retaining structures, if applicable.

As previously noted, it is anticipated that a minimum of three (3) feet of select fill material will be required to be placed within the structure footprint to provide a stable working platform and under-slab area.

10.7 Preliminary Structure Slab-on-Grade

Slab-on-grade construction may be utilized for the planned structures provided a minimum of four (4)-inch cushion of sand, crushed stone, or gravel is placed below the slab areas with a vapor barrier directly below the concrete. It is recommended that a minimum of four (4) feet of select fill material is properly placed beneath the slab dimensions to provide adequate subgrade support and stable under-slab conditions.

The entirety of the slab subgrade area is recommended to be verified during construction by proof-rolling or other approved means.

10.8 Preliminary Lateral Earth Pressures

Any earth-retaining structures implemented on the project should be designed to resist the minimum equivalent fluid weights provided in Table 6 below. These values are preliminary and should be re-evaluated at the time of the Final Geotechnical Investigation, based on the final site plans. The recommended minimum factor of safety against sliding and overturning is 1.5 and 2.0, respectively. The lateral earth pressures provided in Table 6 assume a drained condition for the backfill material.

To achieve a drained condition, any retaining structures should be backfilled using a free-draining granular material and provided thru-wall drains or a gravity trench drain system graded to daylight for the release of any hydrostatic pressure that may develop. Alternative means of drainage may be required if daylighting is not an option, those alternate means would need to be discussed and approved by the Design Team.

The values provided in Table 6 below for No. 57 or No. 67 crushed stone gravel assume a 1H:1V maximum backfill slope from the heel of the retaining wall foundation. If a vertical “chimney drained” is provided by the No. 57 or No. 67 stone, then the values for on-site soils should be used based on proximity and relevancy to the material behind the gravel.

Table 6: Estimated Lateral Earth Pressures – Drained Condition

Soil/Backfill Type	Moist Unit Weight (lbs/ft^3)	Friction Angle φ (^{0})	Equivalent Fluid Pressure (lbs/ft^3)		
			Active	Passive	At-Rest
Onsite Soils Stratum II (CL)	120	20	59	245	79
Onsite Soils Stratum II (CH)	130	25	53	320	75
Select Fill Material (GC, GM, or SC)	120	25	49	296	69
No. 57 or No. 67 Stone	100	35	27	369	43

A coefficient of friction of 0.40 may be used provided the retaining structure is supported on a minimum of four (4) inches of planned and compacted Class 7 Base Course material. A friction value of 0.35 may be used provided the retaining structures are supported directly on select fill material or on-site soils.

Should below-grade retaining structures be implemented in a manner in which daylighting is not possible, it is recommended that further coordination occurs to ensure that proper lateral earth pressure recommendations are provided utilizing an undrained condition for the planned backfill.

10.9 Preliminary Project Pavement Recommendations

Site grading for the planned project pavement areas should initially consist of stripping all Stratum I materials. Subgrade preparation and proof-rolling should follow the same procedure as described in the *Subgrade Verification* section of this report. Based on the data obtained from this preliminary investigation, stable materials for planned parking and access drives are generally anticipated to exist in the upper 2.5 feet below the existing surface elevations.

It is recommended that project pavement sections bear on stable imported select fill materials. For the purposes of planning and budgeting, it is recommended that the Design Team plan for the placement of a minimum of two (2) feet of imported select fill materials to be placed beneath the project pavement areas.

Thickened lifts or "bridging" lifts could be highly beneficial to stabilize project pavement areas, but should only be implemented under the direction of the Geotechnical Engineer. The top eight (8) inches of any thickened lift should be compacted and tested per project specifications. A minimum of one (1) standard lift should be placed above any thickened lift utilized beneath pavement areas.

Select fill and base course material should be placed per the requirements provided in *Section 10.11* of this report. **Bridging lifts should not be utilized beneath any structure-related elements.**

As with the future project structures, it is highly recommended that a Final Geotechnical Investigation take place for any planned pavement improvement area to provide specific up-to-date Geotechnical Recommendations for the pavement improvements.

10.9.1 Preliminary Lime Treated Stabilization Recommendations

This recommendation is based on the assumption that finished grades will remain at or near the existing surface elevations. Should planned "cuts" of greater than two (2) feet occur across the pavement areas, then lime stabilization of the subgrade materials will likely not be an effective method of subgrade remediation.

