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GEOTECHNICAL
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GCI PROJECT No. 24-G-29759

Subsurface Exploration and Geotechnical Engineering Report

Darby Creek Meadows Residential Development - Due Diligence Study
State Route 736
Plain City, Ohio

Prepared for:
Sox Real Estate LLC

January 14, 2025

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January 14, 2025

Bart Barok
Sox Real Estate LLC
5979 Dublin Road
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Email: bartbarok@gmail.com

Reference: Subsurface Exploration and Geotechnical Engineering Report
Darby Creek Meadows Residential
State Route 736 – Plain City, Ohio
GCI Project No. 24-G-29759

As you authorized, Geotechnical Consultants, Inc. (GCI) performed a subsurface exploration and prepared this geotechnical engineering report for the above referenced project. In summary, our borings encountered a topsoil surface cover of about 1-foot in thickness, overlying natural lean clay soils, including glacial till, and granular deposits. Groundwater seepage was encountered in 4 of our 8 borings. Bedrock was not encountered in our borings (maximum drilled depth was 20 feet).

Based on the subsurface conditions encountered in our borings, it is GCI's opinion that the site geotechnical conditions are generally suitable for the anticipated development using conventional shallow foundations, slabs-on-grade, and flexible pavements. The primary geotechnical issues that will affect project development include site stripping, subgrade preparation, and structural fill placement and compaction. The attached report provides detailed recommendations for site preparation, foundations, slabs, and pavements.

After you have reviewed the report, feel free to contact us with any questions you may have. We appreciate the opportunity to provide our services for this project and hope to continue providing our services through construction.

Respectfully submitted,
Geotechnical Consultants, Inc.

Isaac Koroma
Staff Engineer

STATE OF OHIO
JEFFREY M. HOLKO
E-82689
REGISTERED
PROFESSIONAL ENGINEER

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In-House Reviewer

Distribution: Bart Barok @ Sox Real Estate LLC – pdf via email
GCI File – 1 copy

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INTRODUCTION

As requested and authorized by Bart Barok, representing Sox Real Estate LLC, Geotechnical Consultants, Inc. (GCI) performed a subsurface exploration and prepared this geotechnical engineering report for the proposed single-family residential development in Plain City, Ohio. Prior to drilling, GCI was provided a site plan (prepared by Kimley-Horn and Associates, Inc., dated November 19, 2024), showing parcel boundaries for 30 home lots and roadways.

Our subsurface study consisted of eight (8) standard penetration test (SPT) borings drilled across the project site. GCI located the borings using the provided site plan, GIS coordinates, and handheld GPS equipment; locations should be considered approximate. GCI did not determine ground surface elevations at the boring locations within our scope of services. A boring location plan and test boring logs are attached in the appendix.

The intent of this study was to evaluate subsurface conditions and offer geotechnical recommendations relative to site preparation, earthwork, foundations, slabs, and pavements for the proposed residential development. We issue this report prior to the receipt of final site layout and grading plans. GCI should review these plans when available and provide additional recommendations, and borings, if necessary.

GCI has prepared this report for the exclusive use of Sox Real Estate LLC, and their consultants, for specific application to the above referenced project in Plain City, Ohio in accordance with generally accepted soil and foundation engineering practices. We make no warranty, expressed or implied.

SITE LOCATION AND PROJECT DESCRIPTION

The project site consists of two parcels, totaling 68.11± acres, located west of State Route 736 in Plain City, Ohio. Robinson Run and Big Darby Creek are to the east and west of the site, respectively. Agricultural fields and residential development surround the project site. The project site consists of undeveloped farm field and grass areas. Existing site grades range from about elevation 975 to 940 feet. The aerial photo shown below, obtained from Google Earth, shows conditions similar to those encountered during our drilling operations.

Site Aerial Photo; Property Outlined in Red (Google Earth; dated 4/14/2024)

GCI understands the project will consist of constructing 30 single-family residential lots and homes, streets, and utilities.

SUBSURFACE CONDITIONS

GCI mobilized a truck-mounted, rotary drill rig (with automatic sampling hammer) to the site on January 7, 2025 and drilled eight standard penetration test borings (B-1 to B-8) across the project site. The borings were extended to a depth of 20 feet below existing grade. We have attached boring logs, a boring location plan, and a summary table of encountered subsurface conditions in the appendix. We also summarize the subsurface findings below. Refer to the individual boring logs for more detailed subsurface information at specific boring locations.

Surface Cover

The borings encountered a topsoil surface cover extending to a depth range of 12 to 14 inches below existing grade. We anticipate topsoil could be thicker in low lying and wooded areas across the project site.

Natural Soils

Below the topsoil cover, the borings encountered moderate plasticity, stained to brown mottled gray, lean clay with sand (classified as CL under the ASTM/Unified Soil Classification System). This clay layer extended to a depth range of 2 to 6 feet in our borings. Standard penetration test N-values indicated the lean clay was generally soft to stiff in cohesive consistency.

Below the upper clay layer, the borings (except boring B-8) encountered brown glacial till, visually classified as moderate plasticity sandy lean clay (CL). The brown till extended to a depth range of 11 to 18 feet in our borings. The brown till graded to gray sandy lean clay (CL) in borings B-1, B-4, and B-6, and was encountered below a granular layer in boring B-7, at a depth range of 12 to 18 feet. Borings B-1, B-4, B-6, and B-7 terminated

in the gray till at a depth of 20 feet. Standard penetration N-values indicated the brown and gray till soils were generally stiff to hard in cohesive consistency.

