Ripon Office
608 North Stanton Street
Ripon, Wisconsin 54971

May 30, 2025

Ms. Erin Gerred
Fond du Lac County
160 South Macy Street
Fond du Lac, Wisconsin 54935

Re: Geotechnical Exploration and Evaluation
Proposed Fond du Lac County Jail Expansion
63 Western Avenue
Fond du Lac, Wisconsin 54935
PSI Report Number: 00922860

Dear Ms. Gerred,

The geotechnical exploration and evaluation for the above referenced project has been completed, the results of which are included herein. A copy has been provided electronically. After you have had the opportunity of reading the report, please call at any time with any questions or comments you may have. Professional Service Industries, Inc. (PSI), an Intertek company, appreciates the opportunity to be of service on this project, and looks forward to continuing as your geotechnical consultant during the design and construction phases, as well as your upcoming projects.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

David Egerton
Staff Geologist

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GEOTECHNICAL EXPLORATION AND EVALUATION

For the:

Proposed Fond du Lac County Jail Expansion
63 Western Avenue
Fond du Lac, Wisconsin 54935

Prepared for:

Ms. Erin Gerred
Fond du Lac County
160 South Macy Street
Fond du Lac, Wisconsin 54935

Prepared by:

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May 30, 2025

PSI Report Number: 00922860

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1 INTRODUCTION

1.1 GENERAL

This report presents the results of the geotechnical exploration and evaluation for the Fond du Lac County Jail Expansion in Fond du Lac, Wisconsin. The work was performed for Fond du Lac County, at the request of Ms. Erin Gerred.

1.2 PURPOSE

The purpose of this study was to evaluate the subsurface conditions at specific boring locations on the site, and to establish parameters for use by the design engineers and architects in preparing the foundation and floor slab for the proposed expansion project.

In addition to the planned jail expansion, it is understood that portions of the existing jail building will be renovated/repaired due to floor slab settling that has been experienced. As requested, borings B-7 and B-8 were performed to provide additional subsurface information for use by the client with regard to the planned renovation/repairs. No evaluation of potential causes of the settlement, and no evaluation or recommendations related to the planned repairs/renovation were performed by PSI as part of this report.

1.3 SCOPE

The scope of services included the subsurface exploration, an evaluation of soil characteristics by field and laboratory testing, and an evaluation of the data obtained. Subgrade preparation recommendations and construction considerations are also provided. The scope of the field work, including the number, depth, and locations of the borings was determined by the client.

1.4 AUTHORIZATION

The description of services and authorization to perform this subsurface exploration and evaluation were in the form of a signed acceptance copy of PSI Proposal No. 0092-447107, dated April 4, 2025. The general conditions for the performance of the work were referenced in the proposal. This report has been prepared on behalf of, and exclusively for the use of Fond du Lac County. The information contained in this report may not be relied upon by any other parties without the express written consent of PSI, and acceptance by such parties of PSI's General Conditions.

2 SITE AND PROJECT DESCRIPTION

2.1 SITE FEATURES

The existing jail is located at 63 Western Avenue (on the northwest corner of Western Avenue and South Macy Street/Linden Street), in Fond du Lac, Wisconsin. The building expansion will be constructed on the south side of Western Ave., which currently consists of an asphalt parking lot. The project will include a skywalk from the existing jail to the new building. Portions of the

skywalk will bear just south of the existing jail structure, in an area currently consisting of a concrete driveway. The surrounding area consists of the Fond du Lac County Jail to the north, Linden Street followed by residential properties to the east, residential properties to the south, and Elm Street followed by residential properties to the west. Based upon a review of aerial photography viewed on Google Earth of various years between 1992 and 2023, the subject property remained relatively similar in appearance to as they are currently since at least 1992. However, the photos prior to the 2010 photo are grainy and details were difficult to discern. The subject site is depicted on the enclosed Boring Location Map (Figure 1).