This option should only be utilized where moisture-sensitive clay materials are present at the surface during construction, native or placed select fill; lime treatment is not to be used where silt materials are present.

In the scenario where lime treatment is appropriate, once the finished subgrade (FSG) has been established in the dimensions of the specific pavement features, whether through stripping/cutting or through the placement of select fill material, MCE recommends that the subgrade materials be stabilized by the addition of lime to the upper 12 inches of clayey FSG materials.

For budgetary purposes, the Contractor should assume that the application is at a rate of six (6) percent by dry soil unit weight, approximately 40 pounds per square yard (SY). This rate could be determined during a Final Geotechnical Investigation.

The Contractor should submit their planned lime treatment for review and approval of the Geotechnical Engineer at the time of construction, as well as to allow for the appropriate proctor and California Bearing Ratio (CBR) testing to confirm that the values presented herein remain consistent with the materials utilized during construction.

The lime-treated subgrade should be compacted to a minimum density of 95% of the Standard Proctor Value (in accordance with ASTM D698) and be within two (2) percent above the optimum moisture content. The stability of the material should be verified after proper curing, whether by proof-rolling or other applicable means. As noted, the appropriate proctor and CBR testing should be conducted for the lime stabilized materials planned for use on this project.

It should be noted that lime should not be applied unless the air temperature is 40ºF and above. Lime shall not be applied on frozen soils, or on soils that contain frost; additionally, the completed lime-treated areas should be protected from freezing.

As such, a general recommendation would be that lime treatment should not be planned or relied upon between the months of November and February. Ideally, project earthwork operations involving lime treatment will not occur during that timeframe.

This recommendation is a preliminary expectation based on the soils encountered during this investigation.

10.9.2 Preliminary Geogrid Stabilization Recommendations

Geogrid stabilization is recommended as a complimentary option to lime stabilization measures to be evaluated by the Design Team for consideration related to cost and constructability within the project pavement areas. Circumstances that would likely warrant this stabilization method includes areas where groundwater is encountered or areas requiring undercut on the order of two (2) feet or greater to stabilize.

For preliminary consideration within pavement areas, the Geogrid and aggregate section is anticipated to require the use of a "single-mat system", utilizing (starting from bearing on in-situ subgrade materials) one (1) layer of Tensar NX750 Geogrid (or approved equivalent), followed by 12-inches of coarse aggregate.

For planning and budgeting purposes, this coarse aggregate section should be considered separate from the base course within the minimum recommended pavement section. In some instances, this section may be incorporated into the overall pavement section; however, further coordination should be had on a case-by-case basis with the project Design Team if it is to be considered for construction.

Installation of the Geogrid should follow the manufacturer's specified instructions. Final direction regarding the placement of the Geogrid sections should be provided by the Geotechnical Engineer based on site conditions at the time of construction.

10.10 Preliminary Pavement Section Recommendations

The preliminary pavement recommendations provided in this section are based on stable subgrade material and/or select fill material existing beneath the recommended pavement sections. This requirement would be provided by proper placement of approved select fill material and/or stable onsite material being verified by proof-rolling within the pavement subgrade dimensions. Minimum pavement sections are recommended to be as shown in Table 7 below.

For the recommendations provided in Table 7, standard-duty pavements are considered to be those pavements with low-volume traffic areas such as pedestrian sidewalks, parking, staging areas, and areas primarily subjected to passenger vehicles.

The standard-duty pavements are recommended as performing similarly to a typical city street pavement section with a residential classification. Heavy-duty pavement recommendations are intended to apply to areas subjected to frequent heavy-truck traffic, like dumpster pads.

Table 7: Minimum Project Pavement Sections

Pavement Type	Pavement Materials	Light Duty	Standard Duty	Heavy Duty
Asphalt Pavement	ACHM Surface Course (1/2")	2"	3"	2"
	ACHM Binder Course (1")	N/A	N/A	3"
	Class 7 Base Course (95% MPD)	6"	8"	8"
Concrete Pavement	Portland Cement Concrete	4"	6"	8"
	Class 7 Base Course (95% MPD)	6"	8"	8"

The pavement sections provided in Table 8 should be viewed as minimums and should be confirmed as a result of the Final Geotechnical Investigation.