We encountered granular deposits classified as silty sand with gravel (SM), silty sand (SM), and poorly graded gravel with clay and sand (GP-GC) in borings B-2, B-3, B-5, B-7 and B-8 at various depth ranges. Standard penetration test N-values indicated the granular deposits were medium dense to dense in cohesionless density. Borings B-2, B-3, B-5, and B-8 terminated within the granular deposits at a depth of 20 feet.

Bedrock

Bedrock was not encountered within the maximum drill depths of our borings (20 feet).

Groundwater and Soil Moisture Conditions

Groundwater seepage was encountered during drilling in four of our borings (B-2, B-5, B-6, and B-8) at depths ranging from 6 to 13 feet below existing grade. Upon completion of the drilling process, water seepage was measured at depths ranging from 10 to 20 feet below existing grade. The remainder of the borings were dry during, and upon completion of the drilling process. Moisture conditions within the samples obtained during the drilling process were generally noted as moist to very moist, with wet samples at and below the noted water seepage depths. Note that groundwater levels and soil moisture conditions can vary with changes in season and in response to precipitation events, seasonal climate changes, and other factors that may differ from the time of our measurements.

ANALYSES AND CONCLUSIONS

GEOTECHNICAL EVALUATION

Based on the boring findings, it is GCI's opinion that the site geotechnical conditions are generally suitable for the proposed single-family homes using conventional shallow foundations, slab-on-grade construction, and flexible pavements, provided the site is prepared in accordance with the recommendations of this report. We discuss geotechnical considerations for the project below.

Site Stripping

Surface vegetation, topsoil, root mat, stumps from removed trees, and other organic materials should be completely removed to expose stable natural soils prior to placing new fill, underslab aggregate, or pavement base aggregate. Stripping should extend to a minimum of 5 feet laterally beyond the proposed fill areas, house footprints, and pavement areas. Topsoil and organic matter can be stockpiled for reuse in landscaping mounds, redistributed in proposed green space areas, or disposed at an off-site location. Topsoil could be thicker in low-lying areas of the site. Remove clay field tile from the proposed construction areas, if encountered, and allow to drain.

Subgrade Stabilization

Once the site has been properly stripped, the exposed subgrades will likely consist of lean clay, stained in some areas. The exposed natural subgrades should be thoroughly proof-rolled using a fully-loaded, tandem-axle dump truck (or equivalent) to delineate unstable conditions prior to placement of structural fill, including pavement and building slab aggregate base placement. Soft and unstable areas encountered during proof-rolling should be stabilized, or removed, and replaced with structural fill.

Subgrades showing rutting and minor flexing during the proof-roll are anticipated to be stabilized by disking, aerating/drying, and re-compaction during traditionally drier times of the year. During wet seasons, partial undercutting and replacing of wet soils with structural fill, drying with soil additives such as lime, or use of geosynthetics may be needed to create a stable subgrade before placing controlled fills.

Portions of the upper level soils could be very moist at the time of construction. The ramification is that these soils may exhibit excessive flexing and pumping during a proof-roll, particularly during wetter seasons of the year, and could require deeper undercuts and possible chemical stabilization to obtain stable subgrades. The use of soil additives, such as lime and flyash, or installation of geosynthetics, should be reviewed by GCI prior to use in the field.

Fewer problems with soft subgrades are expected if work is performed during traditionally drier times of the year (i.e., late spring, summer, and early fall). Traditionally wetter seasons (i.e., late fall, winter, and early spring) will contribute to more problems associated with soft, very moist subgrades. We recommend carrying a contingency for stabilizing and/or undercutting.

Structural Fill Placement and Compaction

Structural fill can be placed to design grade once the subgrades are brought to firm and stable conditions. Non-organic site soils can be used as structural fill provided proper moisture control is maintained. Fill should be placed in maximum 8-inch thick loose lifts and compacted to at least 98% of the Standard Proctor maximum dry density. Moisture should be controlled within 3% of the Standard Proctor optimum moisture. Lift thickness should be reduced to 4 to 6 inches in confined areas where hand operated compaction

equipment is used. The clay-based site soils will compact best using sheepsfoot compactors, while granular soils will compact best with a vibratory smooth drum roller. Off-site materials should be reviewed by GCI prior to placement as structural fill.

Depending on the time of year of earthwork, the fill may require moisture conditioning to achieve proper compaction. The contractor should place and compact controlled fills in accordance with the information presented in the *Site Preparation and Earthwork* section of this report. Compaction will be difficult to obtain if soft/unstable subgrades are not properly remediated before starting to place fill, or if the proposed fill materials contain excess moisture.

FOUNDATIONS

Provided the site is properly prepared as stated above, it is GCI's opinion that the single-family homes can be constructed using conventional shallow spread footings and continuous wall foundations. All footings should bear on firm and stable natural soils, or on new controlled fill placed directly over stable natural soils. Footings bearing on acceptable soils can be designed using a maximum allowable bearing capacity of 3,000 pounds per square foot.

Regardless of calculated sizes, GCI recommends minimum sizes of 16 inches wide for wall footings and 30 inches square for column pads to prevent a "punch" effect. All exterior foundations should extend to local frost bearing depth (36 inches) or to stable bearing (as stated above), whichever is deeper. Interior footings in heated areas may be placed as shallow as feasible as long as they are bearing on acceptable soils. Continuous wall footings should be designed to include longitudinal reinforcing steel to help control

differential settlement. We also recommend completing the structural fill placement for the building pad prior to excavating for and constructing building foundations.