The topography of the subject site is flat, with an elevation difference of about 1 foot between the boring locations. Existing elevations at the borings ranged between about EL. 759.5 and EL. 760.5. The site generally slopes down to the west.

2.2 PROJECT DESCRIPTION

Based on the information provided, it is understood that the proposed development will consist of a new free standing 4-story building (B-1 through B-4, and B-9 through B-11) that will be attached to the existing jail via a skywalk that will extend over Western Ave. No basement is planned. The building will be about 120,000 square feet in plan. Footings for the skywalk (B-5 and B-6) will be placed about 10 feet south of the existing building (just north of Western Ave.), and will support a foundation wall or columns that extend up to the bottom of the skywalk. Maximum column and wall loads not exceeding 1300 kips and 20 kips per lineal foot, respectively, were provided to PSI. No additional design information was provided at the time of this report.

The finished first floor elevation was not known at the time of report preparation. Based on the existing grades of the project site in relation to adjacent roadways and developments, a finished first floor elevation of EL. 760 was estimated for use in this evaluation. The existing elevations at the site range from about EL. 759.5 and EL. 760.5. Therefore, on the basis of the estimated finished first floor elevation, nominal cuts and fills of up to about 0.5 feet are estimated to be necessary to establish the floor and surface grade. However, this will also be dependent on the subgrade preparation criteria, to be discussed in a later section. When a finished floor elevation is established, PSI must be informed so that any necessary re-evaluation or revisions to this report can be made.

When any additional information becomes available, and if any of the information presented herein changes or is incorrect, PSI must be informed so that any necessary re-evaluation or revisions to this report can be made.

3 EXPLORATION AND LABORATORY PROCEDURES

3.1 SCOPE SUMMARY

The field and laboratory data utilized in the evaluation of the subsurface materials was obtained by drilling exploratory test borings, securing soil samples by the split-spoon sampling method, and subjecting the samples to laboratory testing.

3.2 FIELD EXPLORATION

A total of twelve (12) soil test borings were proposed for this project to depths of about 30 to 40 feet below the existing ground surface. However, one boring was eliminated by the client, and B-8 was terminated after drilling to a depth of about 3.5 feet (EL. 756.5) due to the presence of an unknown obstruction. B-5 through B-8 were offset from their planned locations in order to avoid utility lines. The number, depths, and locations of the borings were determined by the client. The borings were located and marked in the field by the client. They are estimated to be accurate to within several feet. The approximate locations of the borings performed are shown on the Boring Location Map (Figure 1), which is provided in the Appendix of this report. The surface elevations shown on the soil boring logs were interpolated from a 1-foot contour map provided by the client. They are estimated to be accurate to within about 1 foot.

The soil test borings were performed with an ATV-mounted rotary drilling rig utilizing continuous flight hollow stem augers to advance the holes. Representative samples were obtained by the Standard Penetration Test (SPT) method using split-spoon sampling procedures in general accordance with ASTM D-1586 procedures. Samples were collected at 2.5-foot intervals to 10 feet, and then at 5-foot intervals thereafter to the end of the borings. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty (30) inches, required to advance the split-spoon sampler one (1) foot into the soil. The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of the three (3) successive increments of six (6) inches of penetration. The “N” value is obtained by adding the second and third incremental numbers. The SPT provides a means of estimating the relative density of granular soils and comparative consistency of cohesive soils, thereby providing a method of evaluating the relative strength and compressibility characteristics of the subsoils.

The SPT soil samples were transferred into clean glass jars immediately after retrieval and returned to the laboratory upon completion of the field operations. Samples will be discarded unless other instructions are received. All soil samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488-75). A description of the subsurface conditions encountered at each boring location is shown on the enclosed Soil Boring Logs. After completion of the borings, the auger holes were backfilled to the ground surface with bentonite chips. The surface of the borings drilled in asphalt pavement were patched with cold mix asphalt, and the borings drilled in concrete pavement were patched with Quikrete or other similar bagged type concrete mix by the drill crew upon completion.

