MONTGOMERY COUNTY HEALTH DEPARTMENT

REQUEST FOR PROPOSALS FOR
DESIGN-BUILD CONSTRUCTION SERVICES

MARCH 17, 2025

117 Civic Center · Mt. Sterling, KY 40353
859-498-3808 PHONE · 859-498-9082 FAX

Section 1.0 – Introduction:

Project Name: Montgomery County Health Department

Project Location: 109 Commonwealth Drive, Mount Sterling, Kentucky

Point of Contact: Allison Napier, RN, MBA

Public Health Director

Montgomery County Health Department

Phone: 859-497-2422

Email: AllisonL.Napier@mchdky.org

1.1 - Key Dates:

RFP Issuance Date: Monday, March 17, 2025

Last Day for Questions: Monday, April 7, 2025 at 4:00 pm

Addendum Issued (as necessary) : Friday, April 11, 2025 at 4:00 pm

Bid Due Date: Tuesday, April 29, 2025 at 2:00 pm

Short List Interviews: To Be Determined upon receipt of Proposals

Estimated Time to Complete: 18 months from date of award of contract (or as otherwise outlined by Design-Builder)

NOTE: *This schedule is subject to adjustment, modification, postponement or cancellation by the Montgomery County Health Department for its best interests.

1.2 - Invitation:

On behalf of Montgomery County Taxing District and Montgomery County Health Department, you are hereby invited to submit a bid for the design and construction services necessary to construct a new Health Department facility. The new facility will house all existing services and functions located at 108 East Locust Street, Mount Sterling, Kentucky. The new health department will be located on the recently purchased 4 acre tract at 109 Commonwealth Drive, Mount Sterling, Kentucky. This RFP is a continuation of the programming and schematic design exercise conducted by the Montgomery County Health Department staff. The Site Survey, Geotechnical Exploration Report, Building Program and Schematic Design documents are included in the Appendix of this Request For Proposals and should serve as the basis for the design efforts.

1.3 - Project Description:

The Montgomery County Health Department desires to build a new one (1) story, approximately 15,100 sf facility. The facility will provide health services, administrative offices, meeting rooms, public spaces, and community space for the people of Montgomery County. The project is intended to address the growth needs of the Health Department while also providing a facility with improved operational efficiencies. The Montgomery County Health Department Board has requested a Design-Build delivery method for the project as they believe this is the construction delivery method that facilitates the best professionals services synergies on the Owner's behalf. The Montgomery County Health Department will own the facility upon the completion of construction and does not wish to lease or enter into any other contractual arrangements with any interested third parties.

Section 2.0- General Design Requirements:

Below is a list of scope items that should be assumed when estimating the Owner's expectations for the project:

2.1- Preliminary Code Information:

The following is a preliminary code overview. It will be the responsibility of the selected design professionals to verify that the design meets all standards and requirements set forth in the Kentucky Building Code and all other applicable codes having jurisdiction.

- Anticipated Use Groups and Classification: Unseparated mixed use (B) Business, (S-2) Storage- Low Hazard, (A-3) Assembly
- Construction Type: II B
- Sprinkler Type: Fully-sprinklered NFPA 13
- The fire protection system will be designed for NFPA 13 for the full facility. The building will be a wet system except for the Charts and High Density Document Storage Room which shall include a chemical suppression system.
- Building Area: 15,100 sf
- Building Height: 20'-0" above grade plane (1 story)

2.2- Civil/Site Scope:

1. Remove and stockpile any topsoil from under proposed building and paving areas and redistribute to landscaping mounds to be located within the property line. Additional excess topsoil shall either be removed for the site or installed in borrow areas not contemplated for future pavement areas.
2. Complete parking area to be drained utilizing precast concrete structures and ADS piping. Drainage calculations and profiles to be performed by civil engineer licensed in the state of Kentucky.
3. All storm water from the building is to be hard piped to storm system. Drainage spilt to splash blocks at grade are not permissible.
4. The Contractor shall install a minimum of 4" of well graded, clean topsoil in all green areas indicated on the concept plan.
5. All green areas within the curb islands, landscape beds and along the foundation

wall shall include a minimum of 6" of well graded, clean topsoil.

6. Any imported fill material shall be subject to review and acceptance by the Owner and Construction Materials Testing Agent.
7. It shall be assumed that all structural cut and fill areas shall be compacted to 95% of Standard Proctor or to the minimum recommendations of the Geotechnical Engineer, whichever is greater.
8. Provide CMU dumpster enclosure with masonry veneer to match the building. Dumpster pad and enclosure to meet all local regulatory requirements.
9. Erosion control / traffic control / temporary protections during construction, where necessary are essential and required. Such controls shall comply with all local/state/federal codes.
10. The site paving and concrete will be designed around the following specifications:
    - <u>Light Duty Asphalt Pavements (car parking)</u>
        - 6" thick layer of compacted (95% of maximum dry density as determined by modified Proctor) stone base
        - 3.5" thick layer of asphalt binder course; and,
        - 1.5" thick layer asphalt surface course.
        - All roads and parking areas shall be bounded by concrete curb and gutters.
        - Handicap designation signage, site vehicular and pedestrian wayfinding signage.
    - <u>Heavy Duty Asphalt Pavements (vehicle driving loop)</u>
        - 8" thick layer of compacted (95% of maximum dry density as determined by modified Proctor) stone base
        - 4.5" thick layer of asphalt binder course; and
        - 1.5" thick layer asphalt wearing course.
        - All roads shall be bounded by concrete curb and gutters.
    - <u>Concrete sidewalks and aprons:</u>
        - 6" thick layer of compacted stone base (95% of maximum dry density as determined by modified Proctor) for aprons. Minimum 4" thickness for pedestrian sidewalks
        - 3,500 psi concrete (air-entrained)
        - Provide uniform light broom finish.
        - All expansion joints every 20-30 feet and at intersections with rigid structures
        - Control joints spaced 4-6 feet at depth of ¼ slab thickness
11. Site detention is the responsibility of the civil design professional and should be included in the Design-Builder's proposal.

12. Landscape shown in renderings is for reference purposes only but attractive site plantings should be provided for the project.
13. Provide allowance for ground mounted site sign with ground lit accent lighting.
14. Site utilities are accessible from the public right of way (see survey). All utilities and tap fees are per local authority having jurisdiction. Tap fees to be paid by Owner upon completion of final design and calculations. Fees paid by Owner but coordinated and submitted by Design-Builder.
15. Provide all necessary ADA signage and stripping in site design package to meet all state and local regulations.

2.3- Structural Scope:

1. Concrete slab on grade is assumed to be 4" Conc. (4ksi) w/ 4x4 W4.0 WWF over 6mil Vapor Barrier over 4" DGA stone base.
2. Typical slab on grade assembly referenced above is assumed for the entire building except in the High Density Files area where a recessed slab for a compact rolling file storage system is required.
3. Design-Builder will be responsible for performing a Geotechnical Evaluation of the site to provide the foundation design that is most appropriate for the project. A Preliminary Geotechnical Evaluation is attached in the Appendix for your review.
4. Preliminary geotechnical findings suggest typical continuous and spread footings with an allowable soil bearing capacity of 2,000 psf and an allowable rock bearing capacity of 8,000 psf.
5. Conventional steel columns, beams and bar joists is the expected and preferred framing system for the building, however it is the Engineer of Record's responsibility to determine and design the structural system to comply with all state and local regulations and with concern for first cost.
6. No pre-engineered metal building or pole barn structural framing systems are acceptable for this project.
7. Roof framing members need to assume roof top mounted equipment appropriate to provide adequate heating, cooling and zone control for the Health Department.

8. Sloped roof structure is anticipated to provide positive drainage and minimize built up roof insulation.

2.4- Exterior Architectural Scope:

1. Renderings provided are included for reference purposes and to provide a general expectation of the Montgomery County Health Department's desired aesthetic exterior appearance.
2. Renderings represent a combination of modular face brick and exterior insulation and finish systems (EIFS) exterior cladding. Primary building entry elements are clad with composite metal panel rainscreen system. See building elevations for extent of exterior veneers.
3. All exterior wall assemblies are assumed to be 6" metal stud assemblies with batt insulation, 5/8" dens glass sheathing, continuous 1 ½" exterior rigid insulation, fluid applied vapor barrier and veneer assembly. All metal stud calculations to be provided by Design-Builder.
4. Provide all flashing, weeps, vents and waterproofing for exterior wall assemblies.
5. Roof system is assumed to be 60 mil single-ply Thermoplastic polyolefin (TPO) roofing system mechanically fastened over rigid insulation. Provide cover board if required for 30 year warranty. Provide walk pads to roof top equipment to protect membrane system.
6. Provide roof access hatch from mechanical room. No exterior roof ladders are permissible unless appropriate ladder cage and lockable hardware is provided.
7. Roofing system to carry standard 30 year warranty.
8. Building envelope must be compliant with all Internation Energy Code Council (IECC) standards and guidelines for energy code compliance.
9. Sloped structure to aluminum gutters and downspouts are assumed at this time. See building elevations. Maintain uniform insulation thickness, but assume tapered insulation will be required to achieve positive drainage based on building geometry.
10. All exterior windows and doors to be aluminum storefront assemblies with low-E glazing (Solarban 60 or similar). Store front assemblies to be kynar-coated from manufacturer's list of standard colors.

11. Exterior canopies shown on exterior renderings are for reference purposes. Provide standard pre-engineered canopy systems in pre-finished aluminum cladding in manufacturer's standard color range.
12. Provide dimensional lettering/signage on front entry canopy as indicated in concept renderings. Assume building graphics and signage as indicated in concept renderings.
13. Provide pre-finished aluminum copings.
14. Provide all required blocking and substructure for mounting of building signage and elements indicated on building elevations and renderings.

2.5- Interior Architectural Scope:

1. All general purpose interior framing is to be light gage 3 5/8" or 6" metal studs at 16"o.c.
2. All Corridors, Community Room, Kitchen, Restroom, High Density Files, Labs and Exam Rooms and any smoke tight or fire rated walls are to receive metal studs to deck. All walls to deck to be 6" metal studs at 16"o.c. All walls not required to close to deck to be terminated 12" above ceiling height.
3. All Exam Rooms, Administrative Offices, Meeting Rooms and Restrooms are to receive sound batt attenuation.
4. All walls are to receive 5/8" gypsum board. All rated walls to receive the appropriate fire rated assemblies. Any walls receiving surface applied finish covering to have compliant wall sheathing mounting.
5. All interior drywall assemblies to be primed and painted. Colors selected by Owner from manufacturer's standard color range.
6. All Corridors, Lab and High Density File Storage rooms to have minimum 9'-6" ceiling heights.
7. All Administrative Offices, Clerks stations, Breakrooms and Departmental Storage spaces to have minimum 8'-6" ceiling heights.
8. All Meeting Rooms, Open Offices, Foyers and Waiting Areas to have minimum 10'-0" ceilings.
9. Assume decorative soffits and/or ceiling treatments in the Community Room, Waiting Room and Foyer.
10. All metal stud assemblies to have 4" vinyl base. Owner to select base colors from manufacturer's full range of standard colors and finishes.

11. Restrooms to have solid phenolic toilet partitions in all multi-fixture restrooms. Owner to select colors from manufacturer's full range of standard colors and finishes.
12. Provide stainless steel toilet accessories per Bobrick's standard offerings or equivalent manufacturer.
13. All interior doors to solid core wood doors in storefront frames. Assume glazed store front sidelites for the Community Room entries, the Health Education Office, Meetings, Open Office Spaces, Clerks and all Administrative offices. Provide lockable stainless steel grade 2 hardware sets for all doors.
14. Provide appropriate code compliant egress hardware for exterior doors.
15. All furniture will be Owner-provided and will not be included in the Design-Builders proposal.
16. Provide casework allowance per the following:
    1. Laminate clad base and upper cabinets in the following rooms:
    2. Rooms with laminate tops: Work/Copy Area, Clerks, & Check-in areas
    3. Rooms with solid surface tops: Kitchen, Break Rooms, and Lab.
    4. Assume higher finish at Check in desk.
    5. Assume drop-in sinks in areas referenced in the concept plans.
    6. Casework allowance should meet AWI quality standards without requiring certificate participation.
    7. Provide tempered glazing with sliding glass at all Clerk's counters with pass through document slots.
17. Provide stainless steel rolling shutter and laminate counter top between Community Room and Community Room Kitchen.
18. Provide stainless steel sample pass through window between Lab and Lab Restroom.

2.6- Interior Room Finish Groups:

<u>Typical Office, File + Departmental Storage, Clerks Finishes:</u>

- Flooring: 2'x2' Carpet Tile (16-28 oz per square yard) with contact grade backing system and wear warranty.
- Base: 4" vinyl base
- Wall finish: 5/8" gypsum wall board with latex painted finish with permittable VOC tolerances for commercial construction

- Ceiling: 2'x2' Acoustic Ceiling Tile

Waiting Room and Lobby Finishes:

- Flooring: Luxury Vinyl Tile (LVT) with a high traffic wear thickness of 20 mil or equivalent high traffic performance thickness
- Base: 4" vinyl base
- Wall finish: 5/8" gypsum wall board with latex painted finish with permittable VOC tolerances for commercial construction
- Ceiling: Combination exposed/painted structure and 2'x2' acoustic ceiling clouds with 6" compass edge trim

Conference and Meeting Room Finishes:

- Flooring: 2'x2' Carpet Tile (16-28 oz per square yard) with contact grade backing system and wear warranty
- Base: 4" vinyl base
- Wall finish: 5/8" gypsum wall board with latex painted finish with permittable VOC tolerances for commercial construction
- Ceiling: 2'x2' Acoustic Ceiling Tile
- Assume decorative or elevated lighting fixtures

Typical Open Workspace and Community Room Finishes:

- Flooring: Luxury Vinyl Tile (LVT) with a high traffic wear thickness of 20 mil or equivalent high traffic performance thickness
- Base: 4" vinyl base
- Wall finish: 5/8" gypsum wall board with latex painted finish with permittable VOC tolerances for commercial construction
- Ceiling: Combination exposed/painted structure and 2'x2' acoustic ceiling clouds with 6" compass edge trim

Typical Exam and Lab Room Finishes:

- Flooring: Welded sheet vinyl flooring has been specified due to its performance and first cost.
- Base: Integral sheet vinyl cove base
- Wall finish: 5/8" gypsum wall board with epoxy painted finish
- Ceiling: 2'x2' Acoustic Ceiling Tile

Typical Storage Finishes:

- Flooring: Tinted sealed concrete flooring
- Base: 4" vinyl wall base
- Wall finish: 5/8" gypsum wall board with latex painted finish
- Ceiling: No ceiling – Exposed/painted structure

Typical Corridor and Break Room Finishes:

- Flooring: Luxury Vinyl Tile (LVT) with a high traffic wear thickness of 20 mil or equivalent high traffic performance thickness
- Base: 4" vinyl base
- Wall finish: 5/8" gypsum wall board with latex painted finish with permittable VOC tolerances for commercial construction
- Ceiling: 2'x2' acoustic ceiling tile with metal stud and drywall soffits at corridor transitions
- Provide corner guards for metal stud wall assemblies

Typical Restroom and Kitchen Finishes:

- Flooring: 2'x2' ceramic tile
- Base: Ceramic tile base
- Wall finish: 5/8" gypsum wall board with latex painted finish with permittable VOC tolerances for commercial construction. Ceramic tile up to 7'-4" aff on all restroom walls.
- Ceiling: 2'x2' acoustic ceiling tile

2.7- Mechanical Scope:

The mechanical scope of work includes new equipment, distribution systems, and control systems to support the proposed new facility.

1. The building will primarily be served by rooftop mounted packaged HVAC equipment with zone level temperature control provided by variable air volume boxes (VAV) with electric reheat.
2. Water, natural gas, storm, and sanitary will all be interconnected to the local utilities available at the perimeter of the building site.
3. The rooftop units will be broken into zones to serve similar spaces. The units are further divided to limit the overall size of the rooftop units and allow for better ductwork coordination.
4. All rooftop units will be required to have unit screens.
5. Heat gain and heat loss calculation will be performed in accordance with the current edition of the ASHRAE Handbook of Fundamentals and the latest edition of the ASHRAE Cooling and Heating Load Calculation Manual.
6. The Heating and Cooling Load calculations will be performed on a room-by-room basis. The design will comply with ASHRAE 90.1.
7. The amount of outside air utilized for ventilation will comply with the requirements of ASHRAE Standard 62.1-2010 Ventilation for Acceptance Indoor Air Quality as well as the AIA Guidelines
8. Actual light fixture count and heat release data will be utilized to calculate the heat dissipated by the lights into each space.
9. Minimum ventilation air flow shall be provided in accordance with ASHRAE 62.1. Actual outdoor air quantities for all areas shall be based on occupancy, room pressurization, and make-up for local exhaust air ventilation as needed.
10. A Building Automation System will be necessary to serve the mechanical equipment that provides the heating, cooling, and ventilation. This scope includes all hardware, panels, controllers, input/output (I/O) modules, low voltage transformers, switches, relays, control devices, wiring, programming, graphics, alarms, trending, and installation necessary to control and monitor all mechanical equipment. This system will be provided by a contractor who is approved to install a web-based building management system as manufactured by Distech, Automated Logic, JCI, or similar.

11. Provide labeling notes for piping and equipment.
12. The mechanical systems will be designed in accordance with the following codes and standards:
    - Codes
        - Kentucky Building Code 2015 (IBC 2015)
        - International Mechanical Code 2015 (IMC 2015)
        - International Energy Conservation Code 2012
        - 2012 NFPA 54 National Fuel Gas Code
        - 2013 NFPA 13
        - NFPA 72 (Fire Alarm)
    - Standards
        - ASHRAE 62.1
        - ASHRAE 90.1
        - 2021 ASHRAE Handbook – Fundamentals
        - OSHA (Occupational Safety and Health Administration)
        - International Standard ISO 14644-4
        - ASHRAE Laboratory Design Guide-Second Edition
        - ASCE/SEI Standard 7

2.8- Plumbing Scope:

The plumbing scope of work includes new fixtures, devices, distribution systems, and control systems to support the proposed new facility.

1. All plumbing fixtures shall be installed in compliance with water conservation and ADA standards.
2. All pipes penetrating fire rated walls and floors will be caulked and sealed to maintain fire- rating integrity using a UL approved system.
3. Sleeves will be provided for pipe penetrations at floors, fire-rated partitions, and roofs.
4. Piping shall be distributed in Type L copper tubing, ASTM B88, wrought copper fittings with lead free soldered joints is preferred, however PEX piping is acceptable for interior plumbing piping.
5. All hot and cold-water piping will be insulated with fiberglass insulation with all service jacket.
6. A PVC pipe jacket or canvas wrap will be provided when exposed to view and in high traffic areas (i.e.: Mechanical Room) up to 8’-0” above finished floor.