Typical to local practice, if soft, unstable, or unsuitable soils are encountered at footing subgrade, undercut to stable soils. Undercut areas can be backfilled to footing subgrade using a controlled density fill (CDF), such as lean concrete or K-Krete®, to allow footing construction at design grade. Alternatively, the foundations can be constructed on firm, stable site soils at the bottom of the undercut. Soft, unstable bearing soils should be reviewed by the soils engineer prior to undercuts.

FLOOR SLABS

Conventional concrete slab-on-grade construction is feasible for the proposed single-family home structures, provided the site is properly prepared in accordance with the recommendations of this report. The subgrade should be thoroughly proof-rolled or checked for stability (if a proof-roll is not feasible) and any soft, yielding areas brought to a stable condition prior to slab construction or placement of aggregate base.

GCI recommends placing a minimum of 4 inches of granular fill (well-graded crushed stone, such as AASHTO #57 Stone, or ODOT Item 304) under at-grade floor slabs to serve as a capillary cut-off, and to provide a uniform, firm subbase The granular fill should be increased to 8 inches for below-grade floor slabs and consist of free draining aggregate, such as AASHTO #57 stone, with drains leading to a sump. We recommend placing a vapor retarder below the slab where moisture may be a problem with slab-on-grade floor coverings.

BELOW-GRADE WALLS

Below-grade walls (basement) restrained at both top and bottom should be designed to resist an at-rest lateral soil pressure. Grade-break retaining walls allowed to move freely at the top should be designed using active-case lateral earth pressures. The design loading depends on the type of backfill material used and boundary support conditions. The following table provided recommended equivalent fluid pressures for two types of soils and loading conditions.

Soil Type	Equivalent Active Fluid Pressure (pcf)	Equivalent At-Rest Fluid Pressure (pcf)
Lean Clay	**55**	**70**
Granular Soil	**35**	**55**

Note: The values above are based on an assumed backfill density of between 125 and 130 pcf. Any lateral pressure from possible surcharge loads should also be used in design.

We recommend that granular material (less than 15% passing the No. 200 sieve) be used for all wall backfill. This fill should be placed in a wedge-shaped area define by a line extending from the base of the wall upward at an angle of 35 degrees from the vertical to use the lower values associated with sand and gravel wall backfill. **Cohesive soils are not recommended as wall backfill due to their poor drainage characteristics and potential for lateral wall loads resulting from surface frost.** We recommend that footing drains and underslab drains leading to a permanent sump pump (or tied into the storm water system) be installed to minimize the build-up of hydrostatic forces behind the below grade walls. Damp-proofing of below grade walls is also suggested.

SEISMIC FACTOR

Our borings encountered soft to hard cohesive soils overlying medium dense to dense granular deposits. In accordance with the Ohio Building Code, we estimate the site has a Site Class D – " stiff soil" profile.

EXCAVATIONS

The natural site soils can be excavated with conventional track hoe equipment. We did not encounter bedrock within the maximum 20-foot depth of our borings, and as such, we do not anticipate bedrock will impact the project. Excavations that encounter granular soils will tend to slough and will require laybacks or trench wall support. This will be exacerbated where water seepage is encountered. **All site excavations should comply with current OSHA regulations.**

GROUNDWATER

We encountered groundwater seepage in four borings during drilling at depths of 6 to 13 feet below existing grade. We do not anticipate groundwater seepage will pose significant problems during construction with most normal shallow footing excavations and shallow utilities trench excavations. When water is encountered in site excavations, the excavations should be dewatered to allow footing construction and utility trench backfilling in “dry” conditions. We expect groundwater seepage flows in shallow excavations can be handled with portable sump pumps and working mats of crushed stone, as needed.

Deeper excavations (such as basements), may encounter significant groundwater flow volume. Final grades for the homes will have an impact on groundwater levels experienced in the below-grade areas. Portable sumps may work to control groundwater during construction, but if excessive flows are encountered, other techniques may be needed.

Where groundwater is encountered in basement excavations, long-term groundwater control will be critical to maintaining a dry basement over the life of the single-family home. We recommend a permanent groundwater control system consisting of footing

drains, and underslab stone layer, and underslab drains. The drains should lead to a permanent sump pump. The purpose of the system is to minimize the build-up of hydrostatic forces behind the basement walls. We expect that a sump pump system will cycle frequently to control water seepage into the basement area. Consideration should be given to installing a battery-operated, back-up sump pump system that would operate in the event of a prolonged power outage.

Contact GCI for additional recommendations if excessive groundwater conditions are encountered.

PAVEMENTS

Provided the site is properly prepared, conventional aggregate base and flexible asphalt wearing course pavements can be used. Prior to pavement construction, the subgrade should be carefully proof-rolled, and stabilized as necessary. Properly prepared and compacted, we feel that the site soils would have a CBR value of at least 3. A specific pavement design is beyond the scope of work of this report. A site-specific pavement design would require additional laboratory testing and pavement use criteria.

For this single-family home residential development, we anticipate the roadways shown on the provided plan will be dedicated city/township streets and constructed to meet local municipal design standards.

Drainage systems will be designed by the site civil engineer. Providing adequate drainage is important to future pavement performance. Pavement subgrades should be property graded to shed run-off. Installing a medium-duty geogrid below the base aggregate

course in areas of concentrated traffic flow, such as the main entrance, will increase the structural number of the pavement section and improve the pavement performance.

SITE PREPARATION AND EARTHWORK

As a general approach to the site preparation, we recommend the following:

1. Strip vegetation, topsoil, root mat, and other unsuitable materials below the proposed fill areas, house footprints, and pavement areas, plus a minimum of 5 feet laterally beyond. Topsoil can be stockpiled for later distribution in site landscaping mounds, green space areas, or used to fill borrow pits.