10.11 Select Fill Materials

Select fill for this project should consist of locally available silty or clayey chert gravel, or clayey sand and must be free of organics. Approved materials must conform to the Unified Soil Classification System (USCS) as GM, GC, or SC materials and meet the following physical criteria:

- Plasticity Index (PI): 35 or less
- Liquid Limit (LL): 55 or less
- Gradation: Minimum of 30% retained on the ¾-inch sieve; maximum of 35% passing the No. 200 sieve.

Some variance of the material requirements listed above may be considered at the discretion of the Geotechnical Engineer. Any material to be used as select fill on the project should be reviewed and approved by the Geotechnical Engineer.

All fill and backfill should be placed in horizontal lifts not exceeding eight (8) inches compacted. When placing fill next to existing slopes, the slope face should be stripped of all vegetation and the face "benched" to allow the placement of the horizontal lifts and bonding to the slope face. Table 8 on the following page provides the recommended compaction parameters for select fill and Class 7 base course to be used on the project.

Table 8: Compaction Requirements

Material Type	Test Standard	Minimum Dry Density (%)	Optimum Moisture Range (%)
Select Fill	ASTM D698 / AASHTO T99	98	-3% to +3%
Base Course	ASTM D1557 / AASHTO T180	95	Near Optimum

11.0 Construction Materials Testing and Special Inspections

Construction materials testing and special inspection services are to be provided by MCE to provide consistency with the recommendations in the final Geotechnical Report and the documentation of final recommendations being implemented during construction. Testing of the earthwork, concrete, paving, structure, and other phases is recommended to be conducted and documented during construction to assure the Owner and Engineer that the construction complies with the specifications. In particular, field verification of earthwork operations will be required to confirm final recommendations. Additionally, all trenching and excavations should be conducted following the current Arkansas State Law and Occupational Safety and Health Administration (OSHA) guidelines and requirements.

12.0 Limitations and Reserved Rights

The preliminary recommendations and conclusions made in this report are based on the assumption that the subsoil conditions do not deviate appreciably from those disclosed in the subsurface exploration and that a Final Geotechnical Investigation will be conducted at a later date. Following the Final Geotechnical Investigation, the recommendations provided by this report should be considered insufficient, owing to the new subsurface data. A review of the final construction plans and specifications by this office is encouraged to ensure compliance with the intent of these recommendations.

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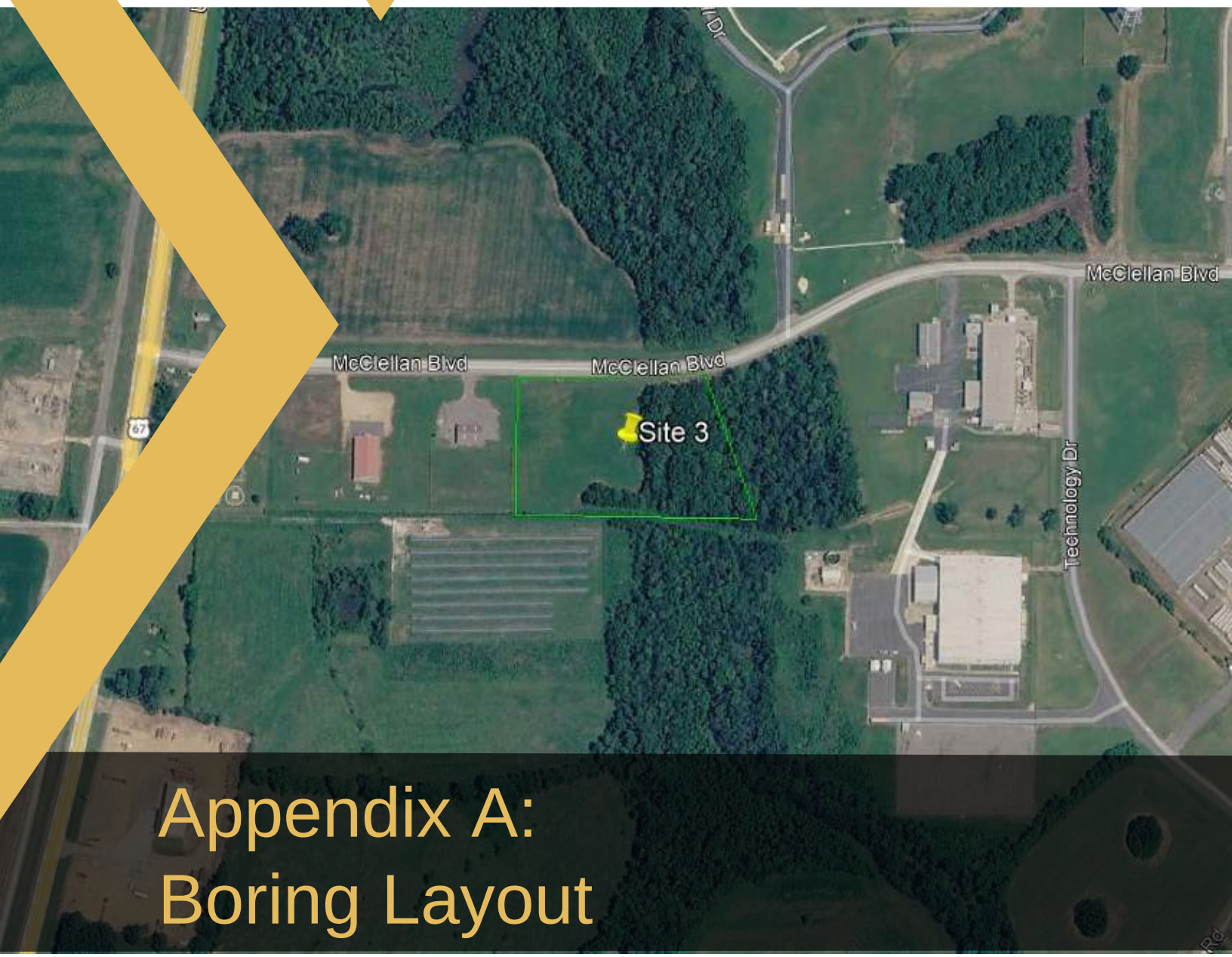