7. Sanitary drainage, waste and vent piping will be provided to collect gravity waste from toilet rooms, break areas, custodial closet, mechanical areas, and equipment.
8. All plumbing fixtures including floor drains will be trapped and vented per the KY Plumbing code.
9. Vents will be extended through the roof and discharged to the atmosphere as 4-inch vents through the roof.
10. Vent piping shall be sized per code based on the number of fixtures served and discharge through the roof a minimum of 25 feet distance from any outside air intake or building opening.
11. Cleanouts shall be provided at the base of each stack.
12. Floor cleanouts shall be provided every 75 feet as well as change in direction of piping. These locations shall be coordinated with the architectural design.
13. All sinks in plastic laminate counters are to be drop in fixtures selected by the design professionals.
14. A double bowled drop in sink fixture and floor drain is required in the Community Kitchen.
15. All appliances in the Kitchen will be owner provided but water lines will be required for refrigerators (2), dishwasher and ice maker. Community kitchen is intended for light commercial use and its not intended to be a full-service food preparation kitchen.
16. All piping and valves require labeling throughout building
17. Floor drains are required in all restrooms and mechanical rooms.
18. Hose bibs are required in all restrooms.
19. Under 2.8, New Item, do you want to include anything regarding WH or any recirc loop requirements?

2.9- Fire Alarm Scope:

1. The building will have an addressable fire alarm installed per applicable Code.
2. The fire alarm manufacturer is to be a proven, reputable company with the ability to maintain, expand, and support the fire alarm installation and future revisions.
3. Approved manufacturers include JCI (Simplex), Notifier, Honeywell, Edwards (EST), Siemens.,

2.10- Electrical Scope:

The electrical systems are holistic and are to be coordinated with all other trades.

1. Main Electrical Service from local utility Kentucky Utilities (KU)
2. Main Incoming Switchboard and Distribution Panels
3. Power, Lighting, and Receptacle Panelboards Lighting and Receptacles
4. Uninterruptable power supply systems (UPS) Grounding
5. Communications System
6. Security/Access Control/Surveillance System Emergency/Standby Power Generator equipment

The electrical systems will be designed in accordance with the following standards, codes, and regulations:

- Applicable Piramal guidelines and standards
- 2018 Kentucky Building Code
- 2015 International Building Code
- 2017 National Electrical Code (NEC) – NFPA 70.
- 2013 National Fire Alarm Code – NFPA 72
- 2013 Life Safety Code – NFPA 101
- NFPA 70E – Standard for Electrical Safety in the Workplace
- 2012 International Energy Conservation Code (IECC)
- Underwriter's Laboratory (UL)
- OSHA and LOTO compliant
- National Electrical Manufacturers Association (NEMA)
- 2012 NFPA 101

2.11- Backup Power Generator Scope:

A new diesel fuel generator is to be installed in a rated weatherproof exterior enclosure to provide backup power for both life safety and critical equipment. The size of the emergency generator is to be confirmed when connected loads are provided. At this time the size of the emergency generator is assumed to be 750 kW at 480 Volt, 3 Phase, 4 Wire. Design-Builder to provide automatic transfer switch (ATS) with generator package.

2.12- Uninterruptable Power (UPS) Work Scope:

A new 250 kW, 3-phase 480 Volt, 3 Phase, 4 Wire in, 208/120 Volt, 3 Phase, 4 Wire out, centralized UPS system will be provided to serve critical circuits. The new UPS will feed the following:

- Telecommunication Equipment (network switches)
- Security equipment controllers and equipment
- Lab equipment and special devices necessary for facility operation
- The UPS is sized with sufficient spare capacity to serve additional critical loads.
- The output side of the UPS will feed a new 208/120 Volt, 3-phase, 4-wire distribution panel with an 800-amp main circuit breaker.
- The UPS distribution panel shall be specified to have a surge protection device (SPD), copper bus, 200% neutral buses, individual ground buses and bolt-on type circuit breakers.
- UPS is to have networked status reporting and alarm notification.
- Locate UPS in dedicated room.

2.13- Lighting Scope:

The lighting will be designed per IESNA guidelines and will meet requirements of the 2012 International Energy Conservation Code (IECC).

2.14- Interior Lighting:

1. All lighting is to utilize LED technology.
2. Lighting in corridors and common spaces will be accomplished with 2’ x 4’ volumetric lensed LED troffers.
3. Meeting Rooms and the Community Room will have downlights and/or decorative fixtures for aesthetic emphasis. These fixtures will be dimmed and switched.
4. Lighting in office spaces will be 2’ x 4’ lay-in volumetric LED troffers. These fixtures will be dimmed and switched.
5. Lighting in the support spaces will be 2’ x 4’ prismatic lensed LED troffers where there is a ceiling and 4’ LED chain hung industrial strips in locations without ceilings. These fixtures will be non-dimmed and switched.
6. Exit signs are to be edge lit LED with self-test diagnostics.

7. Design-builder responsible for layout of all night lights/emergency fixtures throughout the facility.

2.15- Site Lighting:

1. Site Lighting: will be provided for all parking areas, walkways, and access roads.
2. Parking and roadway lighting will consist of LED architectural area lighting fixtures on 20' aluminum poles.
3. Site lighting will be selected to deliver an average of 2-foot candles along the walking path and utilize 3500K lamps if available from KU.
4. Building mounted exterior lights may also be utilized to supplement the parking and walkway lighting.
5. All exterior lights are to be photocell controlled per Energy Code.

2.16- Access Control/Security Scope:

1. The building will have a networked, integrated security system that includes card access control, electrified door hardware, door alarms, intrusion detection, CCTV monitoring and surveillance, and duress alarm.
2. The perimeter of the building is to be controlled and monitored.
3. Closed Circuit Television (CCTV) will include fixed mounted IP type cameras with vari-focal lenses to monitor certain areas of the building.
4. All required cameras will be wired to a monitoring station for security and stored on network or cloud for a minimal of 30 days to allow recall and media transfer as needed.

2.17- Preliminary Design Documents:

Previous work completed for this project include the following:

- ALTA Survey
- Preliminary Geotechnical Evaluation
- Phase 1 Environmental Site Assessment
- Architectural Program Documents
- Conceptual Site Plan
- Schematic Floor Plan
- Building Elevations

- Exterior Renderings (4)

The Design-Builder is to use these documents for REFERENCE ONLY, to assist in determining the program needs of the new facilities and improvements and shall provide their own design and Construction Documents for this project that accomplish the intent of this "NOT FOR CONSTRUCTION" reference set.

The Montgomery County Health Department does not warrant to the Design-Builder that these reference documents comply with the requirements of the current Kentucky Building Code and other applicable codes that must be taken into consideration in the design and construction of these new facilities and improvements to this site. The project reference information and description provided is conceptual and should not be used in-lieu of the Design-Builder's independent judgment, design, or analyses.

Section 3.0 – Design Professional's Responsibilities:

1. Design Development: Services to include the continuation of the architectural and civil design services provided to date in the attached Schematic Design package (see Appendix).
2. The design professional shall produce and coordinate Construction Documents such as detailed drawings, technical specifications and permit review documents required for permitting and construction by the selected Design-Builder.
3. Coordination and permit submissions required for permitting through the Mt. Sterling Division of Building Inspection, the Division of Planning and Zoning and all jurisdictions having authority are the responsibility of the design professional.
4. Permitting Fees are not included in this proposal request and will be provided by the Owner. Such fees will be calculated, coordinated and shared with the Owner for their review and timely payment.
5. Compliance: Ensure design adhere to ADA accessibility standards, environmental regulations, and any health department-specific requirements identified during the design phase.
6. The design professional will provide Owner's Representative Services including all owner coordination and design services required to lead the Montgomery County Health Department through the design phase of the project and through Construction Administration.

7. All design professionals and firms must be licensed/ registered in the Commonwealth of Kentucky. Names and registration numbers of all professionals that will be provided in the Design-Builders proposal.
8. Final drawings must be sealed and signed by registered professionals for each respective discipline.

Section 4.0- Design-Builder's Responsibilities:

1. The Design-Builder will be responsible for all aspects of permitting, designing, constructing, monitoring, construction warranty (1-year from the Date of Final Completion), including all necessary associated tasks not otherwise noted or provided by Owner.
2. Permit fees are the responsibility of the owner, but it is the responsibility of the Design-Build team to coordinate and process the design and construction through the required permitting and inspection process.
3. The Design-Builder shall submit a complete set of design drawings, calculations and specifications, stamped by a Kentucky Registered Design Professionals, for each discipline required, for the Owners' approval at the conclusion of the Design Development and Construction Documents phases of this project. Approval to move to the next phase must be provided by the Owner. Delays in approval could require adjustment to the project schedule.
4. All permits and approvals must be obtained prior to beginning construction, but early procurement and expedited construction delivery methods (i.e. early Foundation and Grading Package, Long Lead Procurement Packages, etc) may be utilized if proposed by the Design-Builder and approved by the Owner.
5. Construction access and staging to the project site should be considered by the Design-Builder. The Design-Builder will work with the Owner and Using Agency in identifying and developing access and staging areas.
6. The Design-Builder shall provide as-built record drawings signed and sealed by the design professionals within 30 days of Final Completion of the project.
7. The Work shall be warranted for post Final Completion for one year. The Design-Builder will be responsible for repair or maintenance during this period at no cost to the Owner.

8. Individual warranties for products and systems that typically have a manufacturer's warranty shall commence at the date of Substantial Completion when it is determined.
9. The Design-Builder scope of work includes the services of a Design Professionals and its sub-consultants.
10. The Design-Builder shall not inhibit the Design Professional from performing the duties and responsibilities required by Law , Code or Industry standards required of a Design Professional.
11. All work shall be completed in a professional manner and at a minimum meet the requirements outlined in this RFP. The Design-Builder shall warrant that all work is completed in compliance with the requirements of this RFP and the applicable state and federal codes.
12. All proposed materials shall be reviewed for durability; maintainability; consistency with stated RFP requirements and/or as identified in the Design-Builders response to the RFP and design and construction documents.
13. Design-Builder to compile and present exterior and interior finish boards for the Owners approval based on products selected during design prior to final review and approval of construction documents phase of the project.
14. Cost estimate shall be provided at the 50% complete milestone of the Construction Document phase to ensure budgetary alignment for the Owner.
15. Design-Builder is responsible for Cost of installation and all on-going costs associated with all temporary utilities consumed during the construction period, up and until the date of substantial completion.
16. Temporary utilities and general conditions shall include, but not be limited to the following:

- Collection and disposal of waste to keep facilities clean.
- Temporary Facilities and utilities: such as telephone, electric, water, job trailer, temporary sanitary facilities, and other temporary protection and barricades (as necessary).
- A safe and efficient construction environment and site.
- Keeping roadways leading to the site free and clear of mud and debris.
- Control of dust, erosion and runoff throughout construction.
- Job site sign and way finding signage
- Design-builder to provide, implement and maintain a SWPPP

Section 5.0- Owner's Responsibilities:

The Owner shall be responsible for providing the following obligations and agreements to the Design-Build team.

1. The Owner shall provide timely review, input and approvals on all submittals that are of a time sensitive nature.
2. The Owner agrees to pay the design-build team for its proposed design services.
3. Net 30 terms are required for all design services and Net 30 terms are required for all construction draw requests.
4. The Owner has the authority to increase the GMP submitted by the Design-Builder should additional scope be desired or requested.
5. The Owner agrees to work with the design-build team to participate in any cost reduction savings exercises necessary to reduce the cost of the project.

Section 6.0 – Procurement Information:

The Purchasing Officer for this RFP is Allison Napier, RN, MBA - Public Health Director, Montgomery County Health Department

1. All questions, comments, concerning the procurement process, etc., or this RFP, shall only be directed to the Purchasing Officer
2. Questions regarding technical issues shall be directed in writing to the Purchasing Officer ONLY. All answers to technical questions will be issued by addendum only.
3. This RFP may be canceled, or all proposals rejected, if it is determined in writing by the Montgomery County Health Department that such action is in their best interest.
4. All Proposals become the property of the Montgomery County Health Department. The successful proposal will be incorporated into the resulting contract by reference.
5. The Montgomery County Health Department reserves the right to request clarification or additional information after receipt of proposals.

The Montgomery County Health Department may not accept revisions, or alterations to proposals after the proposal due date.

6. The issuance of this RFP neither constitutes a Commitment by the Montgomery County Health Department to award a contract, or to pay any costs incurred in the preparation of a response to this request.
7. Failure to acknowledge receipt of addenda in accordance with the instructions contained in the Addendum may result in the proposal not being considered.

Section 7.0- Proposal Submission Requirements:

All proposals must include the following information. Failure to include requested information could result in rejection of proposal submitted.

7.1 - Company Information:

1. Legal name and business address of the proposing firm.
2. A brief description of the firm's history and organizational structure.
3. Demonstarted history of firm experience in designing and/or constructing facilities of similar scale and function.

7.2 - Project Team:

1. Resumes and qualifications of key personnel, including Design-Builder's Project Manager, Architect of Record, Consulting Engineers, Construction Superintendent.
2. Roles and responsibilities of each team member.

7.3 - Experience and Qualifications:

1. Examples of similar projects completed by the firm and/or key personnel
2. Relevant certifications and/or qualifications in design, engineering, and construction.

7.4 - Cost Proposal:

1. Detailed cost breakdown, including design fees, construction costs, and any additional services.
2. Cost description of any allowances outlined above or recommended for the project should be clearly delineated and described.
3. Schedule of values, with a clear allocation of all project costs.
4. Project Contingency for potential cost overruns or unforeseen conditions.
5. Clear delineation of all project exclusions from the cost proposal.
6. Design-Builder to include a 5% Design Contingency Allowance for any cost-variances that occur or are requested during Construction Document production.
7. Design-Builder to include 5% Construction Continency Allowance for any unforeseen conditions that arise during construction.
8. Design-Builder shall agree to split 50/50 all unused contingencies referenced above with the Owner.
9. Design and Construction Allowances will not be used to correct failure of the Design-Builder to meet the minimum requirements of the RFP. Any necessary correction of failure of the Design-Builder to meet the minimum requirements of the RFP shall be made without cost to the Owner.

7.5 - Project Schedule:

1. A project schedule showing key milestones dates for phases of design, permitting, construction up to substantial completion.
2. Any project dependencies that may impact the schedule assumptions outlined in the project schedule.

7.6 - Insurance and Bonding:

1. Proof of insurance coverage (liability, workers compensation, etc.)
2. The successful Design/Builder shall furnish performance and payment bonds to the Owner. The performance bond shall be satisfactory to the Owner in an amount equal to one hundred percent (100%) of the contract sum as security for the faithful performance of the Contract.
3. The Design/Builder shall also furnish a payment bond satisfactory to the Owner in an amount equal to one hundred percent (100%) of the contract sum for the protection of all persons performing labor or furnishing

materials, equipment or supplies for the Design/Builder or his Subcontractor for the performance of the work.

4. Each bond furnished by the Design/Builder shall incorporate, by reference, the terms of the Contract as fully as though they were set forth verbatim in such bonds. In the event a Change Order(s), executed by the Design/Builder, adjusts the Contract Sum, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount.

Section 8.0- Evaluation Criteria:

The Selection Committee evaluation criteria and weight for each is as follows:

Criteria	Maximum Points Possible
Executive Summary	50
Design and Construction Experience	100
References	50
Interview and Presentation	100
Proposed GMP	200
Maximum Points Possible	500

GUARANTEED MAXIMUM PRICE PROPOSAL FORM

Design-Build Services
Montgomery County Health Department
Mount Sterling , Kentucky

Proposal Submitted By:

_____

_____

_____

_____

(Name and Address of Proposer)

DATE: _____, 20_____.

TO:

Montgomery County Health Department

117 Civic Center

Mt Sterling, Kentucky 40353

Telephone: 859-498-3808

The Design-Builder Proposer, having carefully examined the complete Request for Proposal and any Amendments, Clarifications, and Attachments thereto, proposes to furnish all labor, materials, supplies, and services required to complete the Work required by all the Contract Documents within the approved schedule for the stated Maximum Guaranteed Price.

The Proposer hereby acknowledges the receipt of the following Addenda:

Addendum No.		Dated			Addendum No.		Dated	
Addendum No.		Dated			Addendum No.		Dated	
Addendum No.		Dated			Addendum No.		Dated	

(In the spaces provided above, insert the number and the date of any Addenda issued and received. If none has been issued and received, the word “NONE” should be inserted.)

GUARANTEED PRICE OF:

Lump sum GMP:

_____DOLLARS and_____CENTS
(USE WORDS)

($_____)

(USE FIGURES)

This Guaranteed Maximum Price (GMP) includes two OWNER ALLOWANCES, which shall be reconciled and the unused portions of these ALLOWANCES returned to the Owner as indicate in the RFP:

Signature _____

Title _____

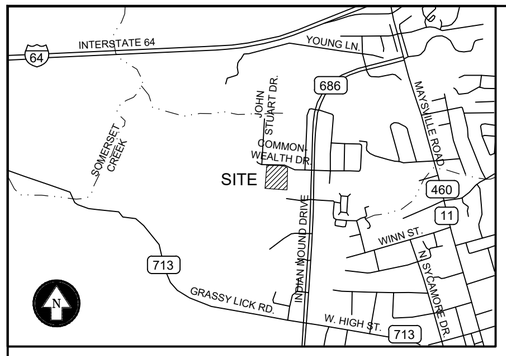
Company _____

Proposals sent to any other address will be deemed invalid. Unsigned proposal forms will likewise be deemed invalid. Owner of the above project reserves the right to reject any and all bids, to award the contract to any proposer other than the lowest bidder. Queries in relation to this proposal competition must be submitted by email to AllisonL.Napier@MCHDKY.org on or before March 31st at 4:00 pm EST .