2. Thoroughly and carefully proof-roll the exposed soil subgrades using a fully-loaded, tandem-axle dump truck (or equivalent) to identify potential soft, yielding subgrade areas. Soft/unstable areas identified during the proof-roll should be undercut to stable subgrade conditions or otherwise stabilized prior to placing controlled fill, placing underslab aggregate, or placing pavement base materials.

3. With stable subgrades, place structural fill to design grade, as required within the proposed building and pavement areas, as required. Non-organic natural site soils are suitable for reuse in controlled fills. **Off-site borrow material should be reviewed by our office prior to use.**

   Place controlled fills in maximum 8-inch loose lifts and compact each lift to 98% of the optimum Standard Proctor dry density (ASTM D-698). The moisture in the site soils should be controlled to within ±3% of the optimum Standard Proctor moisture content. The clay-based site soils will compact best with “sheepsfoot” type equipment. Granular soils will compact best with a smooth drum vibratory roller.

4. Excavate for foundations after the house pads are filled to grade. Undercut footings to firm and stable non-organic natural soils. Refer to the *Geotechnical Evaluation and Foundations* sections of this report for specific earthwork and foundation design parameters.

5. The house pad and pavement areas should be steel-wheel rolled to a smooth surface prior to placement of base aggregate. Subgrade preparation during wet seasons may require the use of engineering fabric or geogrid.

6. We recommend that GCI be retained to observe proof-rolling operations, cut and fill operations, and footing excavations/construction.

7. If work is performed during the winter (e.g., when freezing temperatures occur), special protective measures will be required during fill placement and footing construction procedures. Contact GCI for additional cold weather recommendations, as needed.

CONSTRUCTION MATERIALS ENGINEERING AND TESTING

GCI provides construction materials engineering and testing services. For project continuity throughout construction, we recommend that GCI be retained to observe, test, and document:

- earthwork procedures (stripping, fill placement, compaction, utility trench backfill, etc.),
- foundation and slab preparation (proof-rolling, excavations, undercuts, etc.), and
- concrete placement and compressive strength testing (footings, slabs, etc.).

The purpose of this work is to assess that the intent of our recommendations is being followed and to make timely changes to our recommendations (as needed) in the event site conditions vary from those encountered in our borings. Please contact our field department to initiate these services.

FINAL

We recommend that GCI review final site layout and grading plans. Recommendations contained in this report may be changed based on review of final site plans. If any changes in the nature, design or locations of the construction are planned, conclusions and recommendations should not be considered valid unless verified in writing by GCI.

The recommendations contained in this report are the opinion of GCI based on the subsurface conditions found in the borings and available development information. It should be noted that the nature and extent of variations between borings might not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report. This report has been prepared for design purposes only and should not be considered sufficient to prepare an accurate bid document.

If you have any questions or need for any additional information, please contact our office. It has been a pleasure to be of service to you on this project, and we hope to continue our services through construction.

GEOTECHNICAL
CONSULTANTS INC.

APPENDIX — Darby Creek Meadows Residential Development

General Notes for Soil Sampling and Classifications
Site Location Map and Boring Location Plan
Summary of Encountered Subsurface Conditions
Test Boring Logs (B-1 to B-8)

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GENERAL NOTES FOR SOIL SAMPLING AND CLASSIFICATIONS

BORINGS, SAMPLING AND GROUNDWATER OBSERVATIONS:

Drilling and sampling were conducted in accordance with procedures generally recognized and accepted as standard methods of exploration of subsurface conditions. The borings were drilled using a truck-mounted drill rig using auger boring methods with standard penetration testing performed in each boring at intervals ranging from 1.5 to 5.0 feet. The stratification lines on the logs represent the approximate boundary between soil types at that specific location and the transition may be gradual.

Water levels were measured at drill locations under conditions stated on the logs. This data has been reviewed and interpretations made in the text of the report. Fluctuations in the level of the groundwater may occur due to other factors than those present at the time the measurements were made.

The Standard Penetration Test (ASTM-D-1586) is performed by driving a 2.0 inch O.D. split barrel sampler a distance of 18 inches utilizing a 140 pound hammer free falling 30 inches. The number of blows required to drive the sampler each 6 inches of penetration are recorded. The summation of the blows required to drive the sampler for the final 12 inches of penetration is termed the Standard Penetration Resistance (N). Soil density/consistency in terms of the N-value is as follows:

COHESIONLESS DENSITY		COHESIVE CONSISTENCY	
0-10	Loose	0-4	Soft
10-30	Medium Dense	4-8	Medium Stiff
30-50	Dense	8-15	Stiff
50 +	Very Dense	15-30	Very Stiff
		30 +	Hard

SOIL MOISTURE TERMS

Soil Samples obtained during the drilling process are visually characterized for moisture content as follows:

MOISTURE CONTENT	DESCRIPTION
Damp	Soil moisture is much drier than the Atterberg plastic limit (where soils are cohesive) and generally more than 3% below Standard Proctor “optimum” moisture conditions. Soils of this moisture generally require added moisture to achieve proper compaction.
Moist	Soil moisture is near the Atterberg plastic limit (cohesive soils) and generally within ±3% of the Standard Proctor “optimum” moisture content. Little to no moisture conditioning is anticipated to be required to achieve proper compaction and stable subgrades.
Very Moist	Soil moisture conditions are above the Atterberg plastic limit (cohesive soils) and generally greater than 3% above Standard Proctor “optimum” moisture conditions. Drying of the soils to near “optimum” conditions is anticipated to achieve proper compaction and stable subgrades.
Wet	Soils are saturated. Significant drying of soils is anticipated to achieve proper compaction and stable subgrades.