Appendix A: Boring Layout

McCLELLAND CONSULTING ENGINEERS, INC. DESIGNED TO SERVE	**PREPARED BY** McClelland Consulting Engineers, Inc Fayetteville, AR	**PROJECT** Name: ECCI Clark County Sites Number: 26-3834	**LOCATION** 34.054625, -93.094059 Arkadelphia, AR	**SYMBOL KEY** Soil Boring

PLATE 1

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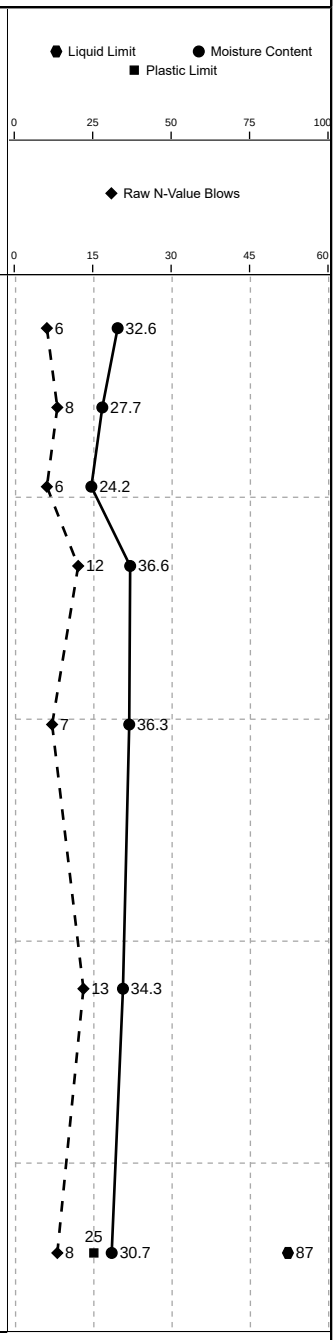
Appendix B: Boring Logs

ECCI Clark County Sites

Soil Boring: S3B1

Project Number:	26-3834	Client Name:	ECCI	Coordinates:	34.049742, -93.096631
Date Started:	05/01/2026	Date Completed:	05/01/2026	Ground Elev.:	231.00'
Drill Rig:	Diedrich D-50	Drilling Method:	Auger	Tooling:	SPT Sampler
Hammer Type:	Auto	Hammer Weight:	140	Drilling Firm:	MCE