SECTION 9.0 - APPENDIX (see attachments) :

- Site Survey
- Preliminary Geotechnical Report
- Schematic Design Drawings: Site Plan, Building Program areas, Floor Plan, & Exterior Elevations.
- Schematic Design Renderings (4)

END OF REQUEST FOR PROPOSAL



VICINITY MAP

SCALE: 1"=2000'

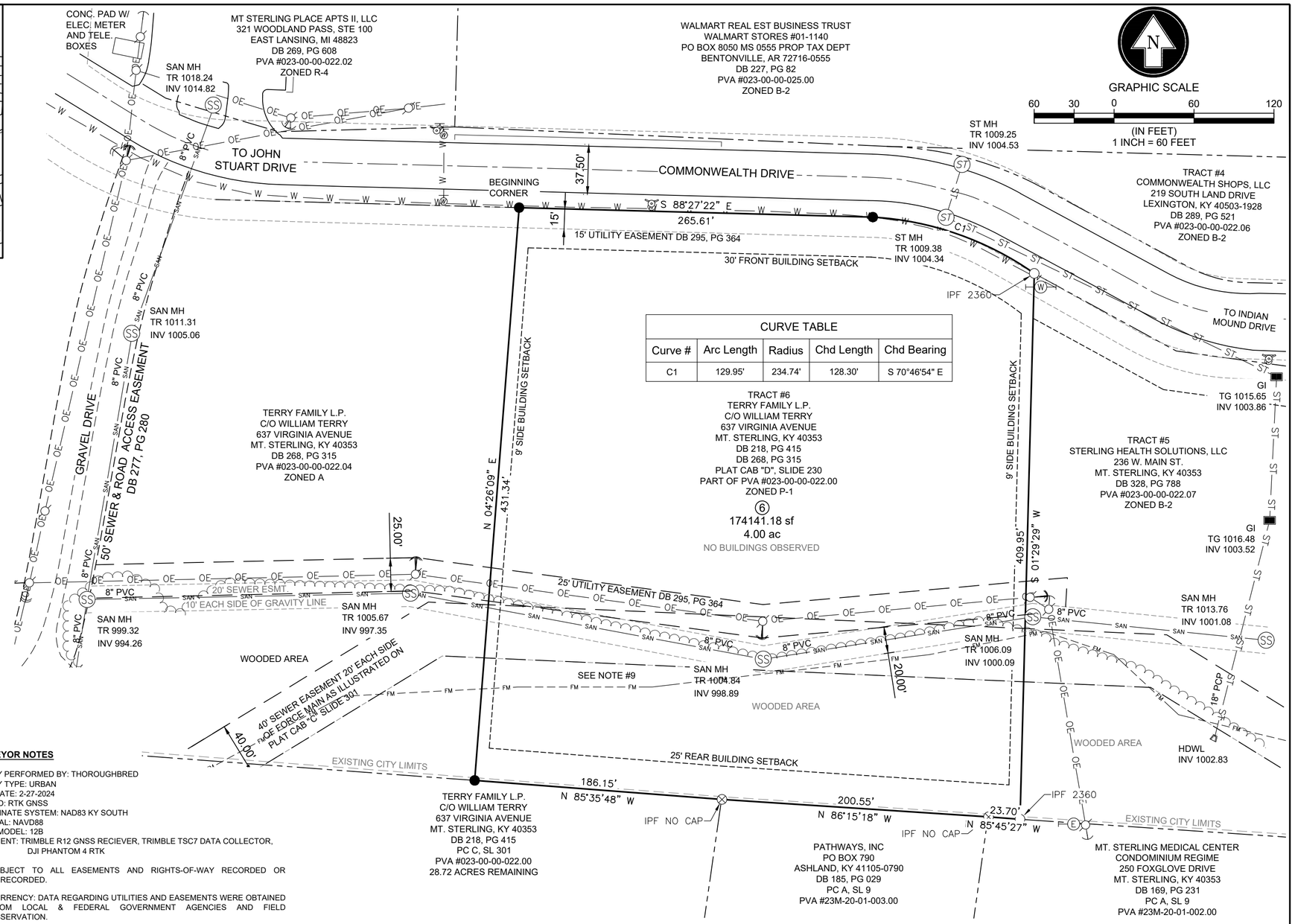
PROPERTY OWNER
TERRY FAMILY LIMITED PARTNERSHIP
C/O WILLIAM TERRY
637 VIRGINIA AVENUE
MT. STERLING, KY 40353

PROPERTY LOCATION
COMMONWEALTH DRIVE
MT. STERLING KY 40353
DEED BOOK 218, PAGE 415
DEED BOOK 268, PAGE 315
PLAT CAB "D", SLIDE 230

Site Statistics
PVA #: 023-00-00-022.00
Zoning: P-1
Property Size: 174141,18 sq. ft., 4.00 Acres
Setbacks:
Front: 30 ft
Side: 8 ft MIN (18 ft sum sides)
Rear: 25 ft

LEGEND

- PROPERTY CORNER FOUND (AS NOTED)
- IPS - 5/8" x 18" IRON PIN W/ CAP "PLS 4119" SET
- IRON PIN FOUND WITH NO CAP
- MEANDER CORNER/ PROPERTY CORNER (NOT SET)
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- UTILITY POLE
- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- GRATE INLET
- ELECTRIC METER
- ELECTRIC TRANSFORMER
- TELEPHONE BOX
- HEADWALL
- GUY ANCHOR AND WIRE
- CONTROL
- PROPERTY BOUNDARY LINE
- ADJOINERS APPR. BOUNDARY
- B.S.L. - BUILDING SETBACK LINE
- MOUNT STERLING CITY LIMITS
- EDGE OF GRAVEL
- EDGE OF ASPHALT
- CENTERLINE OF ROAD
- DITCH LINE
- ST — STORM DRAIN
- FM — 4" FORCE MAIN SANITARY SEWER LINE (NOT LOCATED)
- SAN — 8" GRAVITY SANITARY SEWER LINE
- OE — OVERHEAD ELECTRIC LINE
- W — WATER LINE
- CONTOUR LINES
- TREE DRIP LINE
- IPF — IRON PIN FOUND



SURVEYOR NOTES

SURVEY PERFORMED BY: THOROUGHBRED
SURVEY TYPE: URBAN
FIELD DATE: 2-27-2024
METHOD: RTK GNSS
COORDINATE SYSTEM: NAD83 KY SOUTH
VERTICAL: NAVD88
GEOID MODEL: 12B
EQUIPMENT: TRIMBLE R12 GNSS RECIEVER, TRIMBLE TSC7 DATA COLLECTOR, DJI PHANTOM 4 RTK

1. SUBJECT TO ALL EASEMENTS AND RIGHTS-OF-WAY RECORDED OR UNRECORDED.
2. CURRENCY: DATA REGARDING UTILITIES AND EASEMENTS WERE OBTAINED FROM LOCAL & FEDERAL GOVERNMENT AGENCIES AND FIELD OBSERVATION.
3. NO CEMETERY OR BURIAL GROUNDS WERE OBSERVED INSIDE THE SUBJECT TRACT DURING THE COURSE OF THIS SURVEY. NO RECENT EARTHWORK, ACTIVE CONSTRUCTION, OR BUILDING ADDITIONS WERE OBSERVED DURING THE COURSE OF THIS SURVEY.
4. FLOOD MAP #21173C0104D WITH AN EFFECTIVE DATE OF 1/06/2011 SHOWS THE SUBJECT SITE IS LOCATED IN FLOOD ZONE X, AREA AT MINIMAL FLOOD HAZARD RISK.
5. METHODOLOGY: THE BOUNDARY SHOWN AND DESCRIBED HEREON IS A TRUE AND CORRECT SURVEY AND IS AN URBAN CLASS SURVEY. THE MONUMENTS ARE AS SHOWN. METHOD OF SURVEY WAS CONDUCTED BY GPS "RTK" (REAL TIME KINEMATIC) BASE AND ROVER WITH A RELATIVE POSITIONAL ACCURACY OF 0.05' + 50 PPM AT A 95% CONFIDENCE LEVEL. THE HORIZONTAL DATUM IS NAD 1983. THE BEARINGS SHOWN HEREON ARE BASED ON THE KENTUCKY STATE PLANE NORTH ZONE COORDINATE SYSTEM DERIVED FROM A GPS SURVEY. THE DIRECTIONS AND DISTANCES SHOWN ON THE PLAT ARE NOT BASED ON AN ADJUSTED TRAVERSE. ALL PROPERTY CORNERS INDICATED HAVE BEEN MONUMENTED WITH A 5/8" IRON PIN (18" LENGTH, 5/8" DIAMETER) AND CAP STAMPED 4119 UNLESS OTHERWISE NOTED HEREON.
6. ACCURACY: THE TRIMBLE R12 RECEIVER HAS A STATED HORIZONTAL RTK ACCURACY OF 8MM + 1PPM AND A RTK VERTICAL ACCURACY OF +/- 15 MM + 1 PPM.
7. PROPERTY OWNERSHIP INFORMATION PROVIDED HEREIN IS BASED ON INFORMATION OBTAINED FROM READILY AVAILABLE SOURCES (I.E.; MONTGOMERY COUNTY PVA {RECORDED DEED BOOK 218, PAGE 415 AND PLAT CABINET D, SLIDE 230}. THEREFORE, NO WARRANTY IS PROVIDED REGARDING THE ACCURACY OF OWNERSHIP INFORMATION OR THE APPROXIMATE GRAPHICAL REPRESENTATIONS OF SUCH (ADJOINING PROPERTY LINES INCLUDING EASEMENTS ETC).
8. DUE TO THE ABOVE, THOROUGHBRED ENGINEERING, ASSUMES NO LIABILITY WITH REGARDS TO INFORMATION PERFORMED BY OTHERS, SHOWN OR OTHERWISE INFERRED. NOTHING CONTAINED HEREIN SHALL BE HELD AS A LEGAL WARRANTY, EXPRESSED OR IMPLIED.
9. THE ILLUSTRATED FORCE MAIN WAS NOT MARKED IN THE FIELD BUT IS SHOWN BASED ON INFORMATION PROVIDED BY THE KENTUCKY INFRASTRUCTURE AUTHORITY KENTUCKY WASTEWATER MAPPING. THE EASEMENT IS SCALED FROM THE RECORD PLAT WHICH STATES THAT IT IS CENTERED ON THE SEWER LINE, 20' BOTH SIDES.

PURPOSE

THIS PLAT IS TO UPDATE THE EASEMENT LINES, BUILDING SETBACK LINES AND ZONING INFORMATION, TO REFLECT THE ZONE CHANGE, THEREBY AMENDING SAID PREVIOUS PLAT OF TRACT 6, RECORDED IN PLAT CABINET "D", SLIDE 230.

CERTIFICATION OF OWNERSHIP AND DEDICATION

I (WE) HEREBY CERTIFY THAT I AM (WE ARE) THE OWNER(S) OF THE PROPERTY SHOWN AND DESCRIBED HEREON, AND THAT I (WE) HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY (OUR) FREE CONSENT, ESTABLISH THE MINIMUM BUILDING RESTRICTION LINES, AND PROPOSE TO DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS, AND OTHER OPEN SPACES TO PUBLIC OR PRIVATE USE AS NOTED.

OWNER(S) DATE

SURVEYOR'S CERTIFICATE

I DO HEREBY CERTIFY THE BOUNDARY SHOWN AND DESCRIBED HEREON IS A TRUE AND CORRECT SURVEY PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION.

SURVEYOR:

SURVEYOR 4119 — 7/19/24
DATE

STEPHEN M. FLINCHUM #4119
sflinchum@tbredfirm.com
THOROUGHBRED ENGINEERING
PO BOX 481
LEXINGTON, KENTUCKY 40588
(859) 785-0383

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING, ARCHITECTURE,
GEOTECHNICAL ENGINEERING, DRILLING SERVICES,
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

SECOND AMENDED RECORD PLAT
FORBES PARK
TERRY HEIRS
COMMONWEALTH DRIVE

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

OWNER:
TERRY FAMILY L.P.
637 VIRGINIA AVE, MONTGOMERY COUNTY
MT STERLING, KY 40353

CLIENT:
MONTGOMERY CO HEALTH DEPT
117 CIVIC CENTER, MONTGOMERY COUNTY,
MT STERLING, KY 40353

PROJECT NO.:	DRAWN BY:
240027	JBW/CLG
DATE:	REVIEWED BY:
7/18/24	SMF

FILENAME:
MONTGOMERY CO HEALTH DEPT SECOND AMENDED PLAT.DWG

REVISION:	DATE:
ORIG	7/19/24

STATE of KENTUCKY
STEPHEN M. FLINCHUM
4119
LICENSED PROFESSIONAL LAND SURVEYOR

PLAT SHOWN HEREON REPRESENTS A BOUNDARY SURVEY AND COMPLIES WITH 201 KAR 18:150

Preliminary
Geotechnical Evaluation

Montgomery County Health Department

Commonwealth Drive

Mount Sterling, Montgomery County, Kentucky 40353

Vicinity Map
(n.t.s.)

For

Montgomery County Health Department

117 Civic Center

Mount Sterling, Kentucky 40353

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383

CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN P. HANEY
LICENSED PROFESSIONAL ENGINEER

Cover Sheet

G - 0

Executive Summary

This Preliminary Geotechnical Evaluation was completed in general accordance with the 2018 Kentucky Building Code (KBC) and our agreement. This executive summary is meant to provide you with a brief overview and should not be the sole communication between us. You should review this entire Geotechnical Evaluation as a whole and provide us with any questions you may have.

Project information was provided by a request for proposal posted on a Montgomery County Health Department social media site on January 2, 2024. Additional information was provided via email with you on January 4, 2024 and correspondences over the past couple months. We understand the Health Department is currently evaluating a piece of land located along Commonwealth Drive for a possible new health department location. The tract is approximately 3 acres of clear land and 1 acre of wooded land.

Our geotechnical efforts began with a review of published soils, geology, and water information for this site. We specifically reviewed information from the United States Department of Agriculture (USDA), the Kentucky Geological Survey (KGS), the Federal Emergency Management Agency (FEMA), and historical aerial photographs from Google Earth.

Kentucky 811 was contacted prior to exploration to mark underground public utility lines. Marked water lines were noted along Commonwealth Drive along with a fire hydrant. Marked sanitary sewer lines were noted along the southern edge of the 3 acre section. An overhead electric line was also observed along the southern edge of the 3 acre section.

Geotechnical exploration began with a geophysical survey utilizing Electrical Resistivity Imaging (ERI) analyzing bedrock up to 40 feet below the existing grade. Geotechnical drilling followed ERI at eight locations across the site. Each boring extended to refusal which ranged from 2.7 to 7.0 feet below the existing grade.

Groundwater was encountered in one boring during drilling. Borings were left open for 24 hours to monitor groundwater levels. Groundwater was found to have seeped into three borings within the 24 hour period. All groundwater depths observed were less than 5 feet below the existing grade.

Geotechnical drilling encountered topsoil ranging in thickness from 3 to 8 inches. Following the topsoils, two strata of soil were encountered. The primary strata was a dark brown to gray sandy lean clay (CL). A strata of orangish brown fat clay (CH) was also encountered onsite primarily in the eastern edge of the site. Rock fragments and auger-able bedrock was encountered in most borings. See page G-11 and G-12 for soil strata, rock depths, and descriptions.

Samples from both the stratas were collected and analyzed for construction properties using the standard proctor method for compaction. The primary strata was found to have a maximum dry density of 103.3 pounds per cubic foot and an optimum moisture content of 20.9%. The orangish brown fat clay was found to have a maximum dry density of 99.2 pounds per cubic foot and an optimum moisture content of 23.2%. Natural moisture contents of samples obtained during drilling were found to range from 2.3% to 28.7%.

Samples from both strata were also analyzed for expansive properties and found to meet the provisions for expansive soils listed in Chapter 18 of the KBC.

A sample from the orangish brown fat clay (CH) was also analyzed for pavement subgrade strength using the California Bearing Ratio (CBR). A CBR value of 3.3% was determined from laboratory testing.

Several questionable soil and site conditions were identified following completion of our scope of services. These conditions must be understood and accounted for prior to design concepts and the start of construction. Additional conditions, not mentioned in this list, may arise once a final geotechnical evaluation is conducted. Questionable soil and site conditions for this project are:

1. Shallow Bedrock
2. Groundwater
3. Fractured Bedrock
4. Differential Settlement
5. Grading
6. Utility Lines
7. Expansive Soils

A further description of these conditions and issues are listed in this evaluation.

This site contains a few issues that are not uncommon in Kentucky, but may require additional design approaches and construction. With that said, the site is still suitable for development.

Soil strata onsite were found to provide an average allowable bearing capacity of 2,000 pounds per square foot. Bedrock appears to be contain fractures across the site. Drilling and sampling efforts indicated rock fragments and auger-able bedrock in several borings. This bedrock is likely to be extremely weathered in areas. Rock coring to determine the degree of fractures and a detailed bearing capacity for rock is recommended. At this stage an allowable rock bearing capacity of 7,500 pounds per square foot acceptable for this site until additional rock sampling is conducted.

ERI scanning indicated the southern half of the site to contain saturated fractured bedrock, see page G-10. Groundwater less than 5 feet from the surface was also observed in this area 24 hours after drilling. Hydrostatic pressures will likely occur for all foundations and floors constructed onsite. Designs to minimize hydrostatic pressures and waterproofing to prevent mold and mildew is anticipated for any structure built onsite.

Please note that this preliminary geotechnical evaluation is not a final geotechnical report. A final geotechnical report should be once project specific data has been determined. Rock coring to determine rock quality and extend of fractured rock is highly recommended.

We recommend you review our preliminary evaluation and schedule a meeting with our team and project stakeholders to discuss moving forward with this project.

Questionable Soil & Site Conditions

KBC 1803.5.3

Our efforts provided the following questionable soil and site conditions for the project. These may not be all of the issues that affect the project, construction or performance of the project. However, designers, contractors and owners should review each of these items carefully, fully understand them and make preparations as a result.

Item	Response
Shallow Bedrock	Geotechnical drilling encountered refusals ranging from 2.7 to 7.0 feet below the existing grade. Extremely weathered rock and rock fragments were encountered in several borings prior to auger refusal. Depending on final development and site grading, Rip-able and non-rip-able rock may be encountered prior to achieving the bottom of foundations. Blasting and Hoe Ramming may be required to achieve foundation depths or final grade elevations. Additional cost for blasting and rock removal may occur onsite.
Groundwater	Water was encountered in one boring during geotechnical drilling and in three borings 24 hours after drilling. Groundwater will likely exist across the site as geophysical scanning with Electrical Resistivity Imaging (ERI) indicated bedrock to be fractured and appeared to contain saturated zones. Observed water depths were all less than 5 feet below the existing grade. Hydrostatic pressures may form on foundations and floor slabs. The Kentucky Building Code (KBC) requires waterproofing if groundwater is less than 5 feet below the final floor elevation.
Fractured Bedrock	Geophysical scanning with Electrical Resistivity Imaging (ERI) indicated portions of the site to contain saturated bedrock. This saturated bedrock is likely saturated due to a geological formation joints present when two formations interact with each other. Review of data from the Kentucky Geological Survey (KGS) indicates a formation change exist across the site. Areas along formation changes are known for containing fractured bedrock. Groundwater noted in this fractured bedrock will lead to increased fracturing as water breaks down weak limestone. Fractured bedrock can cause rock bearing capacity to be lower and differential settlement to occur as fractures and voids within the bedrock shift. Additional excavations to achieve competent bedrock may be required onsite.
Differential Settlement	Geotechnical drilling encountered bedrock to be as shallow as 3.5 feet and as deep as 7.0 feet below the existing grade. Foundations will likely bear at least 24 inches below the finished grade. Differential settlement will occur if a structural foundation system bears on both soil and rock. Sheet rock walls, brick veneers, and concrete floors will crack due to differential settlement.
Topsoil Thickness & Organic Materials	Topsoil onsite was found to range from 3 to 8 inches. Contractors and designers typically account for 6 inches of stripping to remove topsoil. Additional stripping of topsoil will be required to ensure complete removal before construction begins. Depending on the determined development footprint the tree sapling along the southern edge of the site may need to be removed. Additional cost to remove organics can occur. Soft soil pockets will form if organics are not completely removed leading to raveling of pavements and lower shear strength under foundations.
Utility Lines	Marked utility lines were noted along Commonwealth Drive and along the southern edge of the 3 acre lot. A fire hydrant was also noted along Commonwealth drive. Over head electric lines were noted along the southern edge of the 3 acre lot. Contractors should verify the location of all utility lines prior to any construction activities. Fines and schedule delays will arise if utility lines are infringed. Depending upon the determined development, rerouting of these utilities maybe required which would add additional cost to the project.
Expansive Soils	Soils onsite were found to be expansive per section 1803.5.3 of the Kentucky Building Code (KBC). The primary strata onsite was found to have a Low expansive potential with an expansive index of 27% and a plasticity index of 19%. The secondary strata encountered in the eastern portion of the site was found to have a Medium expansive potential with an expansive index of 66% and a plasticity index of 31%. The KBC requires designers and contractors to account for expansive soils. Once the project progresses, designers and owners should account for expansive soils. Minimum recommendation to design for expansive soils is shown on Page G-7. Concrete elements will crack, masonry walls crack, and door misalign as expansive soils swell and contract with seasonal weather changes.