SOIL CLASSIFICATION PROCEDURE:

Soil samples obtained during the drilling process are preserved in plastic bags and visually classified in the laboratory. Select soil samples may be subjected to laboratory testing to determine natural moisture content, gradation, Atterberg limits and unit weight. Soil classifications on logs may be adjusted based on results of laboratory testing.

Soils are classified in accordance with the ASTM version of the Unified Soil Classification System. ASTM D-2487 “Classification of Soils for Engineering Purposes (Unified Soil Classification System) describes a system for classifying soils based on laboratory testing. ASTM D-2488 “Description and Identification of Soil (Visual-Manual Procedure) describes a system for classifying soils based on visual examination and manual tests.

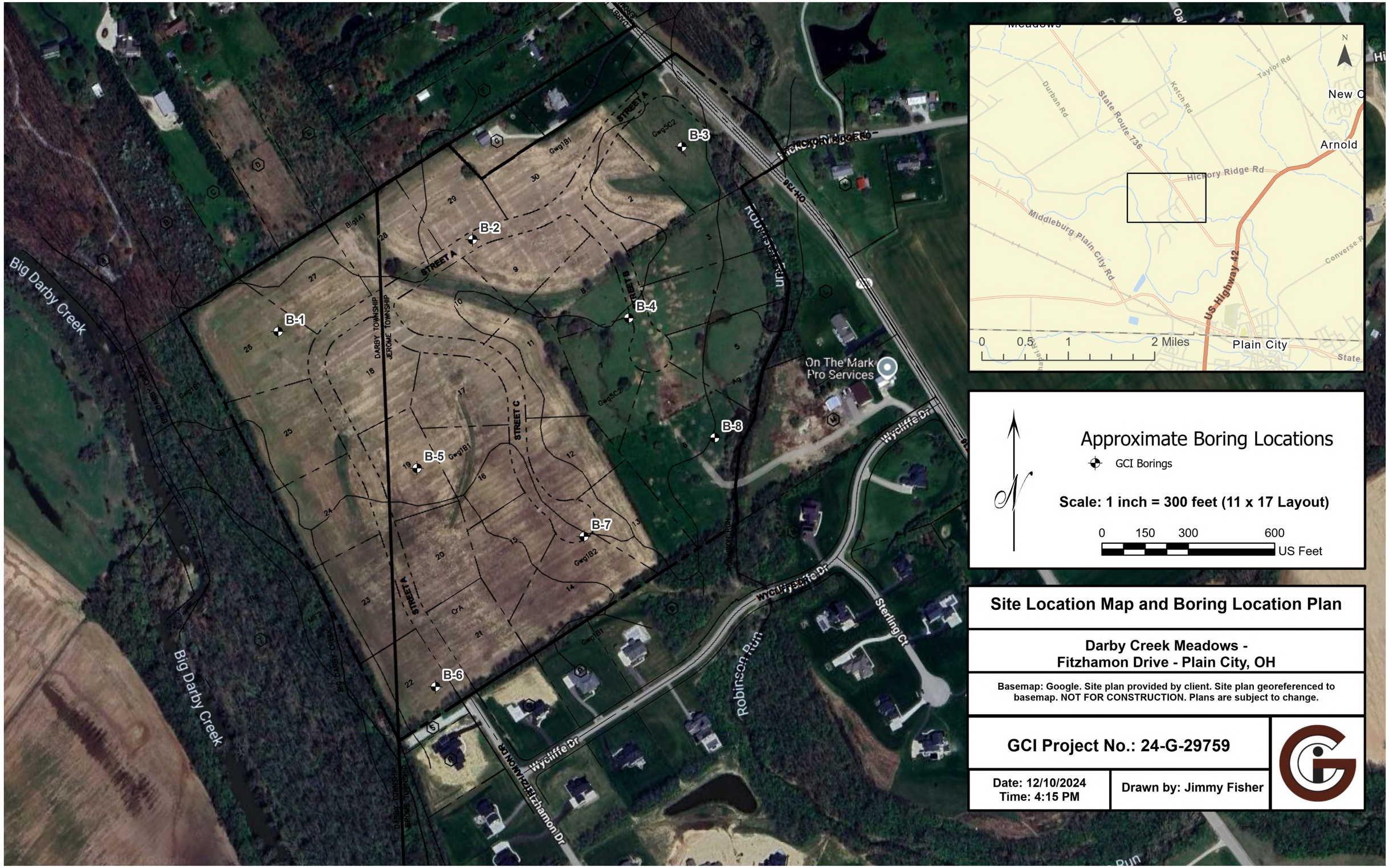
Soil classifications are based on the following tables (see reverse side):

GENERAL NOTES FOR SOIL SAMPLING AND CLASSIFICATIONS

PARTICLE SIZE DEFINITION		
Boulders:		>12"
Cobbles:		3" to 12"
Gravel:	Coarse:	3/4" to 3"
	Fine:	No. 4 (3/16") to 3/4"
Sand:	Coarse	No. 10 (2.0mm) to No. 4 (4.75mm)
	Medium	No. 40 (0.425mm) to No. 10 (2.0mm)
	Fine	No. 200 (0.074mm) to No. 40 (0.425mm)
Silt & Clay		<0.074mm; classification based on overall plasticity; in general clay particles <0.005mm.