A copy of the Soil Boring Logs and Boring Location Map (Figure 1) are enclosed in the Appendix. The soil stratification shown on the logs represents the approximate soil conditions

in the actual boring locations at the time of the exploration. The terms and symbols used on the logs are described in the General Notes found in the Appendix.

3.3 LABORATORY PHYSICAL TESTING

Soil samples obtained from the exploration were visually classified in the laboratory, and subjected to testing, which included moisture content determinations. Selected cohesive soil samples were tested in unconfined compression with a controlled strain loading rate and/or with a calibrated hand penetrometer to aid in evaluating the soil strength characteristics. The values of strength tests performed on soil samples obtained by the Standard Penetration Test Method (SPT) are considered approximate, recognizing that the SPT method provides a representative but somewhat disturbed soil sample. The laboratory testing was performed in general accordance with the respective ASTM methods, as applicable, and the results are shown on the boring logs and data sheets in the Appendix.

4 DESCRIPTION OF SUBSURFACE CONDITIONS

4.1 GENERAL

A description of the subsurface conditions encountered at the test boring locations is shown on the Soil Boring Logs. The lines of demarcation shown on the logs represent approximate boundaries between the various soil classifications. It must be recognized that the soil descriptions are considered representative for the specific test boring location, but that variations may occur between and beyond the sampling intervals and boring locations. Soil depths, topsoil and layer thicknesses, and demarcation lines utilized for preconstruction planning should not be expected to yield exact and final quantities. A summary of the major soil profile components is described in the following paragraphs.

4.2 SUBSURFACE CONDITIONS

The surface materials at B-1 through B-4, and B-9 through B-11 consisted of about 4 to 7 inches of asphalt. The surface materials at B-6 and B-7 consisted of about 6 inches of concrete. The materials underlying the pavement at B-1 through B-4, B-6, B-7, and B-9 through B-11 consisted of about 5 to 16 inches of sand and gravel classified as base course fill. The surface materials at B-5 and B-8 consisted of 7 and 5 inches, respectively, of silt with sand classified as topsoil fill. The materials underlying the base course fill at B-1, and B-3 through B-11 consisted of sand or clay with varying gravel content classified as fill to depths of about 2 to 3.5 feet (EL. 758.5 to EL. 756) below the existing ground surface. The soil beneath the fill in B-5 consisted of dark brown clay with silt classified as buried topsoil to a depth of about 3.5 feet (EL. 756.5) below grade. The underlying natural soils beneath the buried topsoil in B-5; the base course in B-2; and beneath the fill in B-1, and B-3 through B-11 consisted clay.

The granular fill soils encountered in the borings were generally very loose to dense in relative density, with Standard Penetration Resistances (N-values) typically between about 7 and 35 blows per foot of penetration (bpf).

The cohesive fill soils encountered in B-4 and B-10 were generally medium stiff to very stiff in consistency, with unconfined compressive strengths of 3.25 to 3.5 tons per square foot (tsf), and N-values between about 6 and 7 bpf.

The natural cohesive soils encountered in the borings were generally stiff to hard in consistency, with unconfined compressive strengths of 1.90 to 7.97 tons per square foot (tsf), and N-values between about 7 and 30 bpf.

It should be noted that possible petroleum odors were observed in the split-spoon soil samples recovered from a depth of about 1 to 6 feet below existing grade in B-1, 3.5 to 8.5 feet below existing grade in B-2, 2 to 5 feet in B-3, and 3.5 to 5 feet in B-7.

The fill soils were classified as such based on their varied visual characteristics and composition. However, it must be recognized that in the absence of foreign substances and/or debris within the soil samples obtained, it is often difficult to distinguish between natural soils and clean soil fill.

The foregoing discussion of soil conditions on this site represents a generalized soil profile as determined at the test boring locations. A more detailed description and supporting data for each test location can be found on the individual Soil Boring Logs.