General Information

KBC Section 1801 & 1803

This Thoroughbred Geotechnical Evaluation was completed in general accordance with our Scope of Services and Chapter 18 of the 2018 Kentucky Building Code (KBC). Specifically, we conducted our efforts in general accordance with Sections 1803.2 and are reporting per Section 1803.6 of the KBC.

Investigation Requested By

Item	Response
Client Name	Montgomery County Health Department
Client Contact	Mr. Cody Bair
Address	117 Civic Center
City/State/Zip	Mount Sterling, Kentucky 40353
Phone Number	859-497-2421
Email	cody.bair@mchdky.org
Project Name	Montgomery County Health Department

Thoroughbred Geotechnical Team

Item	Individual
Registered Design Professional	Mr. Jordan Haney, PE | KY License 35057
Qualified Rep Onsite	Mr. Matthew Hurley, EIT, SI
Report Preparer	Mr. Matthew Hurley, EIT, SI
Driller	Mr. James Campbell
Assistant Driller	Mr. Rodger Rayburn

Project Information

Project information was provided by a request for proposal posted on a Montgomery County Health Department social media site on January 2, 2024. Additional information was provided via email with you on January 4, 2024. We understand the Health Department is currently evaluating a piece of land located along Commonwealth Drive for a possible new health department location. The tract is approximately 3 acres of clear land and 1 acre of wooded land.

Proposed Construction Notes

Item	Response
Building	Unknown at this time
Foundation Type	Unknown at this time. Shallow foundations are anticipated.
Loading Information	Unknown at this time.
Settlement Requirements	Unknown at this time. Settlement tolerances are anticipated to be less than 1 inch overall.
Retaining Walls	Not anticipated for this site.
Pavements	Unknown at this time.

Site Description

Item	Response		
Address	Commonwealth Drive		
City/County/ State/Zip	Mount Sterling, Montgomery County, Kentucky 40353		
Acreage	3 Acres +/-		
Existing Structures	No structures exist onsite.		
Terrain Observations	Terrain is flat with a slope embankment in the 1 acre of wooded land.		
Surrounding Observations	Commercial businesses, multi-story housing, and streets exist near the site.		
Site Elevation Range (FT-MSL)*	1005	to	1014

*Elevations were obtained from a Thoroughbred survey dated February 20, 2024. Topographical lines from this survey are shown on Page G-10.

Scope of Recommendations

Recommendations for this evaluation apply to the following items:

Item	Yes	No	Note
Building Foundation	X		General recommendations
Slab On Grade			
Interior		X	
Exterior		X	
Site	X		General Recommendations
Dams, Retention Areas, Etc		X	
Exterior Pavements			
Concrete		X	
Asphalt		X	
Dumpster Pad		X	
Retaining Wall		X	

Investigated Conditions

The following conditions were encountered during our site visit(s) and exploration:

Item	Response
Site Visit Date(s)	February 13th, 15th, and 16th 2024
Exploration Date(s)	February 13th and 15th
Weather at Exploration	Upper 40's Partly Cloudy
Ground Cover	Mowed grass covered most of the lot. Tall grass and tree sapling existed in southern edge of the field near the wooded area.
Trees at Site	The 3 acre lot only contained a few tree saplings along the southern edge. The wooded area contained several mature trees
Surface Water	No surface water was visible onsite.
Previous Development	No previous development was notable onsite.
Site Utilities Observed	Kentucky 811 was contacted to mark public utility lines prior to exploration. Marked water lines were noted along Commonwealth Drive. A fire hydrant exist near commonwealth drive. Marked sanitary sewer lines were noted along the southern edge of the field near the tree line. Overhead electric lines were also noted near the tree line. A Thoroughbred ALTA survey dated February 2024 indicated all utility line locations onsite.
Previous Site Grading	Previous grading was not apparent onsite.
Site Drainage	The site drains towards the south near the wooded area.
Pavements	No pavements were visible onsite. Non-fatigued asphalt pavements were noted in Commonwealth Drive.

Basis of Investigation

Our investigation was completed with the following activities:

Item	Yes	No	Note
Observation, Knowledge & Experience	X		
Site Visit	X		
Borings with Sampling	8		
Borings without Sampling		X	
Standard Penetration Test (SPT)	20		Completed in General Accordance with ASTM D1586
Rock Coring		X	Completed in General Accordance with ASTM D2113
Test Pits		X	
Ground Penetrating Radar (GPR)		X	Frequency at 250MHz
Electric Resistivity Imaging (ERI)	6		Lippman 4-point light 10W
Spectral Analysis of Surface Waves (SASW)		X	

Laboratory Testing

Item	Yes	No	Note
Atterberg Limit	4		ASTM D 4318
Natural Moisture Content	22		ASTM D 2216
Standard Proctor	3		ASTM D 698
Expansive Index	2		ASTM D 4829
California Bearing Ratio (CBR)	1		ASTM D 1883
Finer than No. 200	4		ASTM D 1140
Unconfined Compressive	1		ASTM D 2166
Rock Unconfined Compressive		X	ASTM D 7012
Consolidation		X	ASTM D 2435

Additional Research and Information

Item	Yes	No	Note
Historic Review by			
Aerial Photograph	X		
Conversations with Individuals having past knowledge of the site		X	
Geological Review from KY Geological Survey	X		
Soils Review from U.S. Depart. of Agriculture	X		
Slope Stability Analysis		X	Not anticipated for this site.
Settlement Analysis			
General	X		
Specific		X	Not Requested
Liquefaction Analysis		X	Not Requested
Expansiveness Analysis	X		
Other		X	

Equipment Used During the Exploration

Item	Yes	No	Note
Displacement Borings		X	
Wash Borings		X	
Auger Borings	X		
Rotary Drilling		X	
Precussion Drilling		X	
Continuous Sampling		X	
GPR Equipment		X	US Radar Q5C Plus
ERI Equipment	X		Lippman 4-point Light 10W
GNSS Reciever	X		Trimble R8
Drill Equipment	X		
Auto Hammer	X		
Split Barrel Sampler	X		
2 1/4 Inch HS Auger	X		Hollow Flight Auger
3 1/4 Inch HS Auger	X		Hollow Flight Auger
4 1/4 Inch SF Auger		X	Solid Flight Auger
Other		X	Rock Core Barrel

KBC Chapter 17 Special Inspections

Soil Construction Recommendations

At the time of this report, final grading plans weren't provided. Thoroughbred anticipates the following KBC Special Inspection Chapter 17 Items for Soils Construction be completed for the project. Below are items from the code that should be completed as a part of the construction efforts:

KBC Special Inspections Item	Yes	No
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	X	
2. Verify excavations are extended to proper depth and have reached proper material.	X	
3. Perform classification and testing of compacted fill materials.	X	
4. Verify use of proper materials, densities and lift thickness during placement and compaction of control fill.	X	
5. Verify the site has been prepared properly by periodically observing subgrade.	X	

Definition

Electric Resistivity Imaging

ERI is a geophysical technique for imaging sub-surface structures from electrical resistivity measurements made at the surface, or by electrodes in one or more boreholes. ERI measures the transient response and aims to determine the subsurface chargeability properties and identifies changes or irregularities in materials. The table below provides resistivity values of common rocks and soil materials in our area. With that said, variations in resistance may occur for unknown reasons.

Typical Resistivity of Materials	
Material	**Typical Resistivity (ohm-m)**
Alluvium	10 to 800
Sand	60 to 1,000
Clay	1 to 100
Groundwater (Fresh)	10 to 100
Sandstone	8 to 4x10^3
Shale	20 to 2x10^3
Limestone	50 to 4x10^3
Granite	5,000 to 1,000,000

Reference: Frischknecht FC. Electrical methods in geophysical prospecting. Pergamon Press Inc., Oxford; 1996

Standard Penetration Testing (SPT)

During the drilling process, we may complete Standard Penetration Testing at various intervals in our to measure the subsurface resistance of the underlaying soils. We also use SPT testing to obtain soil samples for visual observation, laboratory testing, etc. If SPT testing is included in our scope of services and outlined in these documents, the testing was completed in general accordance with ASTM D1586, Standard Test Method for Standard Penetration Testing.

SPT testing includes driving a split barrel sampler to obtain a representative disturbed soil sample. The sampler is generally driven into the subsurface material in three (3) six (6) inch intervals. The last two intervals are added together in order to obtain a resistance value, or N-Value. The sampling is typically performed at 5-feet depth intervals, however smaller sampling depths may occur. The hammer contains a 140 pound mass that is dropped over a distance of 30 inches. Our SPT testing is completed using an automatic hammer which typically applies a more consistent energy level. SPT N-Values are also used to determine the consistency of fine grain soil samples and relative density of course grained soil samples.

SPT N-Value (Uncorrected)	Consistency	Unconfined Compressive Strength (KSF)
<2	Very Soft	<0.5
2-4	Soft	0.5-1.0
4-8	Medium	1.0-2.0
8-16	Stiff	2.0-4.0
16-32	Very Stiff	4.0-8.0
>32	Hard	>8.0

SPT N-Value (Uncorrected)	Relative Density of Sands and Gravels	Phi Angle (º)
0-4	Very Loose	18-28
5-10	Loose	28-30
11-24	Medium	30-36
25-50	Dense	36-41
>50	Very Dense	41

USDA Defined Drainage Classes

"Drainage class (natural)" refers to the frequency and duration of wet periods in conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual" as follows.

Excessively drained. Water is removed very rapidly.
Somewhat excessively drained. Water is removed from the soil rapidly.
Well drained. Water is removed from the soil readily but not rapidly.
Moderately well drained. Water is removed from the soil somewhat slowly during some periods of the year.
Somewhat poorly drained. Water is removed slowly so that the soil is wet at a shallow depth for significant periods during the growing season.
Poorly drained. Water is removed so slowly that the soil is wet at shallow depths periodically during the growing season or remains wet for long periods.
Very poorly drained. Water is removed from the soil so slowly that free water remains at or very near the ground surface during much of the growing season.

Expansive Soils

Expansive soils are defined by the 2018 Kentucky Building Code in section 1803.5.3 as soils meeting all four (4) of the following provisions:

1. Plasticity Index (PI) of 15 percent or greater, determined in accordance with ASTM D4318.
2. More than 10 percent of the soil particles passing a No. 200 sieve, determined in accordance with ASTM D422.
3. More than 10 percent of the soil particles are less than 5 micrometers in size, determined in accordance with ASTM D422.
4. Expansion Index greater than 20, determined in accordance with ASTM D4829.

Rock Coring

During the drilling process, we may obtain rock core samples from various areas in order to determine the underlying rock's consistency. If rock coring is included in our scope of services and outlined in these documents, the coring was completed in general accordance with ASTM D2113, Standard Practice for Rock Core Drilling and Sampling of Rock for Site Investigations.

Rock core samples are also used to determine the Rock Quality Designation (RQD), which correlates to the Rock Mass Quality. RQD is a rough measure of the degree of jointing or fracture in a rock mass, measured as a percentage of the drill core in lengths of 10 cm (approximately 4 inches) or more. RQD values are used to describe the in situ rock mass quality by the following classification:

RQD (%)	Rock Mass Quality
<25	Completely Weathered Rock
25-50	Weathered Rock
50-75	Moderately Weathered Rock
75-90	Hard Rock
90-100	Fresh Rock

Plan Limitations

Our services have been completed in accordance with our authorized scope of work and in accordance with generally accepted practice in the fields of geotechnical and foundation engineering. This warranty is in lieu of all other warranties either expressed or implied.

Our conclusions and recommendations are based on the data revealed by this investigation. We are not responsible for any conclusions or opinions drawn from the data included herein, other than those specifically stated, nor are the recommendations presented in this report intended for direct use as construction specifications.

This report is intended for use with regard to the specific project discussed herein and any changes in loads, structures, or locations should be brought to our attention so that we may determine how they may affect our conclusions. An attempt has been made to provide for normal contingencies but the possibility remains that unexpected conditions may be encountered during construction. If this should occur, or if additional or contradictory data are revealed in the future, we should be notified so that modifications to this report can be made, if necessary. If we do not review the relevant construction documents and witness the relevant construction operations, then we cannot be responsible for any problems, which may arise, from the misunderstanding or misinterpretation of this report or failure to comply with our recommendations.

Excavations should be sloped or shored in accordance with local, state, and federal regulations, including OSHA (29 CFR Part 1926) excavation trench safety standards. The contractor is solely responsible for site safety. This information is provided only as a service, and under no circumstances should Thoroughbred be assumed responsible for construction site safety.

ERI is limited to the material which the current is traveling through and user interpretation of those signals. As a result, misinterpretations can occur. The interpretations included in our services are not guarantees of the actual conditions. We provide ERI information solely as an aid to our final recommendations.

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING, GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN HANEY
35057
LICENSED PROFESSIONAL ENGINEER

General Information

G - 1

Site Research Information

Soils Data Review by U.S. Department of Agriculture

The USDA provides soil information specific to the type of construction planned for your project. We visited the USDA Soil Survey Database for additional information about the site soils. It should be noted, the project site is mainly urban land covered in concrete. There is currently no USDA Site Soil Survey data for this site due to its urban development.

USDA Database project types observed:

Item	Yes	No	Note
Area of Interest (AOI)	5.3 Acres	+/-	Approximate
Soil Unit Map	X		
Corrosion of Concrete	X		
Corrosion of Steel	X		
Small Commercial Buildings	X		
Dwellings with Basements	X		
Local Roads and Streets	X		
Shallow Excavations	X		

USDA Soil Unit Map & Data

Our research on the USDA database was for the Area of Interest (AOI) shown above. Soil types at the site are noted as follows by the USDA:

Map Unit Symbol	Unit Name	Acres in AOI	Percentage of AOI
FIE	Faywood-Lowell Complex	4.1	77.8
SeB	Shelbyville Silt Loam	1.1	20.9
CrC	Crider Silt Loam	0.1	1.3

Map Unit Symbol	Slope %	Hydraulic Soils Group	Runoff Class	Natural Drainage Class
FIE	12 to 35	C	High	Well Drained
SeB	2 to 6	C	Medium	Well Drained
CrC	6 to 15	B	Medium	Well Drained

Corrosion of Concrete

Corrosion of Steel

Map Unit Symbol	Corrosion of Concrete	Corrosion of Steel
FIE	Low	High
SeB	Low	High
CrC	Moderate	Moderate

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens concrete. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the concrete in installations that are entirely within one kind of soil or within one soil layer.

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel in installations that are entirely within one kind of soil or within one soil layer. The risk of corrosion is expressed as "low," "moderate," or "high."

Small Commercial Buildings

Map Unit Symbol	Small Commercial Buildings	Rating Reasons
FIE	Very Limited	Slope, Shrink-Swell, and Depth to Hard Bedrock
SeB	Somewhat Limited	Slope
CrC	Very Limited	Slope

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification of the soil). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Dwellings with Basements

Map Unit Symbol	Dwellings with Basements	Rating Reasons
FIE	Very Limited	Depth to Hard Bedrock, Shrink-Swell, and Slope
SeB	Somewhat Limited	Shrink-Swell
CrC	Somewhat Limited	Slope

Dwellings are single-family houses of three stories or less. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet.

The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification of the soil. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local Roads and Streets

Map Unit Symbol	Local Roads and Streets	Rating Reasons
FIE	Very Limited	Low Strength, Slope, Shrink-Swell, Depth to Hard Bedrock, Soluble Bedrock
SeB	Very Limited	Frost Action, Low Strength, Soluble Bedrock, Depth to Thick Cemented Pan, Depth to Thin Cemented Pan, Depth to Saturation Zone, Shrink-Swell, Depth to Hard Bedrock
CrC	Somewhat Limited	Low Strength, Slope

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow Excavations

Map Unit Symbol	Shallow Excavations	Rating Reasons
FIE	Very Limited	Depth to Hard Bedrock, Too Clayey, Dusty, Slope, and Unstable Excavation Walls
SeB	Somewhat Limited	Too Clayey, Dusty, Unstable Excavation Walls, Depth to Hard Bedrock
CrC	Somewhat Limited	Slope, Dusty, Unstable Excavation Walls

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING, GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN HANEY
25057
LICENSED PROFESSIONAL ENGINEER

Research Information

G - 2

Rock Strata

We visited the Kentucky Geological Survey's (KGS) mapping information database for information about rock strata. The KGS was established in 1838 and has investigated mineral, energy and water resources, and geologic hazards in Kentucky for 170 years. As the official geologic research organization for the Commonwealth of Kentucky, KGS is focused on research in earth resources and processes, public service, and the dissemination of our data, knowledge, and experience to stakeholders in industry, government, educational institutions, and the general public. The KGS is to increase knowledge and understanding of the mineral, energy, and water resources, geologic hazards, and geology of Kentucky for the benefit of the Commonwealth of Kentucky.

Our review of the KGS information is noted below:

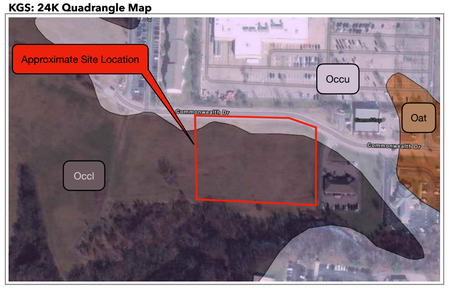
Item	Geological Unit #1	Geological Unit #2	Geological Unit #3
County	Montgomery	Montgomery	Montgomery
Formation	Upper Part of Calloway Creek Limestone	Lower Part of Calloway Creek Limestone	Tate Member, Ashlock Formation
Symbol	Occu	Occl	Oat
24K Quadrangle Map	Mount Sterling	Mount Sterling	Mount Sterling
Primary Lithology	Limestone and Mudstone	Limestone, Mudstone, and Siltstone	Mudstone and Limestone
Karst Potential	Prone	Prone	Prone
Age	Upper Ordovician	Upper Ordovician	Upper Ordovician

Upper Part of Calloway Creek Limestone: Limestone (80 percent) and mudstone: Limestone, bluish- to greenish-gray, weathers light gray to yellowish gray; micrograined to medium grained, in part intermixed and intergraded with crudely laminated calcitic mudstone, contains sparse to abundant coarse fossil fragments; mostly in lensing nodular beds 1 to 3 inches thick and a few inches to a few feet long, grading downward to fairly continuous, nodular-surfaced beds a few inches thick. Mudstone, calcitic, greenish-gray; intermixed with limestone in upper part, interstratified as even sets a few inches thick in lower part. Unit very fossiliferous, brachiopods and large branching bryozoans dominant; the large brachiopods Platystrophia ponderosa and Hebertella common and conspicuous.