CONSTITUENT MODIFIERS	
Trace	Less than 5%
Few	5-10%
Little	15-25%
Some	30-45%
Mostly	50-100%

ASTM/UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART		
COARSE-GRAINED SOILS (more than 50% of materials is larger than No. 200 sieve size)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	*Clean Gravel (less than 5% fines)*	
	GW	Well-graded gravel, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel sand mixtures, little or no fines
	Gravels with fines (more than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS More than 50% of coarse fraction smaller than No. 4 sieve size	*Clean Sands (Less than 5% fines)*	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly-graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 percent ……GW, GP, SW, SP Greater than 12 percent ……GM, GC, SM, SC 5 to 12 percent ……Borderline cases requiring dual symbols: SP-SM, GP-GM, etc.		
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size)		
SILTS AND CLAYS Liquid Limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays or low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	CL-ML	Inorganic silty clay of slight plasticity, P.I. between 4 and 7
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid Limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays or medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils



Site Location Map and Boring Location Plan

Darby Creek Meadows -
Fitzhamon Drive - Plain City, OH

Basemap: Google. Site plan provided by client. Site plan georeferenced to basemap. NOT FOR CONSTRUCTION. Plans are subject to change.

GCI Project No.: 24-G-29759

Date: 12/10/2024 Time: 4:15 PM	Drawn by: Jimmy Fisher

Summary of Encountered Subsurface Conditions

Darby Creek Meadows Residential Development - Due Diligence Study
SR 736 - Plain City, Ohio
GCI Job Number: 24-G-29759

Borehole	Surface Layer	Topsoil Thickness (ft.)	Groundwater: Level Encountered (ft)	Groundwater: Level at Completion (ft)	Depth to Top of Lean Clay (ft)	Depth to Top of Brown Till (ft)	Depth to Top of Gray Till (ft)	Depth to Top of Sand/Gravel (ft)	Bottom of Boring Depth (ft)
			Depth	Depth					
B- 1	Topsoil	1.0	--	--	1.0	2.0	12.0		20.0
B- 2	Topsoil	1.0	11	15	1.0	3.5	--	11.0	20.0
B- 3	Topsoil	1.0	--	--	1.0	2.0	--	16.0	20.0
B- 4	Topsoil	1.0	--	--	1.0	3.5	18.0		20.0
B- 5	Topsoil	1.0	12	20	1.0	2.0	--	15.0	20.0
B- 6	Topsoil	1.0	13	14	1.0	2.0	13.0		20.0
B- 7	Topsoil	1.0	--	--	1.0	3.5	16.0	13.0	20.0
B- 8	Topsoil	1.2	6	10	1.2	--	--	6.0	20.0

Average Topsoil Depth at boring locations: 1.0 feet

TEST BORING LOG

PROJECT NAME **Darby Creek Meadows Residential - OH S.R. 736 - Plain City, OH** BORING NO. **B-1**

PROJ. SURF. ELEV.

CLIENT **Sox Real Estate LLC** NO. **24-G-29759** DATE DRILLED **1/7/2025**

GROUND WATER OBSERVATION

None FEET BELOW SURFACE AT COMPLETION

_____ FEET BELOW SURFACE AT 24 HOURS

_____ FEET BELOW SURFACE AT ____ HOURS

Proportions Used

Trace	Less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

140 lb Wt. x 30" fall on 2" O.D. Sampler

Cohesionless Density

0 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
50 +	Very Dense

Cohesive Consistency

0 - 4	Soft
4 - 8	Medium Stiff
8 - 15	Stiff
15 - 30	Very Stiff
30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
	2.0	0.0-1.5	SS	5	4	4	V Moist to Moist	1.0	Topsoil
								2.0	Brown Mottled Gray Lean Clay with Sand (CL) - moderate plasticity, few fine to coarse sand
	4.5+	2.0-3.5	SS	4	6	6	Moist		Brown Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel
	4.5+	4.0-5.5	SS	6	6	7	Moist		
5									
	4.5+	8.5-10.0	SS	7	7	9	Moist		
10								12.0	
									Gray Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel
	4.5+	13.5-15.0	SS	7	7	7	Moist		
15									
	4.5+	18.5-20.0	SS	7	8	8	Moist		
								20.0	BOTTOM OF BORING: 20'

*** The stratification lines represent the approximate boundary between soil types and the transition may be gradual.**

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TEST BORING LOG

PROJECT NAME **Darby Creek Meadows Residential - OH S.R. 736 - Plain City, OH** BORING NO. **B-2**

PROJ. SURF. ELEV.

CLIENT **Sox Real Estate LLC** NO. **24-G-29759** DATE DRILLED **1/7/2025**

GROUND WATER OBSERVATION

15.0 FEET BELOW SURFACE AT COMPLETION

_____ FEET BELOW SURFACE AT 24 HOURS

_____ FEET BELOW SURFACE AT ____ HOURS

Proportions Used

Trace	Less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

140 lb Wt. x 30" fall on 2" O.D. Sampler

Cohesionless Density

0 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
50 +	Very Dense

Cohesive Consistency

0 - 4	Soft
4 - 8	Medium Stiff
8 - 15	Stiff
15 - 30	Very Stiff
30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
	2.5	0.0-1.5	SS	2	3	3	V Moist to Moist	1.0	Topsoil
	2.5	2.0-3.5	SS	3	4	4	Moist	3.5	Brown Mottled Gray Lean Clay with Sand (CL) - moderate plasticity, few to little fine to coarse sand
5	4.5+	4.0-5.5	SS	4	5	5	Moist		Brown Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel
	4.5+	8.5-10.0	SS	6	6	7	Moist		
10								11.0	**Water Seepage at 11'**
	--	13.5-15.0	SS	11	12	12	Wet		Brown Silty Sand with Gravel (SM) - mostly fine to coarse sand, little gravel, little silt
15								16.0	
	--	18.5-20.0	SS	16	17	17	Wet		Gray Silty Sand with Gravel (SM) - mostly fine to coarse sand, little gravel, little silt
								20.0	BOTTOM OF BORING: 20'

*** The stratification lines represent the approximate boundary between soil types and the transition may be gradual.**

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TEST BORING LOG

PROJECT NAME **Darby Creek Meadows Residential - OH S.R. 736 - Plain City, OH** BORING NO. **B-3**

PROJ. SURF. ELEV.