4.3 GROUNDWATER OBSERVATIONS

Groundwater observations were made during the drilling operations. Groundwater was encountered during auger advancement at B-1 and B-9 at depths of about 28.5 and 33.5 feet (EL. 731.5 and EL. 726), respectively, below the ground surface. Groundwater was encountered in the open boreholes upon completion and removal of the augers at B-1 and B-2 at depths of about 13 and 12 feet (EL. 749 and EL. 748.5), respectively, below grade. All of the borings caved at various depths; therefore, observations could not be made below the caved depths.

The groundwater observations reported herein are considered approximate. It must be recognized that groundwater levels fluctuate with time due to variations in seasonal precipitation, lateral drainage conditions, and soil permeability characteristics. Longer term monitoring would be required to further evaluate groundwater levels on this site.

5 CONSIDERATIONS AND RECOMMENDATIONS

5.1 GENERAL DEVELOPMENT CONSIDERATIONS

In view of the subsurface conditions encountered in the building borings (B-1 through B-6, and B-9 through B-11), together with the estimated structural loading criteria and development grades anticipated, conventional spread footings, along with conventional slab-on-grade construction, can be used for support of the proposed building and skywalk. However, fill was encountered at the borings to depths of about 2 to 3.5 feet (EL. 758.5 to EL. 756) below grade. In addition, buried topsoil was present to a depth of about 3.5 feet (EL. 756.5) at B-5. Such

materials are not suitable for support and all foundations must be extended to through the fill and any buried topsoil to bear upon underlying natural soils or upon compacted structural fill (or lean concrete) used to replace the unsuitable soils. It is generally estimated that frost depth footings bearing at about EL. 756 will extend through the fill and buried topsoil. Undercuts of up to about 2.5 feet below interior footings are estimated to be necessary. Undercutting of soft, loose, or otherwise unsuitable natural soils may also be required.

Possible petroleum odors were noted in the split-spoon soil samples recovered from a depth of about 1 to 6 feet below existing grade in B-1, 3.5 to 8.5 feet below existing grade in B-2, 2 to 5 feet in B-3, and 3.5 to 5 feet in B-7. This will be further discussed in a separate "environmental" report being prepared by PSI.

The existing soils (with the exception of buried topsoil) can be utilized for support of the floor slab after proper subgrade preparation. However, some overexcavation of soft, loose, or otherwise unsuitable soils may be necessary. Additionally, it is recommended that any buried topsoil, such as was encountered in B-5, be completely removed and replaced from beneath floor slabs and foundations. The removal must extend for a lateral distance equal to at least one foot beyond the slab or foundation perimeter for every vertical foot of removal below the planned bearing depth.

A discussion of the building foundation design parameters, as well as the support conditions for the floor slabs are included in later sections.

5.2 SITE PREPARATION

The presence of organic topsoil and vegetation within the subgrade can adversely affect the serviceability of structural fills, foundations, floor slabs, and other structures placed upon them. Approximately 5 and 7 inches of topsoil were present on the surface of the site at B-5 and B-8. However, some variation is likely. All topsoil, buried topsoil, vegetation, trees, roots, and other organic matter present at the time of construction must be completely removed from within the areas of floor slabs, footings, and other structural areas. The existing pavement and base course must also be removed.

Backfill adjacent to the existing foundation walls, and within any existing utility trenches, must be evaluated by a representative of the soil engineer to determine its suitability to support new fill, floor slabs, and footings. Some removal of loose or unsuitable soils may be necessary. Existing utilities or portions of the existing structure that extend into the planned new development areas must be completely removed or rerouted, as necessary, and the area properly backfilled.