Lower Part of Lexington Limestone: Limestone, medium-gray, weathers brownish gray; in irregular beds 1/2 inch to 1 foot thick, locally ripple marked; cherty in part. Moderately to abundantly fossiliferous. A bed 3 inches to 2 feet thick of silicified fossils occurs near or at top of member, is thickest in northern part of quadrangle where other thinner and less persistent silicified fossil beds occur below it. The brachiopod commonly called Rhynchotrema is most abundant fossil in these beds and is diagnostic of the member. Stromatoporoids, generally partly silicified with vugs containing quartz crystals as much as half an inch long, occur near top of unit.

Tanglewood Limestone Member No. 2: Limestone, medium- to medium-light-gray to brownish-gray, fine to coarse grained, composed of comminuted fossil debris in a sparry matrix; in beds 1/2 inch to 3 feet thick, even bedded, ripple marked, or crosslaminated; commonly phosphatic. Rare whole fossils include robust brachiopods, branching bryozoans, and crinoid columnals. Stromatoporoids present locally, especially near base. Bedding contorted near base in northern part of quadrangle. Member includes unmapped limestone and shale sequence in southwestern part of quadrangle; limestone is medium gray, in irregular to rubbly beds as much as 6 inches thick; sequence is less than 5 feet thick; about 15 feet above base of member.

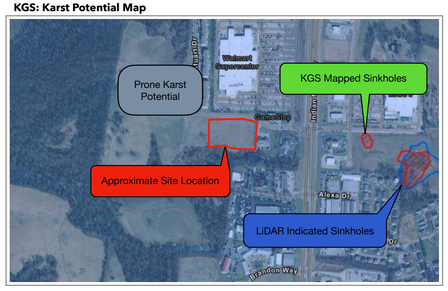
KGS: 24K Quadrangle Map



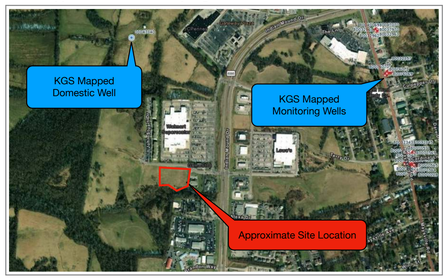
We reviewed the mapping by KGS and noted the below activity.

Item	Yes	No	Closest Approx. Distance to Site
Karst Activity in Area	X		KGS indicated multiple mapped sinkholes within 1 mile of the site.
Obvious Karst Activity Onsite		X	No activity was visible onsite.
Gas and Oil Wells	X		KGS indicated multiple oil wells and dry and abandoned wells within 2 miles of the site.
Mining Activities		X	No activity was visible onsite.
Water Wells and Springs	X		KGS indicated multiple mapped water wells and springs within 1 mile of the site.

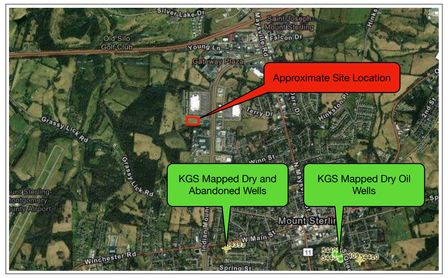
KGS: Karst Potential Map



KGS: Mapped Water Wells and Springs



KGS: Mapped Gas Wells and Mining Activity



Water

Groundwater - KBC 1803.5.4 & 1805

Thoroughbred made efforts to observe the groundwater table during exploration and then about 24 hours later. Water was encountered in one boring during drilling. Water had seeped into three borings 24 hours after drilling. Electrical Resistivity Imaging (ERI) scanning indicated saturated fractured bedrock in the southern half of the site shown on Page G-10.

Boring	Boring Elevation (FT-MSL)	Depth of Refusal (FT)	Elevation of Refusal (FT-MSL)	Water Elevation at Time of Exploration (FT-MSL)	24 Hour Water Elevation (FT-MSL)
B-1	1006.5	3.5	1003	NE	NE
B-2	1007.7	2.7	1005	NE	NE
B-3	1012.2	6.3	1005.9	NE	NE
B-4	1009.1	6.5	1002.6	1004.6	NE
B-5	1006.7	6.5	1000.2	NE	1002.7
B-6	1006.7	4.5	1002.2	NE	1003.2
B-7	1008.3	7	1001.3	NE	1003.3
B-8	1009.1	3.5	1005.6	NE	NE

NE: Not Encountered

Notes:

1. Contractors should anticipate encountering groundwater or percolation of groundwater into excavations based on observed 24 water depths and ERI scanning.
2. Perched water may enter excavations given ranges of natural moisture contents and the saturated sections on page G-10.
3. Contractors will likely need to install a sump pump to remove water from excavations.
4. Contractors should be prepared to de-water during construction.
5. Groundwater mitigation recommendations are listed below.

Foundation Drain

A drain shall be placed around the perimeter of any new foundations that consists of gravel or crushed stone containing not more than 10-percent material that passes through a No. 4 (0.187 in) sieve. The thickness shall be such that the bottom of the drain is not higher than the bottom of the base under the floor, and that the top of the drain is not less than 6 inches above the top of the footing. The top of the drain shall be covered with an approved filter membrane material. The top of joints or the top of perforations shall be protected with an approved filter membrane material. The pipe or tile shall be placed on not less than 2 inches of gravel or crushed stone complying with Section 1805.4.1 and shall be covered with not less than 6 inches of the same material.

Rock drains should be discharged by gravity or mechanical means towards the lowest elevation onsite.

Subsoil Drainage System (Floor Base Course)

Hydrostatic Pressure likely will appear in areas where the foundations will be constructed. We recommend the following:

Any concrete slabs or pavements shall be placed over a floor base course consisting of gravel or crushed stone containing not more than 10 percent of material that passes through a No. 4 sieve.

Hydrostatic pressures should be eliminated for foundations, slabs and walls, through the design and construction of foundation and wall drains, and a site drainage system.

Dampproofing for Walls and Floors

We recommend that Dampproofing be completed as part of the design and construction for walls and floors.

Floors

Dampproofing materials for floors are recommended to be installed between the base course stone and concrete.

We would suggest dampproofing be included in the design and construction in the form of a polyethylene material (Vapor Barrier). The thickness of the liner should be as noted in the foundation detail drawing in this plan set. The joints should be lapped not less than 6 inches and installed per manufactures' recommendations. Please note Structural or Architectural requirements may be greater.

Walls

Prior to the application of dampproofing materials on concrete walls, holes, and recesses resulting from the removal of form ties shall be sealed with a bituminous material or other approved methods or materials. Unit masonry walls shall be parged on the exterior surface below ground level with not less than 3/8 inch of Portland cement mortar. The parging shall be coved at the footing.

Dampproofing materials for walls shall be installed on the exterior surface of the wall, and shall extend from the top of the footing to above ground level. Dampproofing shall consist of a bituminous material, 3 pounds per square yard of acrylic modified cement, 1/8 inch coat of surface-bonding mortar complying with ASTM C 887 or other waterproofing materials approved by the building official.

Surface Water

Surface water was not observed while onsite. Sheet flowing of surface water across the site may occur during rain events given slight grade towards the southern perimeter. A stream exist along the southern edge of the wooded area south of the area explored.

Contractors and designers should account for this sheet flowing to prevent additional saturation of fractured rock and soils onsite. Drainage ditches may be required to prevent water from entering foundation excavations.

We recommend the following given the location of this project.

1. Design and construct the surrounding grade to not direct surface water flow towards the building pad. Ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal for a minimum distance of 10 feet measured perpendicular to the face of the wall.
2. Fill soils should contain a moisture content as noted in the Fill Section of this plan set.
3. Concrete sidewalks, pavements and other materials in contact with the structure should have contact joints sealed so that water is not allowed to seep into the foundation zone.

Federal Emergency Management Agency (FEMA) Data

Review of information from FEMA's National Flood Hazard Viewer was analyzed for this site. The site was found to be in an Area of Minimal Flood Hazard.

Flood Hazard Areas Information	
Item	**Result**
Flood Hazard	**Area of Minimal Flood Hazard**
Panel ID	21173C0104D
Effective Date	1/6/2011
Date Observed	2/21/2024

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN P. HANEY
25007
LICENSED PROFESSIONAL ENGINEER

Water & Research Information

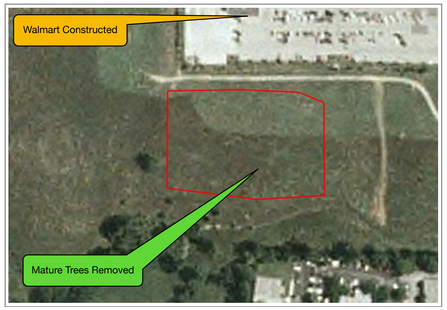
G - 3

Historic Photography

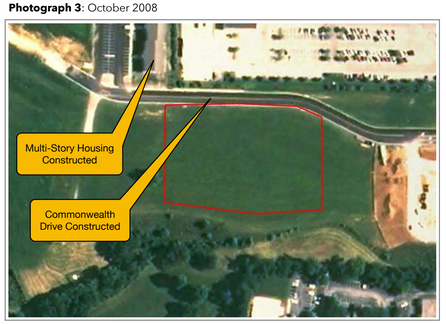
We reviewed several available aerial photographs from March 1995 to the present date. The site appeared to be an agricultural field in March 1995 with some mature trees growing in the southern half of the property. By November 2004, all the tree were removed except for the wooded 1 acre area. A Walmart north of the site was constructed by November 2004, shown in Photograph 2. Nearby multi-story housing and Commonwealth Drive were both constructed by October 2008. A commercial building bordering the eastern edge of the site was constructed by October 2013. The site itself has relatively remained unchanged between March 1995 and the present date.

Photograph 1: March 1995

Photograph 2: November 2004



Photograph 3: October 2008



Photograph 4: October 2013

Photograph 5: September 2019

Site Photographs

During our visit(s) to the site, photographs were taken of soils encountered, site terrain, and general observations. Extremely weathered rock was encountered in several borings similar to Photograph 6. Other soil strata encountered onsite were found to contain gravel pieces similar to Photograph 7. A multi-story housing building exist northwest of the site seen in Photograph 8. The site is relatively flat, as shown in Photographs 8 and 9. An overhead electric line runs along the southern edge of the site. Tree saplings and mature trees exist along the southern edge of the open area in Photograph 10. The saturated sample from boring B-4 with rock fragments and soil is shown in Photograph 11.

Photograph 6: Extremely weathered rock auger cuttings.

Photograph 7: Soils encountered with gravel pieces.

Photograph 8: View of site looking west.

Photograph 9: View of site looking west.

Photograph 10: Electric pole and wooded area.

Photograph 11: Boring B-4 wet sample at 5 feet.

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN P. HANEY
35051
LICENSED PROFESSIONAL ENGINEER

Historical & Site Photographs

G - 4

Laboratory & Soils Summary

Summary of Subsurface Material Information

Item	Response		
Topsoil Thickness (in)	3	to	8
Soil Thickness Range Across Borings (ft)[1]	2	to	6.3
Range of Consistency in Material from SPT[2]	Medium	to	Hard
Was Fill Material Encountered?	No		
Was Augerable Weathered Rock Encountered?	Yes		

[1] All borings extended to refusal. Soil thickness is excluding topsoil thickness.
[2] Rock fragments and auger-able weathered bedrock was encountered in several borings which can cause SPT values to be higher.

General Description of Soil Strata Encountered

Thoroughbred explored the site both with ERI and geotechnical drilling. Based upon those efforts and the soils we tested in our laboratory, we found topsoil followed by two strata of soils above anticipated fractured bedrock. We have described the soils found at the site as in the following general terms:

Topsoil: A layer of topsoil was encountered in each boring ranging from 3 to 8 inches thick.

Soil Strata 1: The primary strata below topsoil was a dark brown to gray sandy lean clay (CL). This strata had rock fragments and auger-able weathered rock in several borings. The consistency of this strata ranged from medium to hard.

Soil Strata 2: A strata of orangish brown fat clay (CH) was encountered onsite in the northeastern corner of the site. This strata ranged in consistency from medium to stiff with fewer rock fragments.

Drilling extended to refusal in each boring. Refusal is anticipated to be bedrock that is not rip-able. Hard drilling was encountered in several borings prior to refusal with rock fragments and extremely weathered bedrock present in auger cuttings.

Soil Classification

During the course of our work, we selected representative soil samples for laboratory testing. Laboratory testing reports are included in this plan set. We classified the samples per the Unified Soil Classification System (USCS) and were found to be as follows.

Classification	Yes	No	Note
Well Graded Gravel (GW)		X	
Poorly Graded Gravel (GP)		X	
Silty Gravel (GM)		X	
Clayey Gravel (GC)		X	
Well-Graded Sands (SW)		X	
Poorly-Graded Sands (SP)		X	
Silty Sands (SM)		X	
Clayey Sands (SC)		X	
Inorganic Silts (ML)		X	
Low Plasticity Clay (CL)	X		
Organic Silts, Organic Low Plasticity Clays (OL)		X	
Inorganic Silts, Elastic (MH)		X	
High Plasticity Clay (CH)	X		
Organic Clay, Organic Silt (OH)		X	
Peat, Highly Organic (PT)		X	

Laboratory Test Ranges			
Test	Low	High	Note
Plasticity Index (%)	19	31	4 test run
Natural Moisture Content (%)	2.3	28.7	22 test run
% Finer than No. 200	61.1	90.6	4 test run
Optimum Moisture Content (%)	19.4	23.2	3 test run
Maximum Dry Density (PCF)	99.2	106.9	3 test run
Expansive Index (%)	27	66	2 test run
California Bearing Ratio (CBR)	3.3		1 test run
Unconfined Compressive Strength, Soil (PSF)	4,491		1 test run

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

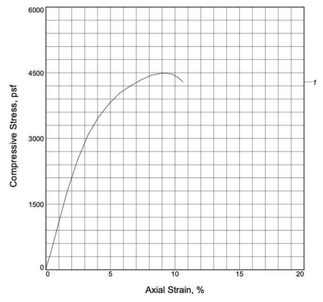
250 Simpson Avenue, Suite 110
Lexington, Kentucky 40504

Project Name: Montgomery Co Health Dept - Mt Sterling, KY
Project Number: 240027
Project Location: Commonwealth Dr, Mt. Sterling, Montgomery Co., KY
Date: 3/7/2024

Laboratory Summary Report

Lab ID	Location ID	Depth (FT)	Sample Type	Natural Moisture Content (%)	Plasticity Index (%)	% Finer than No. 200	USCS Classification	Maximum Dry Density (pcf)	Optimum Moisture Content	CBR at 0.100" (%)	Expansive Index (EI 50)	Potential Expansion	Unconfined Compressive Strength (psf)
1	B-1	0.0-1.5	SS	20.9%									
2	B-1	1.5-3.0	SS	16.2%									
3													
4	B-2	0.0-1.5	SS	27.8%									
5	B-2	1.5-2.1	SS	2.3%									
6													
7	B-3	0.0-1.5	SS	26.7%									
8	B-3	5.0-6.3	SS	4.6%									
9													
10	B-4	0.0-1.5	SS	24.1%									
11	B-4	1.5-3.0	SS	7.5%									
12	B-4	5.0-6.5	SS	10.7%									
13													
14	B-5	0.0-1.5	SS	28.7%									
15	B-5	1.5-3.0	SS	3.9%									
16	B-5	5.0-6.5	SS	3.3%									
17													
18	B-6	0.0-1.5	SS	26.4%									
19	B-6	1.5-3.0	SS	23.6%									
20													
21	B-7	0.0-1.5	SS	23.2%									
22	B-7	1.5-3.0	SS	22.5%									
23													
24	B-7A	2.0-4.0	UD	22.7%	29	90.6%	CH						4,491
25													
26	B-8	0.0-1.5	SS	20.7%									
27	B-8	1.5-2.8	SS	11.6%									
28													
29	B-4 Bulk	0.0-5.0	BULK	17.2%	19	69.3%	CL	103.3	20.9%		27	Low	
30	B-5 Bulk	0.5-5.0	BULK	14.4%	23	61.1%	CL	106.9	19.4%				
31	B-7 Bulk	0.5-7.0	BULK	25.9%	31	90.5%	CH	99.2	23.2%	3.3	66	Medium	

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	4491			
Undrained shear strength, psf	2246			
Failure strain, %	9.0			
Strain rate, in./min.	0.050			
Water content, %	22.7			
Wet density, pcf	123.7			
Dry density, pcf	100.8			
Saturation, %	91.3			
Void ratio	0.6728			
Specimen diameter, in.	2.88			
Specimen height, in.	6.12			
Height/diameter ratio	2.13			

Description: Orangish Brown Fat Clay (CH)
LL = 50 **PL =** 21 **PI =** 29 **Assumed GS=** 2.7 **Type:** Shelby Tube (UD)

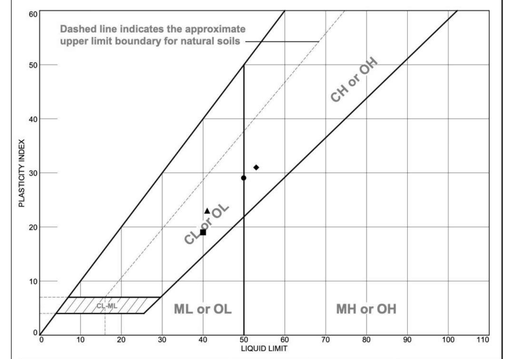
Project No.: 240027
Date Sampled: 2/15/24
Remarks:

Client: Montgomery County Health Department
Project: Montgomery Co Health Dept - Mt Sterling, KY
Source of Sample: B-7A **Depth:** 2

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

Figure _____

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Orangish Brown Fat Clay (CH)	50	21	29	94.5	90.6	CH
■	Dark Brown Sandy Lean Clay (CL)	40	21	19	77.9	69.3	CL
▲	Dark Brown Sandy Lean Clay (CL)	41	18	23	71.4	61.1	CL
◆	Orangish Brown Fat Clay (CH)	53	22	31	94.2	90.5	CH

Project No. 240027 **Client:** Montgomery County Health Department
Project: Montgomery Co Health Dept - Mt Sterling, KY

Remarks:

●**Source of Sample:** B-7A **Depth:** 2
■**Location:** B-4 Bulk **Depth:** 0.0-5.0
▲**Location:** B-5 Bulk **Depth:** 0.5-5.0
◆**Location:** B-7 Bulk **Depth:** 0.5-7.0