CLIENT **Sox Real Estate LLC** NO. **24-G-29759** DATE DRILLED **1/7/2025**

GROUND WATER OBSERVATION

None FEET BELOW SURFACE AT COMPLETION

_____ FEET BELOW SURFACE AT 24 HOURS

_____ FEET BELOW SURFACE AT ____ HOURS

Proportions Used

Trace	Less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

140 lb Wt. x 30" fall on 2" O.D. Sampler

Cohesionless Density

0 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
50 +	Very Dense

Cohesive Consistency

0 - 4	Soft
4 - 8	Medium Stiff
8 - 15	Stiff
15 - 30	Very Stiff
30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
	1.5	0.0-1.5	SS	3	4	4	V Moist to Moist	1.0	Topsoil
								2.0	Brown Mottled Gray Lean Clay with Sand (CL) - moderate plasticity, few fine to coarse sand
	4.5+	2.0-3.5	SS	5	5	6	Moist		Brown Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel; contains rock fragments
	4.5+	4.0-5.5	SS	5	6	6	Moist		
5									
	4.5+	8.5-10.0	SS	6	6	6	Moist		
10									
	4.5+	13.5-15.0	SS	7	8	9	Moist		
15								16.0	
									Brown Silty Sand with Gravel (SM) - mostly fine to coarse sand, little to few gravel, little silt
	--	18.5-20.0	SS	7	7	11	Moist		
								20.0	BOTTOM OF BORING: 20'

*** The stratification lines represent the approximate boundary between soil types and the transition may be gradual.**

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TEST BORING LOG

PROJECT NAME **Darby Creek Meadows Residential - OH S.R. 736 - Plain City, OH** BORING NO. **B-4**

PROJ. SURF. ELEV.

CLIENT **Sox Real Estate LLC** NO. **24-G-29759** DATE DRILLED **1/7/2025**

GROUND WATER OBSERVATION

None FEET BELOW SURFACE AT COMPLETION

_____ FEET BELOW SURFACE AT 24 HOURS

_____ FEET BELOW SURFACE AT ____ HOURS

Proportions Used

Trace	Less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

140 lb Wt. x 30" fall on 2" O.D. Sampler

Cohesionless Density

0 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
50 +	Very Dense

Cohesive Consistency

0 - 4	Soft
4 - 8	Medium Stiff
8 - 15	Stiff
15 - 30	Very Stiff
30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
	2.0	0.0-1.5	SS	4	5	5	V Moist to Moist	1.0	Topsoil
									Brown Mottled Gray Lean Clay with Sand (CL) - moderate plasticity, few fine to coarse sand
	3.5	2.0-3.5	SS	5	6	6	Moist	3.5	
									Brown Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel; contains rock fragments
	4.0	4.0-5.5	SS	6	6	6	Moist		
5									
	4.0	8.5-10.0	SS	7	8	9	Moist		
10									
	4.0	13.5-15.0	SS	6	6	7	Moist		
15									
								18.0	
	4.5+	18.5-20.0	SS	9	10	13	Moist		Gray Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel
								20.0	BOTTOM OF BORING: 20'

*** The stratification lines represent the approximate boundary between soil types and the transition may be gradual.**

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TEST BORING LOG

PROJECT NAME **Darby Creek Meadows Residential - OH S.R. 736 - Plain City, OH** BORING NO. **B-5**

PROJ. SURF. ELEV.

CLIENT **Sox Real Estate LLC** NO. **24-G-29759** DATE DRILLED **1/7/2025**

GROUND WATER OBSERVATION

20.0 FEET BELOW SURFACE AT COMPLETION

_____ FEET BELOW SURFACE AT 24 HOURS

_____ FEET BELOW SURFACE AT ____ HOURS

Proportions Used

Trace	Less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

140 lb Wt. x 30" fall on 2" O.D. Sampler

Cohesionless Density

0 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
50 +	Very Dense

Cohesive Consistency

0 - 4	Soft
4 - 8	Medium Stiff
8 - 15	Stiff
15 - 30	Very Stiff
30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
	2.5	0.0-1.5	SS	4	5	5	V Moist to Moist	1.0	Topsoil
								2.0	Brown Mottled Gray Lean Clay with Sand (CL) - moderate plasticity, few fine to coarse sand
	4.0	2.0-3.5	SS	6	6	5	Moist		Brown Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel
	4.5+	4.0-5.5	SS	6	6	9	Moist		
5									
	4.5+	8.5-10.0	SS	6	9	9	Moist		
10									**Water Seepage at 12'**
	1.0-4.5+	13.5-15.0	SS	11	14	15	V Moist to Wet		
15								15.0	Gray Silty Sand (SM) - mostly fine to coarse sand, few silt
	--	18.5-20.0	SS	12	12	17	Moist		
								20.0	BOTTOM OF BORING: 20'

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TEST BORING LOG

PROJECT NAME **Darby Creek Meadows Residential - OH S.R. 736 - Plain City, OH** BORING NO. **B-6**

PROJ. SURF. ELEV.