After stripping the topsoil and pavement, and cutting high areas of the site to the planned finished grade, and prior to the placement of new fill which may be placed to raise grades, the subgrade must be thoroughly proofrolled to detect unstable, yielding soils. This should consist of overlapping passes in a perpendicular grid pattern, with a fully loaded tandem-axle dump truck, or other equipment of similar size and weight suitable for the surface conditions. Proofrolling should be performed in consultation with the geotechnical engineer at the time of

construction. Some difficulty with subgrade preparation may be experienced, especially in wet or cold weather, or during thawing conditions. Additionally, instability can become more severe in silty and clayey materials, which are considered to be moderately to highly moisture sensitive. It is generally recommended that earthwork be carried out during relatively warm, dry weather. Any soft, wet, or otherwise unstable zones which cannot be improved by scarification and aeration, must be removed and replaced with compacted structural fill, such as clean crushed stone, possibly in conjunction with the use of a geotextile fabric. Construction delays and difficulty with subgrade stabilization may be experienced during periods of wet and/or cool weather.

Every effort must be made to keep excavations dry. If construction proceeds during wet weather, some additional overexcavation may be necessary. If weather permits, the soil could be dried and recompacted. A crushed stone working mat, possibly in conjunction with a geotextile fabric may also be feasible to help stabilize subgrades. Site grading runoff should be directed to appropriate areas of the site, so that the potential for the softening of the foundation subgrade soils is reduced.

If site grades are raised in excess of 2 feet, the first lift of new fill must be placed so as to extend a minimum lateral distance of 5 feet beyond the planned top building pad dimension (for fills less than 5 feet in thickness), or for a distance equal to at least 1 foot laterally beyond the top pad dimension for every foot of fill thickness (for fills greater than 5 feet in depth). Subsequent lifts can then be placed on an approximate 1H:1V slope back up to the planned top perimeter dimension of the pad. Similarly, where undercutting of unsuitable soils is performed beneath foundations, floor slabs, or other structural areas, it is recommended that the removal extend laterally beyond the perimeter of the structure at least 1 foot for every foot of removal below the planned bearing depth. Proper moisture control is essential to reduce the amount of compactive effort necessary to achieve the desired densities.

When a firm and stable subgrade is established, low areas may be raised to planned grades with properly compacted structural fill. Any new fill should be a clean granular soil, such as those materials meeting the gradations outlined in Section 209 or 305 of the State of Wisconsin Standard Specification for Highway and Structure Construction. If fine-grained soils, such as those with high silt or clay content are used, they should generally be placed over large open areas, where conditions are more favorable for the proper placement and compaction of such materials. It must be recognized that high silt or clay content materials are extremely difficult to compact when placed at moisture contents beyond a few percent of the optimum moisture content. Fill must be placed in layers of not more than nine (9) inches in thickness, at moisture contents at or near optimum, and be compacted to a minimum density of 95 percent of the maximum dry density as determined by ASTM designation D-698 (Standard Proctor). Portions of the on-site natural soils beneath the topsoil may be suitable for use as new fill to raise grades, generally over large, open areas. Silt, clay, and wet granular soils are not suitable for reuse as fill in trenches, or adjacent to foundation stem walls or retaining walls.

Proper moisture control is essential to reduce the amount of compactive effort necessary to achieve the desired densities. A vibratory smooth drum roller is preferred for granular material.

Small hand-operated compactors should be used in confined areas; granular fills are generally more readily compacted to the required densities in such applications.

It is recommended that well-graded granular soils be utilized as backfill in new utility trenches and alongside below grade walls to reduce the potential for consolidation and settlement of the fill. All fill soils must be placed and compacted under engineering-controlled conditions, to provide suitable support for overlaying structures and roadways. Additional guidance can be provided at the time of construction in the selection process for grade-raising fill and trench backfill.

The selection of fill materials for various applications should be done in consultation with the soils engineer. Similarly, the evaluation of the subgrade and placement and compaction of fill for structural applications should be monitored and tested by a qualified representative of the soils engineer.