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

Figure

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

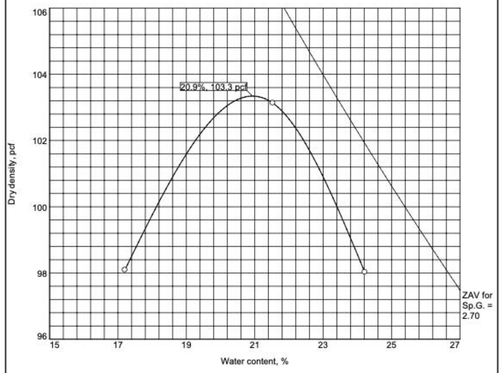
STATE OF KENTUCKY
JORDAN P. HANEY
35057
LICENSED PROFESSIONAL ENGINEER

Laboratory & Soil Summary

G - 5

Laboratory & Soils Summary

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
0.0-5.0	CL	A-6(12)	17.2		40	19	10.0	69.3

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 103.3 pcf Optimum moisture = 20.9 %	Dark Brown Sandy Lean Clay (CL)
Project No. 240027 **Client:** Montgomery County Health Department **Project:** Montgomery Co Health Dept - Mt Sterling, KY ○**Location:** B-4 Bulk	**Remarks:**

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

Figure

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

250 Simpson Avenue, Suite 110
Lexington, Kentucky 40504

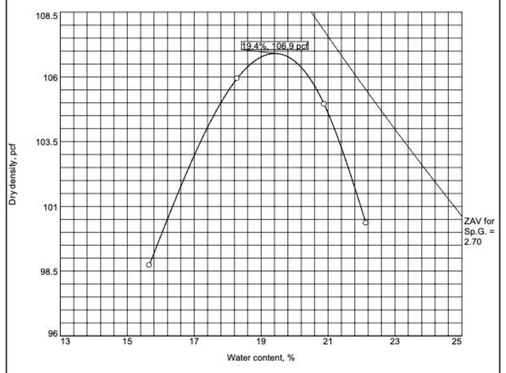
Project Name: Montgomery Co Health Dept - Mt Sterling, KY
Project Location: Commonwealth Dr, Mt. Sterling, Montgomery Co., KY
Project Number: 240027
Date 3/7/2024

Standard Test Method for Expansion Index of Soils

ASTM D4829-03

Lab ID	Location ID	Depth	(FT)	Sample Type	Pre-Test Moisture Contentt (%)	Post-Test Moisture Content (%)	Dry Density (pcf)	Percent of Optimum Compaction (%)	Expansion Index (EI_{50})	Potential Expansion
1	B-4 Bulk	0.5-5.0		Bulk	11.6%	20.3%	110.1	106.6%	27	Low

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method B Standard

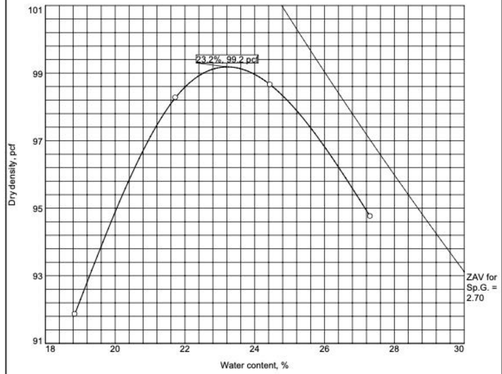
Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
0.5-5.0	CL	A-7-6(11)	7.0		41	23	14.3	61.1

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 106.9 pcf Optimum moisture = 19.4 %	Dark Brown Sandy Lean Clay (CL)
Project No. 240027 **Client:** Montgomery County Health Department **Project:** Montgomery Co Health Dept - Mt Sterling, KY ○**Location:** B-5 Bulk	**Remarks:**

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

Figure

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification USCS	Classification AASHTO	Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
0.5-7.0	CH	A-7-6(30)	25.9		53	31	0.6	90.5

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 99.2 pcf Optimum moisture = 23.2 %	Orangish Brown Fat Clay (CH)
Project No. 240027 **Client:** Montgomery County Health Department **Project:** Montgomery Co Health Dept - Mt Sterling, KY ○**Location:** B-7 Bulk	**Remarks:**

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

Figure

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

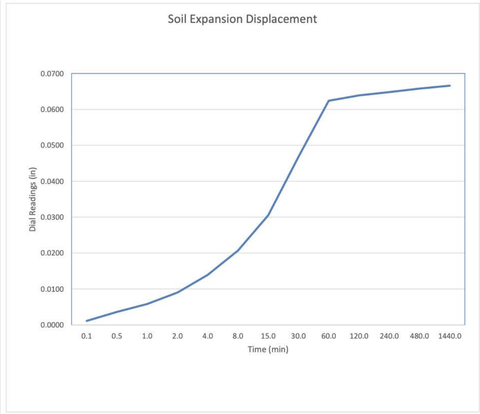
250 Simpson Avenue, Suite 110
Lexington, Kentucky 40504

Project Name: Montgomery Co Health Dept - Mt Sterling, KY
Project Location: Commonwealth Dr, Mt. Sterling, Montgomery Co., KY
Project Number: 240027
Date 3/7/2024

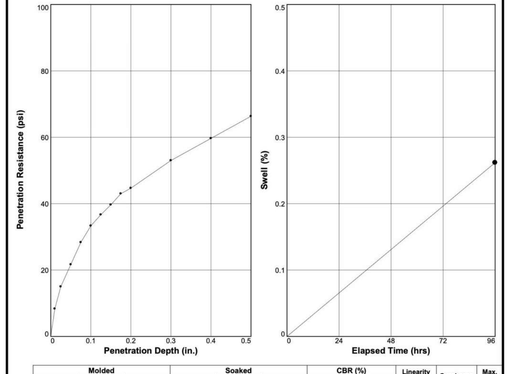
Standard Test Method for Expansion Index of Soils

ASTM D4829-03

Lab ID	Location ID	Depth	(FT)	Sample Type	Pre-Test Moisture Contentt (%)	Post-Test Moisture Content (%)	Dry Density (pcf)	Percent of Optimum Compaction (%)	Expansion Index (EI_{50})	Potential Expansion
1	B-7 Bulk	0.5-7.0		Bulk	14.5%	30.1%	94.4	95.2%	66	Medium



BEARING RATIO TEST REPORT
ASTM D1883-16



	Molded Density (pcf)	Molded Percent of Max. Dens.	Molded Moisture (%)	Soaked Density (pcf)	Soaked Percent of Max. Dens.	Soaked Moisture (%)	CBR (%) 0.10 in.	CBR (%) 0.20 in.	Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
1 ○	96.1	96.9	25.3	95.9	96.6	26.6	3.3	3.0	0.000	15	0.3
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Orangish Brown Fat Clay (CH)	CH	99.2	23.2	53	31

Project No: 240027
Project: Montgomery Co Health Dept - Mt Sterling, KY
Location: B-7 Bulk
Depth: 0.5-7.0
Date: 2/15/24

Test Description/Remarks:

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

Figure _____

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN P. HANEY
LICENSED PROFESSIONAL ENGINEER

Laboratory & Soil Summary

G - 6

Excavation, Grading, and Fill

KBC 1803.5.7 through 10 & 1804

Overview

Currently this site is being preliminarily evaluated for feasibly. No site plans, grading plans, or possible structures have been determined for this site. At a minimum, stripping of topsoil and tree saplings are anticipated. Excavations will likely occur for future foundations, utility lines, and parking areas. Minimal grading is anticipated onsite, but grading recommendations can be given once a grading plan is determined.

Depending upon the time of year and weather conditions, wet soils may be encountered. These soils may not be unsuitable, simply wet. Aeration and drying then re-compaction may be needed soils in this area to be stable. If construction occurs in drier periods, water may need to be applied to fill material in order to achieve specified moisture contents and compaction. Water content in soils in critical to achieving compaction and long term performance of the structures.

Other recommendations we can foresee that a final Geotechnical Evaluation may include are:

1. Fill soils should contain a moisture content within +/- 2% of optimum moisture content as determined by ASTM D698.
2. Gutters should be closed conduit after the point of capture. Water from gutters should extend to an approved drainage system. Water should not be allowed to drain onto the ground around the foundation or pavements.
3. Rock is anticipated during construction depending on the final grading of the site.
4. We recommend a meeting between the owner and contractor prior to the start of construction to review the final geotechnical report and a review of the structural and civil plans to ensure that the proposed horizontal and vertical construction conforms with our recommendations.

Excavation

We have not been provided with final design documents As such, we are limited to providing excavation recommendations. With that said, it is likely excavations are needed for foundations and roadways. Contractors should make all excavation in strict accordance with the requirements made by the Occupational Safety and Health Administration (OSHA).

Contractors should make all excavations in strict accordance with the requirements in the project documents and per the Occupational Safety and Health Administration (OSHA).

Excavation Near Foundations

Excavation near existing foundations are not anticipated for this site since it is currently undeveloped. In any event, If excavations do occur near foundations, underpinning may be required prior to construction of the access road. Any excavations for new foundation systems shall not remove lateral support from any foundation or roadway area without first underpinning or protecting against settlement or lateral torsion. If this does occur, the contractor should contact Thoroughbred prior to the start of construction.

Grading

We anticipate a final Geotechnical Evaluation to provide specific grading recommendations. With that said, you should anticipate recommendations to include the following:

The ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than one unit vertical in 20 units horizontal (5-percent slope) for a minimum distance of 10 feet (3048 mm) measured perpendicular to the face of the wall. If physical obstructions or lot lines prohibit 10 feet (3048 mm) of horizontal distance, a 5-percent slope shall be provided to an approved alternative method of diverting water away from the foundation. Swales used for this purpose shall be sloped a minimum of 2 percent where located within 10 feet (3048 mm) of the building foundation. Impervious surfaces within 10 feet (3048 mm) of the building foundation shall be sloped a minimum of 2 percent away from the building. See Fill for additional recommendations.

As the upward slope meets the foundation wall, it is critical that grading be completed to help surface water flow away from the structure.

Seasonal Earthwork

Grading efforts, excavations, and subgrade compaction will greatly be impacted by the time of year earthwork operations occur with respects to seasonal weather patterns. For example, during periods (likely summer), contractors may be required to add water to fill material in order to achieve the required compaction moisture contents. In wetter periods (likely spring and winter), discing soils to help dry wet soils to achieve the required compaction moisture contents will be required.

If work is delayed for any time or if perception events are likely to occur, the contractor should seal off all exposed soil subgrades to water infiltration does not occur. Sealing off subgrades can be achieved with smooth drum rollers, rubbed tired vehicles, etc. Sealing off subgrades will also help reduce erosion with exposed soils.

If preparations for seasonal earthwork efforts are not made or if exposed subgrade materials are not sealed off, the subgrade may become unstable and remediation efforts will be required at the contractors responsibilities.

Placement of Backfill

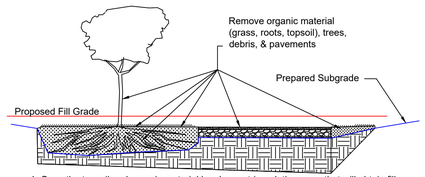
The excavation outside the foundation shall be backfilled with soil that is free of organic material, construction debris, cobbles and boulders, or with a controlled low-strength material (CLSM). The backfill shall be placed in lifts and compacted in a manner that does not damage the foundation or the waterproofing or damp-proofing material, if applicable. If CLSM is used as backfill, see recommendations Section "Controlled Low-Strength Material (CLSM)".

Areas where future structural expansions may occur and where soil removal for foundation and foundation walls will occur should be backfilled with a CLSM material in order to reduce the likelihood of settlement and future movement.

Preparation of Subgrade

At this point, we are providing general preparations for development at the site. However, until complete geotechnical efforts are provided, we anticipate the following.

Prior to the placement of fill material, base stone, etc., for structures, the areas should be prepared in accordance with the project documents and items below. Specifications for the preparation of the site prior to placement of compacted fill material:



1. Once the topsoil and organic material has been stripped, the areas that will obtain fill material shall be scarified to a depth of 12 inches and compaction applied to obtain a density of 98 percent of the material's relative density.
2. Areas ready to receive new fill should be proofrolled with a heavily loaded dump truck or similar equipment having a weight of 60,000 pounds. Perform the proofrolling after a suitable period of dry weather to avoid degrading the subgrade.
3. Areas which pump, rut, or wave during proofrolling may require undercutting, depending on the location of the area and the use of the area. You should anticipate undercutting to some level in wet areas or previously filled areas and trenches.

Preparation of Site Prior to Fill Placement Detail

Scale: N.T.S.

Compacted Fill Material

At this point, we can not provide Compacted Fill Material recommendations. You should expect that information in our final Geotechnical Evaluation, assuming you decide to move forward with the project.

Controlled Low-Strength Material (CLSM)

As an alternative to the low strength soils encountered at the site, one material that is often specified by designs, the KBC and KYTC is Controlled Low Strength Material. This material provides great benefits for backfill and quickens construction schedules. As you decide to move forward with the project, great value can be obtained from alternative backfill, stabilization and construction recommends provided in our final report.

Design Considerations

At this stage of development, the building type, loading, or site plans are unknown. The following information is only preliminary and shall not be used in final designs. Once site layouts and grading plans are finalizing, a final geotechnical evaluation shall be conducted and recommendations within the final report be followed.

Design for Capacity and Settlement

Item	Recommendation	
Probable Foundation Types	Continuous Perimeter & Spread Footings	
Allowable Bearing Capacity	Soil: 2,000 PSF Rock: 8,000 PSF	
Soil Friction Angle[1]	27°	
Apparent Soil Cohesion[2]	500 PSF	
Minimum Foundation Depth	Soil Bearing: 24 Inches Rock Bearing: As required by structural engineer	
Settlement Tolerances[3]	Soil Bearing	Rock Bearing
Overall	1 inch	0.5 inches
Differential	0.5 inches in 25 feet	< 0.25 inches in 25 feet

[1] Friction angle determined from NAVFAC DM-7 manual and plasticity index.
[2] Cohesion value determined from FHWA-06-089 Volume II and SPT Values.
[3] The listed tolerances are based upon generalized data and experience with similar foundations.

Additional Notes:

1. Rock coring to determine strength of bedrock and degree of fractures is highly recommended.
2. Bearing capacities for both soil and rock may change depending on final site plans and loading.
3. Rock bearing foundations shall be on competent bedrock only. Bedrock competency shall be verified by a geotechnical engineer for rock bearing foundations.
4. Soil bearing foundations shall have at least a 24 inch soil cushion between auger-able fractured rock and bottom of foundations.
5. Structural engineer requirements for footing thickness, width, and depth may override the minimum dimensions shown in the details above.
6. Pumping of groundwater is anticipated. Water should not be in foundation excavations during or immediately after concrete placement.
7. Foundation excavations should be free of all loose material prior to the placement of concrete.

Seismic Design Parameters

The 2018 edition of the Kentucky Building Code was used to determine the seismic site classification. The KBC requires that soil and conditions be evaluated to a depth of 100 feet below the foundation bearing elevation and refusal depths. We visited the ASCE 7 Online Hazard Tool to determine spectral analysis parameters for this site using ASCE 7-22. We additionally compared values presented in Table 1613.3.1 from the 2018 Kentucky Building Code. The following table presents both ASCE 7 and KBC parameters. KBC specific values for Fayette County are the controlling design parameters.

Description	Type	Value	Notes
Risk Category		II	Hospital
Refusal Depth (FT)		7	
Site Soil Class		C	
ASCE 7-22	S_S	0.26	
ASCE 7-22	S_1	0.093	
ASCE 7-22	PGA	0.13	
KBC County Specific	S_S	0.205	
KBC County Specific	S_1	0.090	

Design for Expansive Clays

Expansive soils are defined by the 2018 Kentucky Building Code (KBC) as soils meeting all four provisions listed in section 1803.5.3. Expansive clays were found during our exploration. As you move forward with a final Geotechnical Evaluation for the proposed project, we will provide specific designs and recommendations for the project and the expansive clays found on-site.

Concrete or Grout

It is anticipated that concrete and/or grout will be used for foundation elements. Please contact Thoroughbred once loading information is determined, so we can proved detailed recommendations for foundation proposed structures.

Pavements

It is anticipated that asphalt and concrete pavements will be used as part of the project. Once we are provided final site plans and traffic data, we can provide pavement section details. Soils encountered on-site were analyzed using the California Bearing Ratio (CBR) test for pavement sub-grade strength. Laboratory results indicated soils to have a CBR of 3.3% Soils with CBR values less than 4% likely require stabilized prior to pavement construction. Feasible stabilization methods include mechanical stabilization or undercut and replace. Below are considerations that should be evaluated as the project progresses.

Mechanical Stabilization

Soils at this site can be stabilized using coarse aggregates wrapped with a geotextile type fabric. KY No. 2 coarse aggregates with a thickness of 24 inches should be used. The course aggregates should be wrapped in a geotextile fabric meeting the requirements of a KYTC Class 2 Geotextile. Additional mechanical stabilization could include a use of Tensar NX-850 geogrid, or equivalent, at the base stone/ subgrade interface. Additional base stone may also be required.

Undercut and Replace Stabilization

Undercutting and replacing of unstable subgrades may be an option for achieving stability of subgrades below structures. Undercut depths are highly dependent on site conditions, loadings, soils and other factors. Undercut depths may be as much as two (2) or more feet. It is important that if replacement soils are used, those soils meet the requirements noted in this report and the project documents. Testing will be required for materials brought in from off site locations for acceptance.

Retaining Walls

Depending upon final grading plans and project requirements, retaining walls may be required. Design recommendations for retaining walls can be provided in a final geotechnical evaluation. Soils at the site contain ground water. Below grade structures, including retaining walls and basements, should include hydrostatic pressures in their design.