Depth (ft)	Elevation (ft)	Soil Description and Remarks	Sample Number	Blow Counts (N/Refusal)
	230	TOPSOIL: (8") 0.67		
		(CL) LEAN CLAY WITH SAND: Brown; Medium Stiff; Low to Moderate Plasticity; Moist	S1	2-3-3 (6)
		Dark Brown; Stiff	S2	3-3-5 (8)
		Medium Stiff	S3	x-3-3 (6)
5		5.5		
	225	(CH) FAT CLAY: Grayish Brown; Stiff to Very Stiff; Moderate to High Plasticity; Moist	S4	3-6-6 (12)
		Stiff	S5	3-3-4 (7)
10				
	220			
		Very Stiff; Laminated Structure	S6	4-6-7 (13)
15				
	215			
		Stiff	S7	7-8 (8)
20		20		
		End of Boring		



Boring Date: **05/01/2026**
Logged By: **Chayse Dean**
Drilled By: **Brooks Johnson**

Water Level

Depth	Hour	Date
N/A	-	-
N/A	-	-

Log of Soil Boring: S3B1

ECCI Clark County Sites

1 Hostess Wy, Arkadelphia, AR 71923, USA

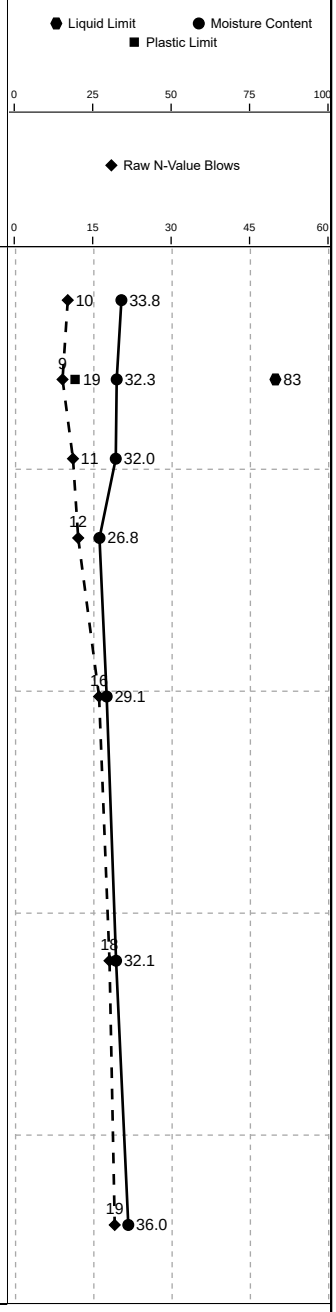
Project No.: 26-3834

ECCI Clark County Sites

Soil Boring: S3B2

Project Number:	26-3834	Client Name:	ECCI	Coordinates:	34.049111, -93.095789
Date Started:	05/01/2026	Date Completed:	05/01/2026	Ground Elev.:	227.00'
Drill Rig:	Diedrich D-50	Drilling Method:	Auger	Tooling:	SPT Sampler
Hammer Type:	Auto	Hammer Weight:	140	Drilling Firm:	MCE

Depth (ft)	Elevation (ft)	Soil Description and Remarks	Sample Number	Blow Counts (N/Refusal)
0	227	TOPSOIL: (8") 0.67		
		(CL) LEAN CLAY WITH SAND: Dark Brown; Stiff; Low to Moderate Plasticity; Moist	S1	3-4-6 (10)
	225	2.5		
		(CH) FAT CLAY: Brown; Stiff; Moderate to High Plasticity; Moist	S2	3-4-5 (9)
			S3	2-4-7 (11)
5		Stiff to Very Stiff	S4	2-4-8 (12)
	220			
		Grayish Brown; Very Stiff; Laminated Structure	S5	4-6-10 (16)
10				
	215			
			S6	6-9-9 (18)
15				
	210			
			S7	6-8-11 (19)
20		20		
		End of Boring		



Boring Date: **05/01/2026**
Logged By: **Chayse Dean**
Drilled By: **Brooks Johnson**

Water Level

Depth	Hour	Date
N/A	-	-
N/A	-	-

McCLELLAND CONSULTING ENGINEERS, INC.