5.3 FOUNDATION EVALUATION

The proposed structure (B-1 through B-6, B-9 through B-11) may be supported by a conventional spread foundation system. Based upon the planned finished floor elevation (EL. 760), interior and exterior footings (including the skywalk) will bear at about EL. 758.5 and EL. 756, respectively. However, fill was encountered at the borings to depths of about 2 to 3.5 feet (EL. 758.5 to EL. 756) below grade. In addition, buried topsoil was present to a depth of about 3.5 feet (EL. 756.5) at B-5. Such materials are not suitable for support and all foundations must be extended to through the fill and any buried topsoil to bear upon underlying natural soils or upon compacted structural fill (or lean concrete) used to replace the unsuitable soils. Some nominal undercutting may be necessary for frost depth footings. Undercuts of up to about 2.5 feet below interior footings are estimated to be necessary. However, some variation should be expected. Conventional spread footings bearing upon suitable natural soils, or upon compacted structural fill or lean concrete mix, may be designed for a net allowable soil pressure of 4,000 psf. Some undercutting of soft, loose, unstable, or otherwise unsuitable natural soils may also be necessary.

It should be noted that although use of the net allowable soil pressure may be sufficient to resist a bearing capacity failure, other factors will influence the final design of the proposed skywalk footings, including lateral and eccentric loads, and overturning moments. The foundations must be of adequate size and be placed at a sufficient depth to resist such loads, forces and moments. The significance and impact of these factors as they pertain to the structural behavior of the proposed foundation system must be carefully considered and evaluated. Additionally, the bearing pressure outlined above must not be exceeded (including eccentric, cyclic, or other loads). Proper placement and compaction of backfill soils above and alongside the foundation must be performed.

The suitability of the existing soils for support of the proposed foundations must be determined by testing by a qualified geotechnical engineer during construction, utilizing static cone penetrometer tests or dynamic cone penetrometer tests for cohesive and granular soils, respectively. Soft, loose, or otherwise unsuitable materials not disclosed by the borings, may

be encountered in the foundation excavations at the bearing elevations. If unsuitable existing soil is present, it must be removed throughout a zone extending one foot laterally for each two feet removed below the foundation, on either side of the planned footing. The over-excavated area must be backfilled with structural compacted fill.

In lieu of the use of compacted structural fill, lean concrete mix can be used to replace the unsuitable soils. The foundation excavations should be about 4 inches wider than the proposed footing width and must extend to suitable natural bearing soils. The concrete must be placed immediately after excavation to avoid intrusion of soil into the excavation. The concrete should contain sufficient aggregate and cement to attain a 28-day compressive strength of at least 1000 psi. Some sloughing or caving of the overlying soils may be experienced. Should this occur during concrete placement, the area must be removed and recast. Additionally, should caving become extensive (such as can more typically occur within granular or soft clay soil), it may be necessary to substantially widen excavations to avoid soil intrusion into the concrete. This may result in the use of additional concrete quantities significantly in excess of preconstruction budget estimates.

All perimeter footings must be placed at a depth of at least 4 feet (or deeper if required by local code or in accordance with customary local practice) below the finished grade for frost protection. Due to periodic severity of winters in this area, it is recommended that footings in poorly heated or unheated areas of the building also be placed at least 4 feet below the adjacent exterior grade. Interior footings not subject to frost action may be placed at a shallow depth of at least 18 inches below the floor slab, provided they bear on suitable natural soils or engineered fills. All footings must be protected from the effects of frost if construction is carried out during winter months.

It is recommended that the footings supporting individual columns have a minimum dimension of 24 inches, and continuous footings have a minimum width of 18 inches, even if the maximum recommended allowable bearing pressure is not fully utilized. In order to minimize the effects of any slight differential movement that may occur due to variations in the character of the supporting soils and any variations in seasonal moisture contents, it is recommended that all foundations be suitably reinforced to make them as rigid as needed.

In general, the performance of the foundation system on this site is dependent on the various factors discussed herein. The excavation, preparation, and concreting of foundations should be monitored and tested by a representative of the soils engineer.

5.4 FLOOR SLAB SUBGRADES

Prior to constructing the floor slabs, and prior to the placement of any fill used to raise grades, the exposed subgrade must be prepared utilizing the proofrolling procedures described previously. In areas that exhibit soft, yielding or unstable soil conditions, the following remedial measures are recommended to provide a stable subgrade. It is recommended that the proofrolling operations be monitored by a representative of the geotechnical engineer so that a firm, suitable subgrade is present prior to placement of new fills, or to construction of floor slabs.