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

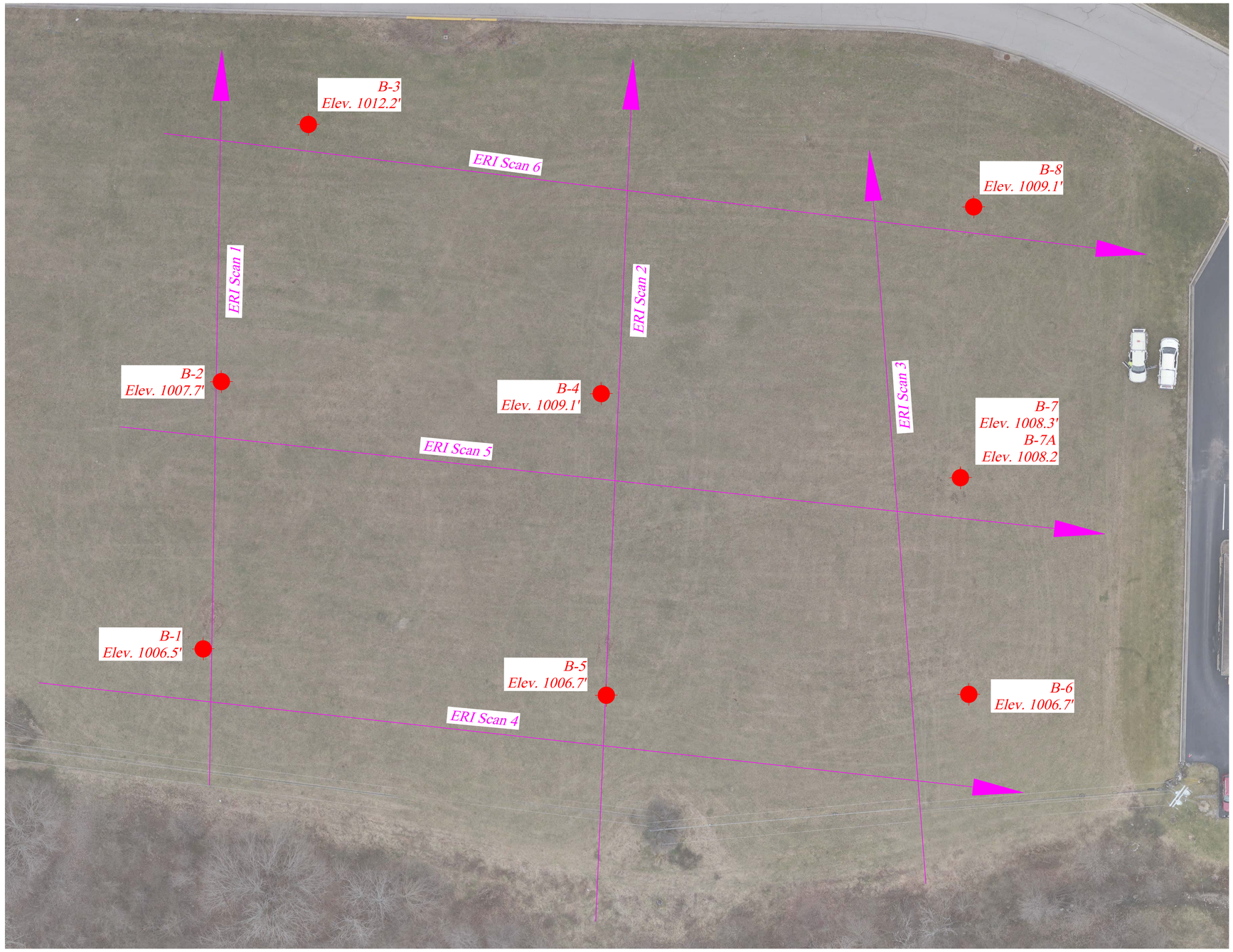
PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN P. HANEL
35057
LICENSED PROFESSIONAL ENGINEER

Excavation, Grading, & Fill

G - 7



General Drilling Information

Drilling Company:	Colt Exploration, LLC
Drill Rig Make:	Geoprobe
Drill Rig Model:	7822DT
Hammer Type:	Automatic
Hammer Weight:	140 lbs
Hammer Drop Height:	30 inches
Auger Size:	2-1/4" I.D. Hollow-Stem Auger
Core Size:	N/A
Drilling Method:	Auger
Project Manager:	Jordan Haney, P.E.
Driller:	James Campbell
Helper:	Rodger Rayburn
Logged By:	Matthew Hurley, E.I.T.
Date(s) Drilled:	January 15, 2024
Days Completed In:	One (1)

Note: Boring locations and elevations were surveyed by Thoroughbred Engineering.

Boring and Resistivity Scan Location Plan
Scale: 1" = 20'

LEGEND

B-1 INDICATES BORING LOCATIONS

ERI Scan 1 INDICATES RESISTIVITY SCAN LOCATIONS

0 20 40 60 80

SCALE: 1" - 20'

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

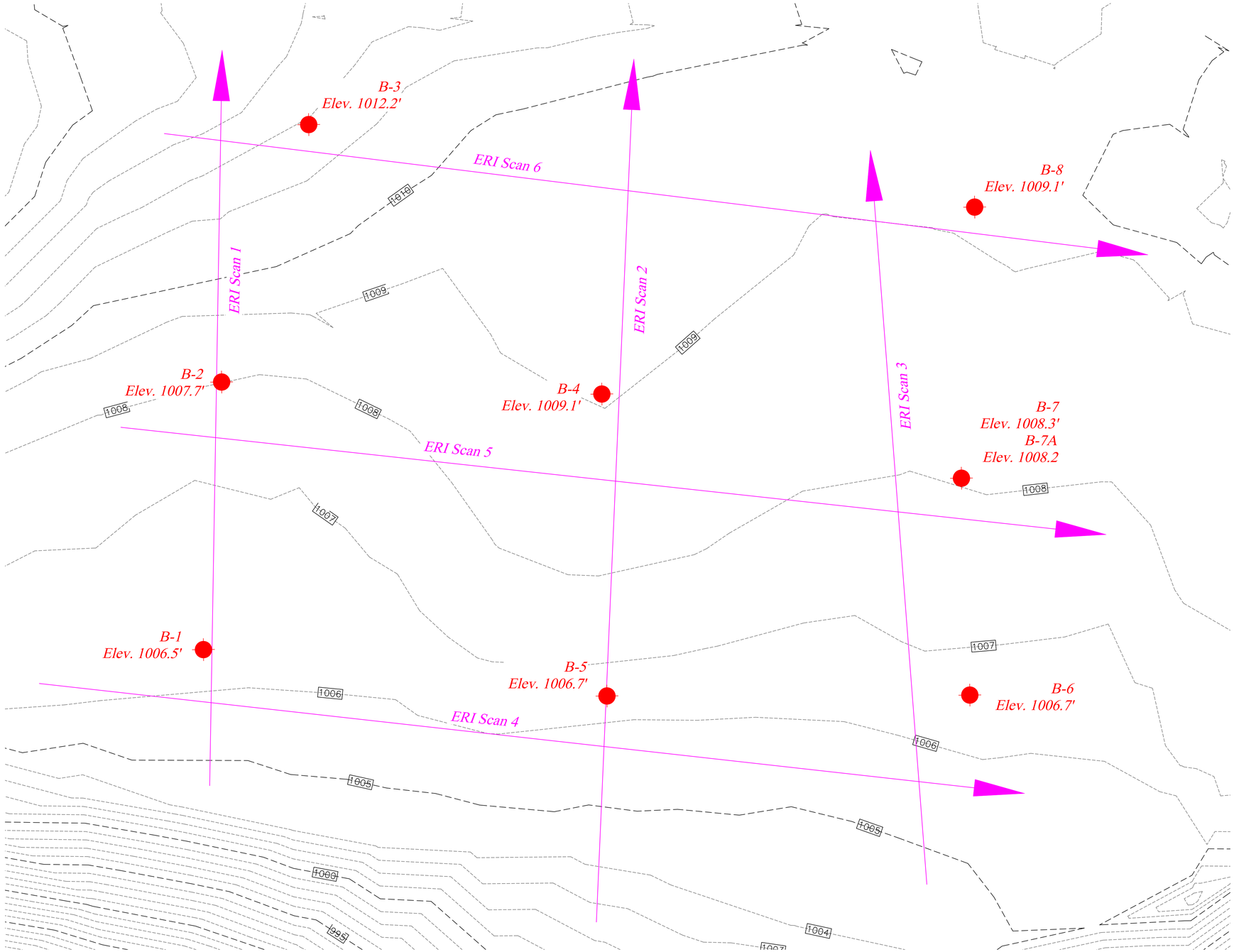
PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN P. HANEY
35057
LICENSED PROFESSIONAL ENGINEER

Aerial Location Map

G - 8



General Drilling Information

Drilling Company:	Colt Exploration, LLC
Drill Rig Make:	Geoprobe
Drill Rig Model:	7822DT
Hammer Type:	Automatic
Hammer Weight:	140 lbs
Hammer Drop Height:	30 inches
Auger Size:	2-1/4" I.D. Hollow-Stem Auger
Core Size:	N/A
Drilling Method:	Auger
Project Manager:	Jordan Haney, P.E.
Driller:	James Campbell
Helper:	Rodger Rayburn
Logged By:	Matthew Hurley, E.I.T.
Date(s) Drilled:	January 15, 2024
Days Completed In:	One (1)

Note: Boring locations and elevations were surveyed by Thoroughbred Engineering.

Boring and Resistivity Scan Location Plan

Scale: 1" = 20'

LEGEND

B-1 INDICATES BORING LOCATIONS

ERI Scan 1 INDICATES RESISTIVITY SCAN LOCATIONS

0 20 40 60 80

SCALE: 1" - 20'

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING, GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

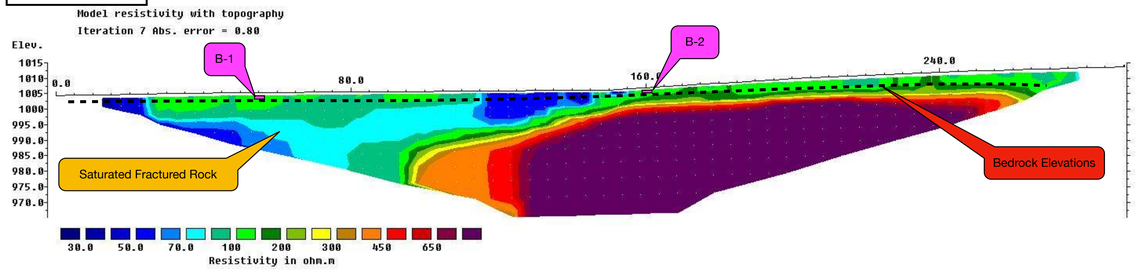
NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN P. HANEY
35057
LICENSED PROFESSIONAL ENGINEER

Topographical Location Map

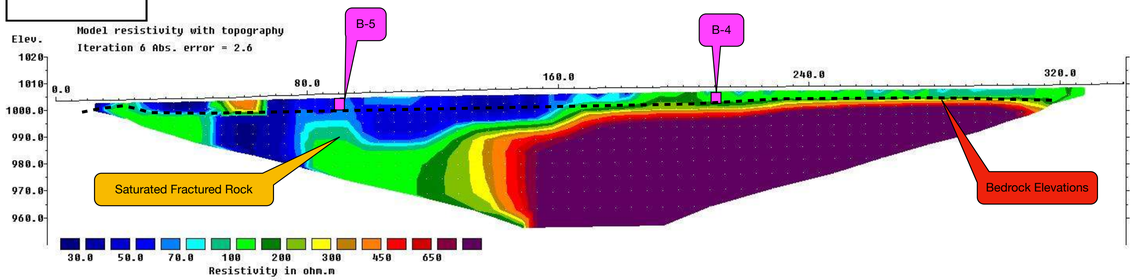
G - 9

ERI Scan 1



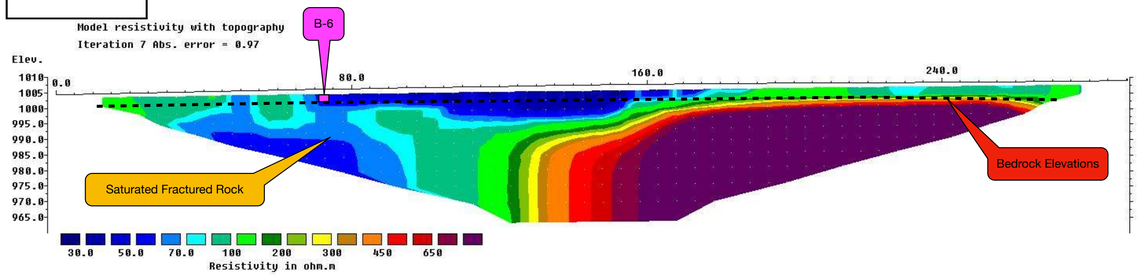
Horizontal scale is 23.50 pixels per unit spacing
Vertical exaggeration in model section display = 0.84
First electrode is located at 0.0 ft.
Last electrode is located at 290.2 ft. Unit Electrode Spacing = 5.00 ft.

ERI Scan 2



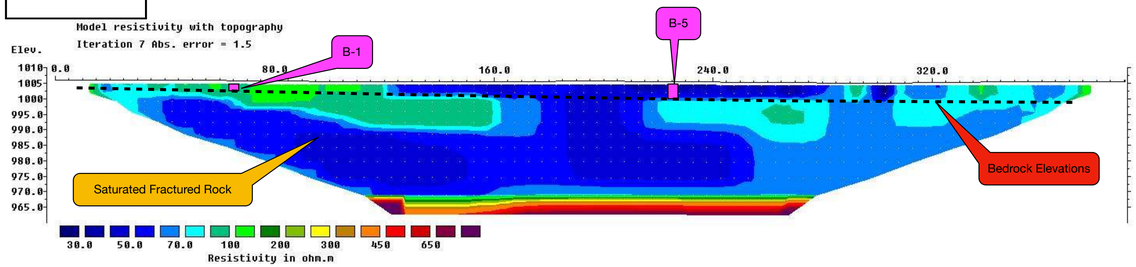
Horizontal scale is 20.00 pixels per unit spacing
Vertical exaggeration in model section display = 0.85
First electrode is located at 0.0 ft.
Last electrode is located at 340.2 ft. Unit Electrode Spacing = 5.00 ft.

ERI Scan 3



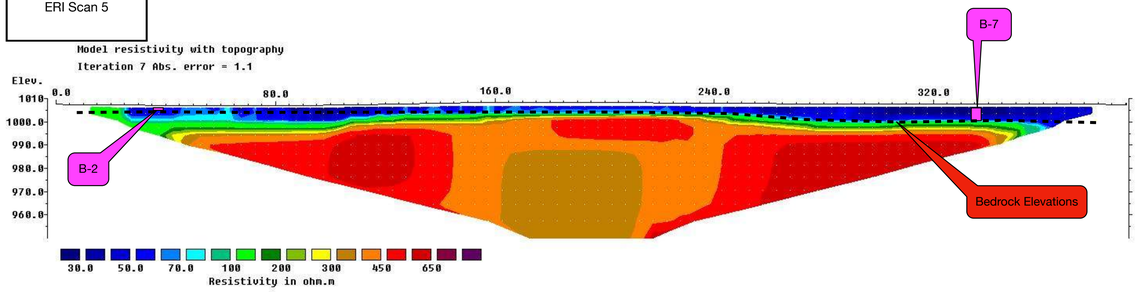
Horizontal scale is 23.50 pixels per unit spacing
Vertical exaggeration in model section display = 0.84
First electrode is located at 0.0 ft.
Last electrode is located at 290.2 ft. Unit Electrode Spacing = 5.00 ft.

ERI Scan 4



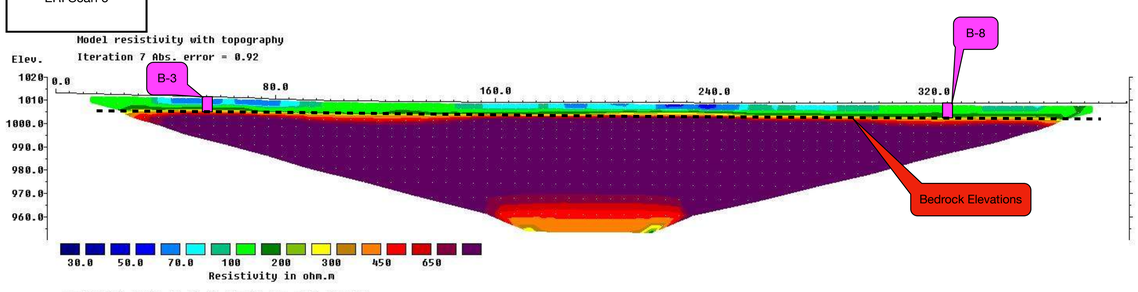
Horizontal scale is 17.50 pixels per unit spacing
Vertical exaggeration in model section display = 1.13
First electrode is located at 0.0 ft.
Last electrode is located at 390.3 ft. Unit Electrode Spacing = 5.00 ft.

ERI Scan 5



Horizontal scale is 17.50 pixels per unit spacing
Vertical exaggeration in model section display = 0.85
First electrode is located at 0.0 ft.
Last electrode is located at 390.3 ft. Unit Electrode Spacing = 5.00 ft.

ERI Scan 6



Horizontal scale is 17.50 pixels per unit spacing
Vertical exaggeration in model section display = 0.85
First electrode is located at 0.0 ft.
Last electrode is located at 390.3 ft. Unit Electrode Spacing = 5.00 ft.

Electric Resistivity Imaging Summary

In summary, the entire site underlain by fractured bedrock to bedrock. This bedrock was found to be fractured and auger-able rock and rock fragments in several borings, see pages G-12 and G-13. The fractures within the bedrock appear to be fill with water shown on the left side of ERI Scans 1, 2, 3, and the entire ERI Scan 4. Water was encountered in these lower resistive values both during drilling and 24 hours after drilling.

The right sides of the ERI Scans 1, 2, and 3 seem to mostly consist of higher resistive material that overlay layers of higher resistive materials. These higher resistive materials below the saturated materials are anticipated to be weathered bedrock or bedrock. Due to the nature of bedrock and its inability to conduct electricity, it is often seen as a highly resistive material. During testing conducted for this report, resistivity values of approximately 650 ohm/m were encountered along all ERI scans suggesting approximate bedrock elevations, as denoted by the dashed lines. On scans that had no nearby borings, anticipated bedrock elevations were drawn based on ERI resistivity trends and auger refusals.

These conclusions are based solely upon Electrical Resistivity Imaging (ERI) conducted for the project. Also these conclusions as those stated on ERI Scans above are all considered anticipated. ERI is limited to the material which the instrumentation signals are traveling through and user interpretation of those signals. As a result, misinterpretations can occur. The interpretations included in our services are not guarantees of the actual conditions.

ERI Testing Information

Item	Note
Interpreter(s) of Resistivity Scans	Mr. Nathan Kidd
Purpose and Scope	Observe subsurface conditions
Geological Setting	See Rock Strata Section of this Plan.
Limitations	No limitations were observed during ERI testing.
Assumptions	Horizontal (or parallel) layered conditions where each layer has a uniform electrical resistivity. Water may be the major component that results in lower resistive values.
Description of Field Approach and Exploration	A planned map and GPS locations of ERI was followed in the field.