CLIENT **Sox Real Estate LLC** NO. **24-G-29759** DATE DRILLED **1/7/2025**

GROUND WATER OBSERVATION

14.0 FEET BELOW SURFACE AT COMPLETION

_____ FEET BELOW SURFACE AT 24 HOURS

_____ FEET BELOW SURFACE AT ____ HOURS

Proportions Used

Trace	Less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

140 lb Wt. x 30" fall on 2" O.D. Sampler

Cohesionless Density

0 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
50 +	Very Dense

Cohesive Consistency

0 - 4	Soft
4 - 8	Medium Stiff
8 - 15	Stiff
15 - 30	Very Stiff
30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
	0.5-2.0	0.0-1.5	SS	5	4	4	V Moist to Moist	1.0	Topsoil
								2.0	Brown Mottled Gray Lean Clay with Sand (CL) - moderate plasticity, few fine to coarse sand
	4.5+	2.0-3.5	SS	4	5	7	Moist		Brown Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel; contains layers of silty sand (SM)
	4.5+	4.0-5.5	SS	4	5	5	Moist		
5									
	4.5+	8.5-10.0	SS	6	7	7	Moist		
10									
								13.0	**Water Seepage at 13'**
	1.5	13.5-15.0	SS	11	15	17	V Moist to Wet		Gray Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel; contains lean clay layers; contains rock fragments
15									
	4.5+	18.5-20.0	SS	15	15	20	Moist		
								20.0	BOTTOM OF BORING: 20'

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TEST BORING LOG

PROJECT NAME **Darby Creek Meadows Residential - OH S.R. 736 - Plain City, OH** BORING NO. **B-7**

PROJ. SURF. ELEV.

CLIENT **Sox Real Estate LLC** NO. **24-G-29759** DATE DRILLED **1/7/2025**

GROUND WATER OBSERVATION

None FEET BELOW SURFACE AT COMPLETION

_____ FEET BELOW SURFACE AT 24 HOURS

_____ FEET BELOW SURFACE AT ____ HOURS

Proportions Used

Trace	Less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

140 lb Wt. x 30" fall on 2" O.D. Sampler

Cohesionless Density

0 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
50 +	Very Dense

Cohesive Consistency

0 - 4	Soft
4 - 8	Medium Stiff
8 - 15	Stiff
15 - 30	Very Stiff
30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
	3.5	0.0-1.5	SS	5	4	4	Moist	1.0	12" Topsoil
	4.0	2.0-3.5	SS	4	4	6	Moist	3.5	Brown Mottled Gray Lean Clay with Sand (CL) - moderate plasticity, few to little fine to coarse sand
5	4.5+	4.0-5.5	SS	4	5	6	Moist		Brown Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel; contains layers of silty sand
	2.0	8.5-10.0	SS	5	7	7	Moist to V Moist		
10								13.0	
	--	13.5-15.0	SS	11	15	15	V Moist to Wet		Brown Poorly Graded Gravel with Clay and Sand (GP-GC) - mostly fine to coarse gravel, some sand, little clay
15								16.0	
	4.5+	18.5-20.0	SS	12	13	17	Moist		Gray Sandy Lean Clay (CL) - Glacial Till - moderate plasticity, some fine to coarse sand, few gravel
								20.0	BOTTOM OF BORING: 20'

*** The stratification lines represent the approximate boundary between soil types and the transition may be gradual.**

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TEST BORING LOG

PROJECT NAME **Darby Creek Meadows Residential - OH S.R. 736 - Plain City, OH** BORING NO. **B-8**

PROJ. SURF. ELEV.

CLIENT **Sox Real Estate LLC** NO. **24-G-29759** DATE DRILLED **1/7/2025**

GROUND WATER OBSERVATION

10.0 FEET BELOW SURFACE AT COMPLETION

_____ FEET BELOW SURFACE AT 24 HOURS

_____ FEET BELOW SURFACE AT ____ HOURS

Proportions Used

Trace	Less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

140 lb Wt. x 30" fall on 2" O.D. Sampler

Cohesionless Density

0 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
50 +	Very Dense

Cohesive Consistency

0 - 4	Soft
4 - 8	Medium Stiff
8 - 15	Stiff
15 - 30	Very Stiff
30 +	Hard

LOCATION OF BORING **See Boring Location Plan**

DEPTH	Pocket Penetrometer (tsf)	Sample Depths From To	Type of Sample	Blows per 6" on Sampler From To 0-6	6-12	12-18	Moisture Density or Consist.	Strata Change Depth*	SOIL IDENTIFICATION Remarks include color, type of soil, etc. Rock-color, type, condition, hardness
	1.5	0.0-1.5	SS	2	1	2	Moist to Very Moist	1.4	Topsoil
	2.0	2.0-3.5	SS	2	2	3	Moist		Brown Mottled Gray Lean Clay with Sand (CL) - moderate plasticity, few fine to coarse sand; rock fragments near 4' depth
	0.5	4.0-5.5	SS	3	4	5	Very Moist	6.0	**Water Seepage at 6'**
5									
	--	8.5-10.0	SS	6	5	7	Wet	12.0	Brown Poorly Graded Gravel with Clay and Sand (GP-GC) - mostly fine to coarse gravel, some sand, little clay
10									
	--	13.5-15.0	SS	10	10	13	Wet		Gray Silty Sand with Gravel (SM) - mostly fine to coarse sand, little gravel, little silt
15									
	--	18.5-19.0	SS	50/6			Wet	20.0	BOTTOM OF BORING: 20'

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