Log of Soil Boring: S3B2

ECCI Clark County Sites

1 Hostess Wy, Arkadelphia, AR 71923, USA

Project No.: 26-3834

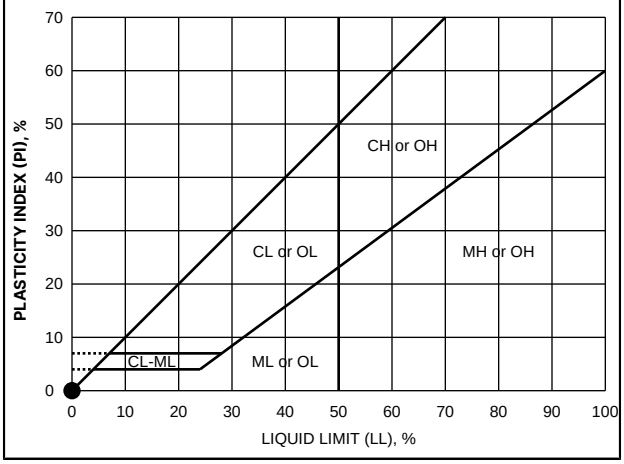
SOIL CLASSIFICATION CHART PER ASTM D 2488

PRIMARY DIVISIONS			SECONDARY DIVISIONS	
			GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	GRAVEL more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	GW	well-graded GRAVEL
			GP	poorly-graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	GW-GM	well-graded GRAVEL with silt
			GP-GM	poorly-graded GRAVEL with silt
			GW-GC	well-graded GRAVEL with clay
			GP-GC	poorly-graded GRAVEL with clay
		GRAVEL with FINES more than 12% fines	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction retained on No. 4 sieve	CLEAN SAND less than 5% fines	SW	well-graded SAND
			SP	poorly-graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	SW-SM	well-graded SAND with silt
			SP-SM	poorly-graded SAND with silt
			SW-SC	well-graded SAND with clay
			SP-SC	poorly-graded SAND with clay
		SAND with FINES more than 12% fines	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	SILT and CLAY liquid limit less than 50%	INORGANIC	CL	lean CLAY
			ML	SILT
			CL-ML	silty CLAY
		ORGANIC	OL (PI > 4)	organic CLAY
			OL (PI < 4)	organic CLAY
	SILT and CLAY liquid limit 50% or more	INORGANIC	CH	fat CLAY
			MH	elastic SILT
		ORGANIC	OH (plots on or above 'A'-line)	organic CLAY
			OH (plots below 'A'-line)	organic SILT
	Highly Organic Soils		PT	Peat

GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

PLASTICITY CHART



APPARENT DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPOOLING CABLE OR CATHEAD		AUTOMATIC TRIP HAMMER	
	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	3 - 8	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 23	15 - 42
Dense	31 - 50	64 - 105	23 - 38	43 - 70
Very Dense	> 50	> 105	> 38	> 70

CONSISTENCY - FINE-GRAINED SOIL

CONSISTENCY	SPOOLING CABLE OR CATHEAD		AUTOMATIC TRIP HAMMER	
	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)
Very Soft	< 2	< 3	< 2	< 2
Soft	2 - 4	3 - 5	2 - 3	2 - 3
Medium Stiff	5 - 8	6 - 10	3 - 6	4 - 6
Stiff	9 - 15	11 - 20	6 - 12	7 - 13
Very Stiff	16 - 30	21 - 39	12 - 23	14 - 26
Hard	> 30	> 39	> 23	> 26

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Appendix C: Laboratory Testing Results