Localized wet, soft or unstable areas should be undercut to such depths determined necessary in the field to reach stable material. The overexcavations should then be backfilled with imported crushed stone, such as a 1¼-inch dense graded base specified in Section 305 of the WisDOT Standard Specifications, placed and compacted as recommended in the Site Preparation section of this report. If relatively thick zones or areas of extensive yielding (such as may occur in fill zones) are observed that cannot be stabilized by normal discing, aeration and recompaction procedures, undercutting and replacement with crushed stone and geotextile fabric (if needed) may also be required in these areas.

The floor slabs may be designed utilizing an estimated modulus of subgrade reaction of 125 pci based on the presence of suitable and stable soils, prepared as discussed in this report. However, this is based on common range values obtained from 1 ft. x 1 ft. plate load tests on specific soil types. Depending on how the slab load is applied, the value may need to be modified for larger areas using the following:

Modulus of Subgrade Reaction $k_s = \left(\frac{k}{B}\right)$ for cohesive soil

$k_s = k\left(\frac{B+1}{2B}\right)^2$ for cohesionless soil

where: k_s = coefficient of vertical subgrade reaction for loaded area
k = coefficient of vertical subgrade reaction for a 1x1 foot square area
B = width of area loaded, in feet

The final design and detailing should be performed by a qualified structural engineer based on the intended slab use, loading conditions and anticipated subgrade conditions.

A granular mat, which can be designed as a drainage layer, should be provided below floor slabs. This must be a minimum of six (6) inches in thickness and properly compacted. In moisture sensitive areas, a vapor barrier may be placed beneath the floor slab or base course; however, it is recommended that the architect be consulted in this regard. The proper use of a vapor barrier may not completely prevent moisture beneath or on top of slabs. If the base course contains sharp particles, a cushion layer of sand approximately 2 inches in thickness may be required to provide protection from puncture.

The floor slabs must be suitably reinforced to make them as rigid as necessary and proper joints provided at the junction of slabs and the foundation system so that a small amount of independent movement can occur without causing damage. Large floor areas must be provided with joints at frequent intervals (maximum spacing of 30 times the slab thickness, per ACI) to compensate for concrete volume changes (shrinkage). Where the slab will be supporting live loads, such as moving vehicles, joints must be keyed or dowelled to permit proper load transfer. It is recommended that appropriate construction methods and curing procedures be used to minimize shrinkage and curling of the floor slabs.

5.5 EXTERIOR/UNHEATED AREA SLABS

Based upon the borings, entry slabs, sidewalks, aprons, and other slabs in some exterior or unheated areas may bear upon silty or clayey soils. Such materials are highly frost susceptible and poorly drained. Slabs placed directly upon such soils are subject to heaving and subsequent settlement due to freeze/thaw cycles. This can result in cracking, misalignment, and other related effects (especially at joints). It is recommended that consideration be given to limited undercutting of the frost susceptible materials to a depth of 1 to 2 feet below the slab, and replacement with well graded, properly placed and compacted granular soils. A properly designed underdrain system connected to the municipal sewer (if permissible) or directed to on-site stormwater management areas should also be incorporated to reduce the potential effects of freeze/thaw cycles.

5.6 UTILITY CONSTRUCTION

In general, the on-site soils (with the exception of buried topsoil) can be used for support of utility lines. However, some undercutting of soft, loose, or otherwise unsuitable soils, in conjunction with the placement of crushed stone or other suitable granular backfill may be necessary to establish a stable working mat and/or bearing subgrade. In addition, all utilities must bear below the depth of any buried topsoil, or the buried topsoil must be completely removed and replaced with compacted structural fill. The use of shoring, bracing, or trench boxes will be required for excavations. Utility construction should be performed in accordance with “The Standard Specifications for Sewer and Water Line Construction” for the State of Wisconsin.