Equipment Used	
Earth Resistivity Meter	4point light 10W
Number of Electrodes	60
Electrode ID Numbers Used	1-20, 21-40
Array Used	Dipole-Dipole
Approximate Spacing Used	10 feet (3.05 meters)
Corrections Applied	Topography
Programs Used	
Field Collection	Geotest
Processing	Res2Dinvx64
How to Control Current	Resulting Voltage between {Umin .. Umax}
Sequence	Control Current –> Measure Mean
Voltage Used for Controlling	U
Voltage U/U90 Limits (mv)	
Minimum	10.000 Umin
Maximum	300.000 Umax
Measurements / Mean	
n Min	2
n Max	5
Limit (%)	2.000
Averaging Method - Measure Until	Error < Limit
At Each ABMN Position	
Switch on booster	Yes
Measure Transmitter Voltage	Yes
n AB Max	9
Current	
Min	0.100
Max	100.000
Frequency (Hz) - Standard	5

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

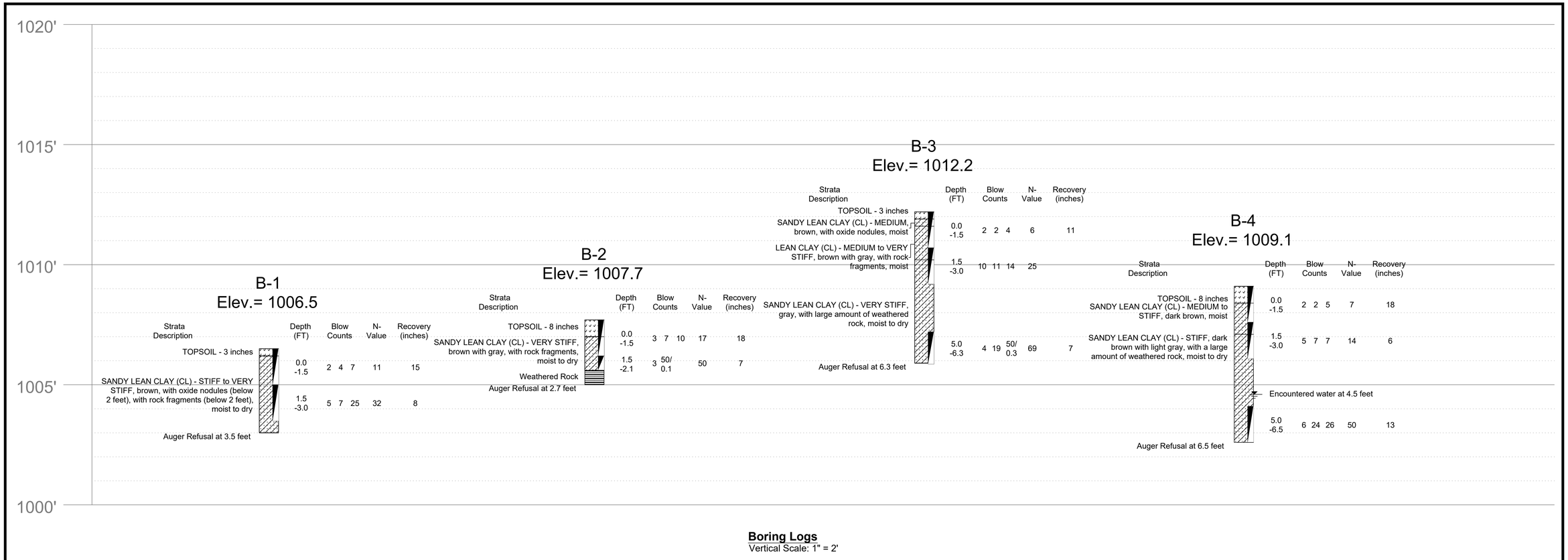
PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN HANEY
9505
LICENSED PROFESSIONAL ENGINEER

ERI Scans

G - 10



Boring Logs
Vertical Scale: 1" = 2'

LEGEND

ASPHALT/CONCRETE		SANDY SILT (ML)		Splitspoon Sample (SPT)	
TOPSOIL		FAT CLAY (CH)		Grab Sample	
BASE STONE/GRAVEL		SANDY FAT CLAY (CH)		Shelby Tube (UD)	
POSSIBLE FILL		GRAVELLY FAT CLAY (CH)		Rock Core	
SAND (SP)		WEATHERED ROCK		Water Level (during drilling)	
SILTY SAND (SM)		SHALE		24 hr. Water Level Reading	
SILT (ML)		SANDSTONE		Weight of Hammer	WOH
LEAN CLAY (CL)		LIMESTONE			
SANDY LEAN CLAY (CL)					
GRAVELLY LEAN CLAY (CL)					
SILTY CLAY (CL-ML)					
SANDY SILTY CLAY (CL-ML)					
GRAVELLY SILTY CLAY (CL-ML)					

0 2 4 6
VERTICAL SCALE : 1" = 2'

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING, GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

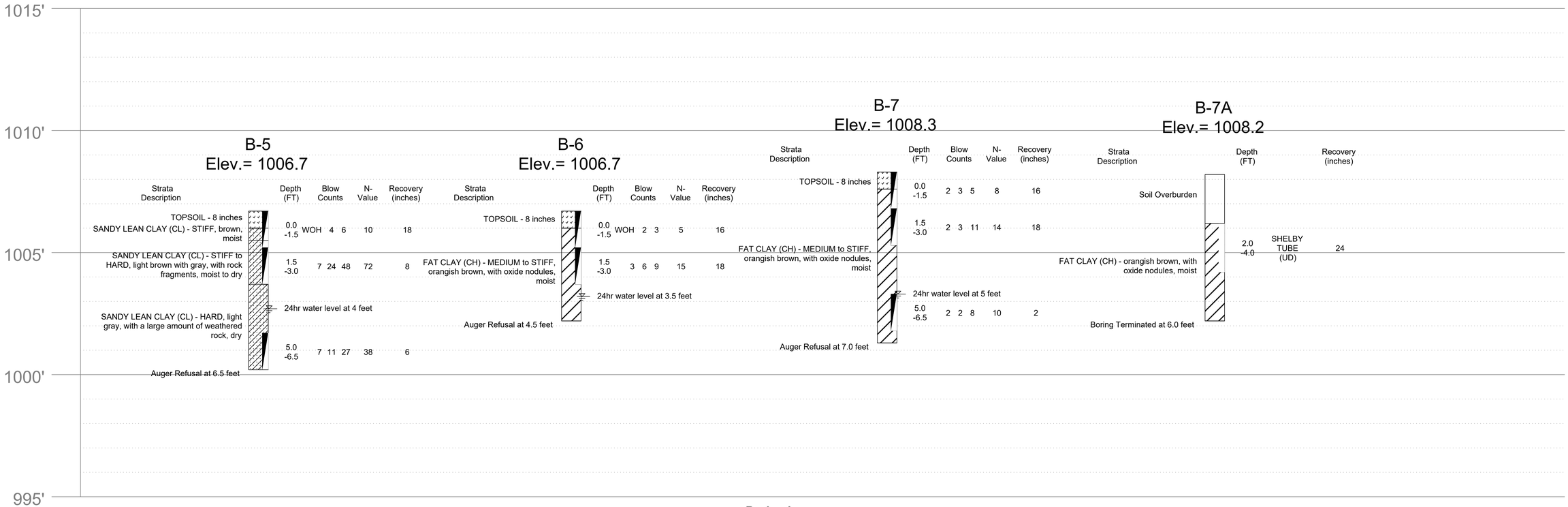
PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

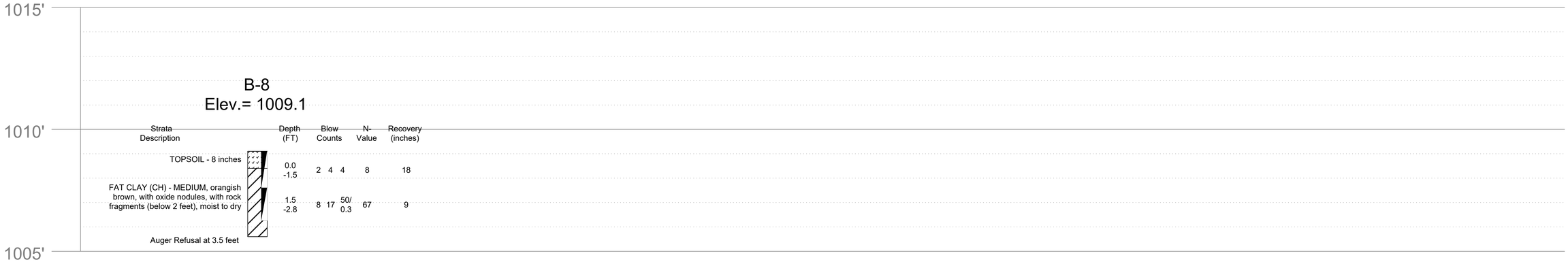
STATE OF KENTUCKY
JORDAN P. HANEY
19057
LICENSED PROFESSIONAL ENGINEER

Boring Logs

G - 11



Boring Logs
Vertical Scale: 1" = 2'



Boring Logs
Vertical Scale: 1" = 2'

LEGEND

ASPHALT/CONCRETE	SANDY SILT (ML)	Splitspoon Sample (SPT)	
TOPSOIL	FAT CLAY (CH)	Grab Sample	
BASE STONE/GRAVEL	SANDY FAT CLAY (CH)	Shelby Tube (UD)	
POSSIBLE FILL	GRAVELLY FAT CLAY (CH)	Rock Core	
SAND (SP)	WEATHERED ROCK	Water Level (during drilling)	
SILTY SAND (SM)	SHALE	24 hr. Water Level Reading	
SILT (ML)	SANDSTONE	Weight of Hammer	WOH
LEAN CLAY (CL)	LIMESTONE		
SANDY LEAN CLAY (CL)			
GRAVELLY LEAN CLAY (CL)			
SILTY CLAY (CL-ML)			
SANDY SILTY CLAY (CL-ML)			
GRAVELLY SILTY CLAY (CL-ML)			

0 2 4 6
VERTICAL SCALE : 1" = 2'

P.O. BOX 481 LEXINGTON, KY 40588
(859) 785-0383
CIVIL DESIGN, LAND SURVEYING,GEOTECH. ENGINEERING
DRILLING SERVICES, STRUCTURAL & ARCHITECTURAL DESIGN
IBC SPECIAL INSPECTIONS, MATERIAL TESTING,
CM-CEI-CONSTRUCTION SERVICES

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

Preliminary Geotechnical Evaluation
Montgomery County Health Department
Commonwealth Drive
Mount Sterling, Kentucky 40353

PROJECT NO.:	DRAWN BY:
240027	MAH
DATE:	REVIEW BY:
4.11.2024	JPH

NO.	REVISION:	DATE:

STATE OF KENTUCKY
JORDAN P. HANEY
19097
LICENSED PROFESSIONAL ENGINEER

Boring Logs

G - 12

MONTGOMERY COUNTY HEALTH DEPARTMENT
103 COMMONWEALTH DRIVE, MT STERLING, KY
CONCEPTUAL SITE PLAN

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT

2/21/2025 4:24:17 PM

1 SCHEMATIC - FLOOR PLAN

1/8" = 1'-0"

0 4' 8' 16'
0 2"
1/8" = 1'-0"

N

ROOM SCHEDULE

Department	Name	Area
Admin		
Admin	BREAKROOM	111 SF
Admin	COPY PRINT	88 SF
Admin	DIRECTOR	194 SF
Admin	DIRECTOR'S CONF.	174 SF
Admin	FILE AREA	168 SF
Admin	FINANCE ASSIST	193 SF
Admin	FINANCE MANAGER	223 SF
Admin	FINANCE STORAGE	121 SF
Admin	GENERAL STORAGE	111 SF
Admin	GENERAL STORAGE	96 SF
Admin	HR MANAGER	193 SF
Admin	HR STORAGE	121 SF
Admin	MAINTENANCE	159 SF
Admin	MEETING ROOM	285 SF
Admin	RR STAFF	50 SF
Admin		2286 SF
Clinic		
Clinic	BREAK	192 SF
Clinic	BREAST FEEDING	103 SF
Clinic	CHARTS	296 SF
Clinic	CLERK	96 SF
Clinic	CLERK	96 SF
Clinic	CLERK	96 SF
Clinic	CLERK	96 SF
Clinic	CLINIC MANAGER	195 SF
Clinic	EXAM	157 SF
Clinic	EXAM	157 SF
Clinic	EXAM	157 SF
Clinic	EXAM (INF. DIS.)	151 SF
Clinic	FRONT DESK	135 SF
Clinic	HIGH DENSITY FILES	261 SF
Clinic	JANITOR	100 SF
Clinic	LAB	232 SF
Clinic	NURSE STORAGE	122 SF
Clinic	NURSE STORAGE	208 SF
Clinic	REP DISEASE NURSE	199 SF
Clinic	RR CLIENT	50 SF
Clinic	RR LAB	57 SF
Clinic	SCALE	11 SF
Clinic	WAITING	285 SF
Clinic	WORK/COPY	139 SF
Clinic		3590 SF
Community		
Community	COMMUNITY ROOM	1050 SF
Community	JANITOR	30 SF
Community	KITCHEN	268 SF
Community	SHOWER	51 SF
Community	SHOWER	51 SF
Community	TABLES & CHAIRS	109 SF
Community		1560 SF
Environmental		
Environmental	CLERK	55 SF
Environmental	ENV. LOBBY	179 SF
Environmental	OPEN OFFICE	341 SF
Environmental		575 SF
HANDS		
HANDS	HANDS	491 SF
HANDS	HANDS STORAGE	155 SF
HANDS	MANAGER	187 SF
HANDS	SUPERVISOR	187 SF
HANDS		1020 SF
Health Education		
Health Education	HEALTH EDUCATION OFFICE	372 SF
Health Education	HEALTH EDUCATION STORAGE	155 SF
Health Education	MANAGER	187 SF
Health Education		714 SF
TOTAL ASSIGNED AREA		9745 SF

NET AREAS ABOVE DO NOT YET INCLUDE GROSS AREA ITEMS SUCH AS WALL THICKNESS, CODE REQUIRED RESTROOMS, MECHANICAL ROOMS, AND CIRCULATION AREAS.

GROSS AREA = 15,081 SF

LIFE SAFETY NOTES:
OCC. CLASS B (A3 IS ACCESSORY PER 508.2.3)
IIB CONST. TYPE
SPRINKLERED

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT
1409 N. FORBES RD. LEXINGTON, KY 40511
(859) 785-0383

FIRST FLOOR PLAN

Montgomery Co. Health Dept.
103 Commonwealth Dr,
Mt. Sterling, KY 40353

PROJECT NO.:	DRAWN BY:
240296	
DATE:	REVIEW BY:
02/13/2025	

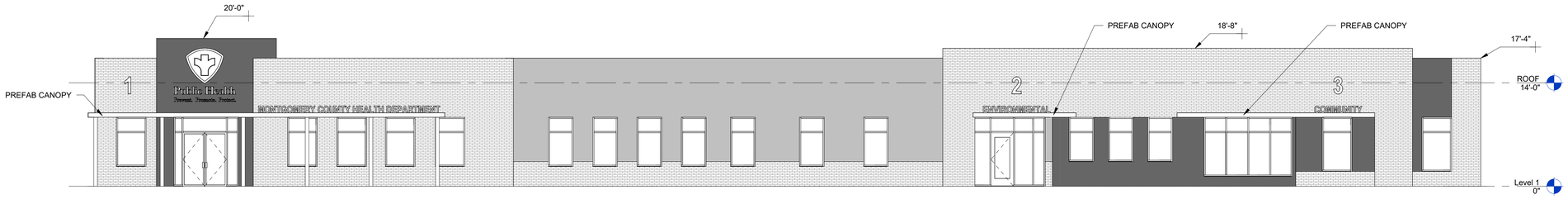
PROJECT STATUS

NO.	REVISION:	DATE:

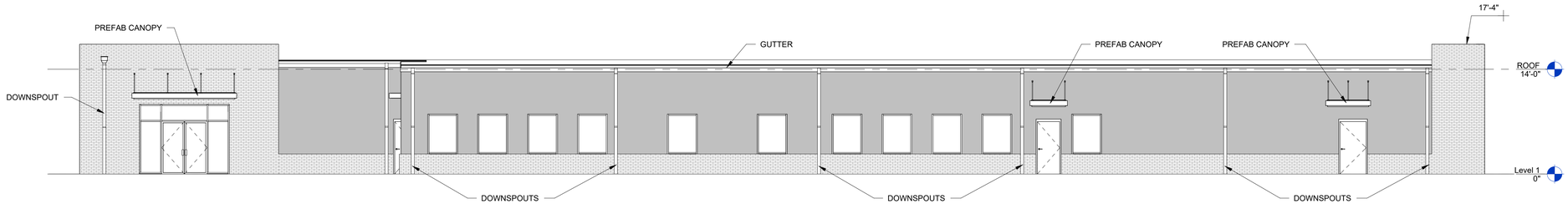
NOT FOR CONSTRUCTION - REFERENCE ONLY

A101

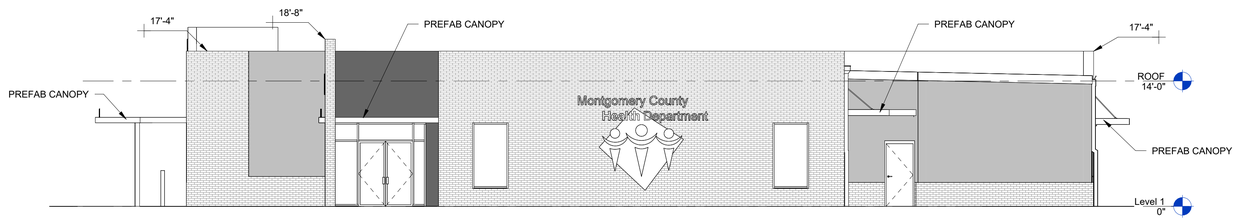
Autodesk Docs://Montgomery County Health Department/ARCH_MCHD.rvt



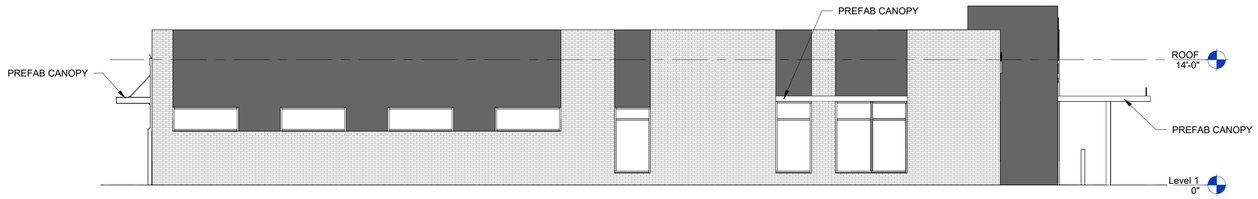
1 NORTH
1/8" = 1'-0"



2 SOUTH
1/8" = 1'-0"



3 WEST
1/8" = 1'-0"



4 EAST
1/8" = 1'-0"

0 4' 8' 16'
0 2"
1/8" = 1'-0"

ELEVATION LEGEND

- BRICK VENEER
- EIFS
- METAL PANEL

THOROUGHBRED
DESIGN | ENGINEER | CONSTRUCT
1409 N. FORBES RD. LEXINGTON, KY 40511
(859) 785-0383

ELEVATIONS

Montgomery Co. Health Dept.
103 Commonwealth Dr,
Mt. Sterling, KY 40353

PROJECT NO.:	DRAWN BY:
240296	
DATE: 02/13/2025	REVIEW BY:

PROJECT STATUS

NO.	REVISION:	DATE:
1	ELEVATION REVISION	03/10/2025

NOT FOR CONSTRUCTION - REFERENCE ONLY

A201

NORTH EAST CORNER

ENVIRONMENTAL OFFICE

COMMUNITY CENTER

REAR FACADE