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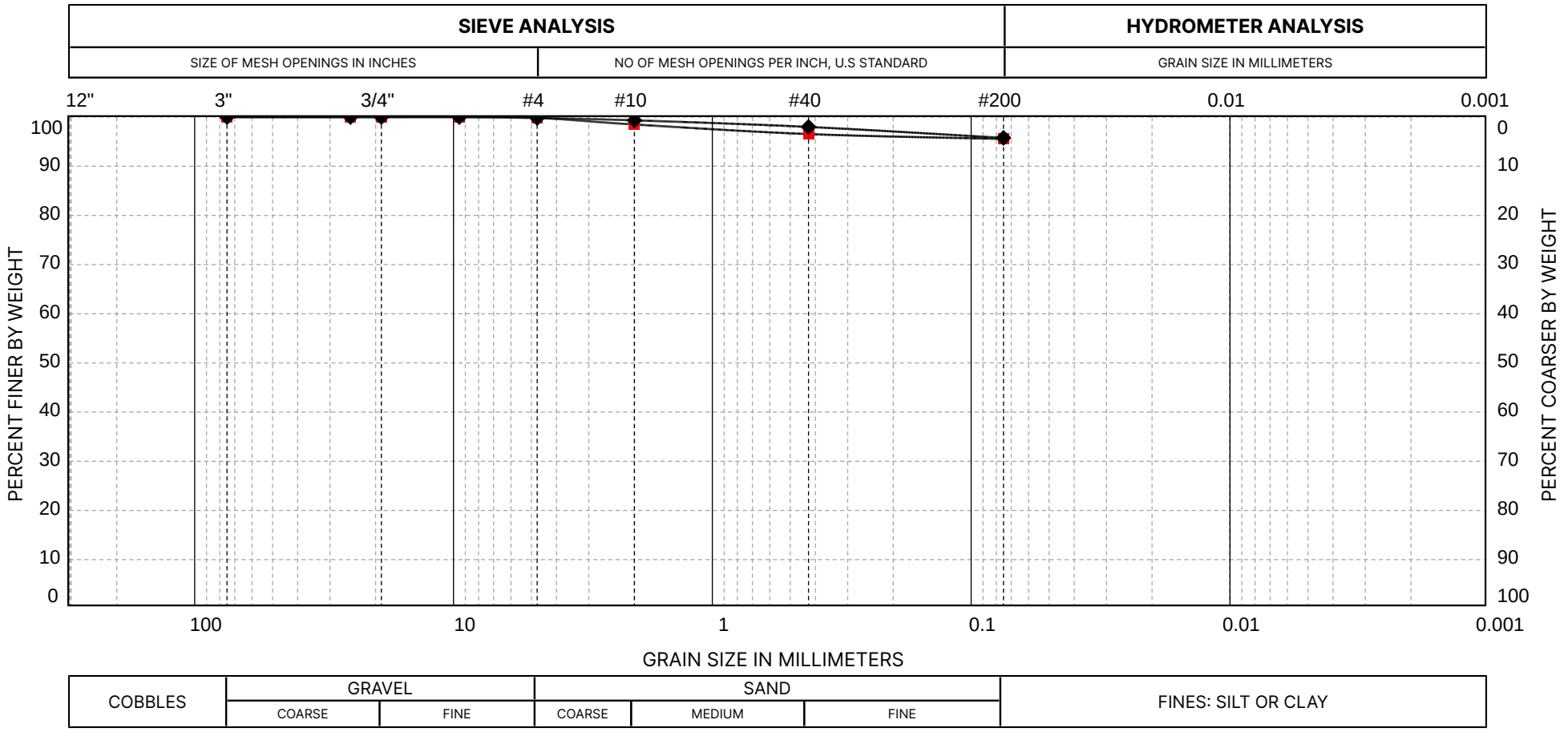
LABORATORY RESULTS SUMMARY

PROJECT ECCI Clark County Sites
PROJECT NO. 26-3834
LOCATION Arkadelphia, AR
CLIENT ECCI

Boring ID	Sample ID	Moisture Content (%)	LL	PL	PI	Gravel (%)	Sand (%)	Fines (%)	USCS	USCS Description
S3B1	S1	33								
S3B1	S2	28								
S3B1	S3	24								
S3B1	S4	37								
S3B1	S5	36								
S3B1	S6	34								
S3B1	S7	31	87	25	62	0	4	96	CH	Fat CLAY
S3B2	S1	34								
S3B2	S2	32	83	19	64	0	4	96	CH	Fat CLAY
S3B2	S3	32								
S3B2	S4	27								
S3B2	S5	29								
S3B2	S6	32								
S3B2	S7	36								

GRAIN SIZE DISTRIBUTION TEST RESULTS

ECCI Clark County Sites
Arkadelphia, AR



	EXPLORATION NUMBER	SAMPLE NUMBER	Depth'	USCS GROUP NAME	USCS SYMBOL	GRAVEL (%)	SAND (%)	FINES (%)	NAT WC (%)	D10 (mm)	D15 (mm)	D30 (mm)	D50 (mm)	D60 (mm)	D75 (mm)	D85 (mm)	D90 (mm)	D100 (mm)
■	S3B1	S7	18.5	Fat CLAY	CH	0	4	96	31	0	0	0	0	0	0	0	0	9.5
◆	S3B2	S2	2	Fat CLAY	CH	0	4	96	32	0	0	0	0	0	0	0	0	9.5