It is recommended that well graded granular soils such as those specified in Tables 37 and 39 of the Standard Specification for Sewer and Water Construction be utilized as backfill in utility trenches to reduce the potential for consolidation and settlement of the backfill. All fill soils must be properly placed and compacted under engineering-controlled conditions to provide suitable support for overlaying structures and roadways. Silty and clayey soils, organic soils, and wet granular materials are not recommended for use as backfill within utility trenches due to the substantial difficulty of obtaining proper compaction in confined areas. Substantial importing of suitable fill will likely be required.

As with all excavation work, all open cut trenches must be properly shored and braced as required by applicable federal and state OSHA codes, and as necessary to protect life and property.

6 CONSTRUCTION CONSIDERATIONS

6.1 GROUNDWATER CONTROL

Groundwater was encountered during auger advancement at B-1 and B-9 at depths of about 28.5 and 33.5 feet (EL. 731.5 and EL. 726), respectively, below the ground surface. Groundwater was encountered in the open boreholes upon completion and removal of the augers at B-1 and B-2 at depths of about 13 and 12 feet (EL. 749 and EL. 748.5), respectively,

below grade. On the basis of the observations, no major difficulty with groundwater is expected to be experienced during typical shallow foundation and utility excavation work. For low volume perched zones, a filtered sump pump may suffice for control. However, for excavations encroaching upon or extending below the groundwater, or for larger volume perched zones, prolonged dewatering with a series of sump pumps may be necessary to facilitate construction.

Every effort should be made to keep excavations dry. Discharge water from roof drains should be directed away from the building, and the site grading direct runoff to catch basins, so that the potential for the softening of the foundation subgrade soils is reduced.

Seasonal variations in precipitation, site drainage conditions, soil permeability, and other factors can cause groundwater to be present in the upper soils at varying times of the year, including during construction.

6.2 EXCAVATIONS AND SITE DRAINAGE

Sloping, shoring or bracing of the excavation sidewalls will be necessary to facilitate construction and to protect life and property. Some sloughing and caving may be experienced within unprotected excavations. The degree of excavation instability problems is dependent upon the depth and length of time that excavations remain open, excavation bank slopes, water levels and the effectiveness of any dewatering systems. All excavation work must be performed in accordance with OSHA and local building code requirements.

Where excavations encroach upon or extend below the groundwater or perched zones and into organic, granular, or soft clay soils, a substantially unstable subgrade may develop when the confining effect of the overburden is removed. Significant sloughing or caving of sidewalls may also occur. Some overexcavation of softened or loosened soils, in conjunction with the use of a crushed stone working mat, may be necessary to establish a stable bearing subgrade. Additionally, significantly widened excavations may result, or be required to maintain or achieve sidewall stability.

All excavations must be performed with caution and utilize methods which will prevent undermining or destabilization of buildings, utilities, pavements, sidewalks or other structures. The use of a properly designed shoring and bracing, sheet piling, or underpinning system must be utilized as necessary to adequately protect buildings, utilities, pavements, and other structures. This must be performed by an experienced specialty contractor. Additionally, extreme care must be used during the installation of any bracing system, especially those using driven or vibratory methods, in order to avoid damaging existing buildings, utilities, and other structures. Consideration should be given to the performance of video and/or photographic documentation of the condition of nearby buildings, utilities, and other structures prior to installation.

Every effort should be made to provide adequate drainage across the site during construction, and to prevent ponding of runoff on the subgrade. These soils are also subject to erosion caused by runoff, and erosion control measures should be implemented where needed or required by local ordinances.

It is mandated that excavations, whether they be for utility trenches, basement excavations or footing excavations, be constructed in accordance with current Occupational Safety and Health Administration (OSHA) guidelines to protect workers and others during construction. PSI recommends that these regulations be strictly enforced; otherwise, workers could be in danger and the owner(s) and the contractor(s) could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

PSI is providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

6.3 SEISMIC DESIGN CONSIDERATIONS

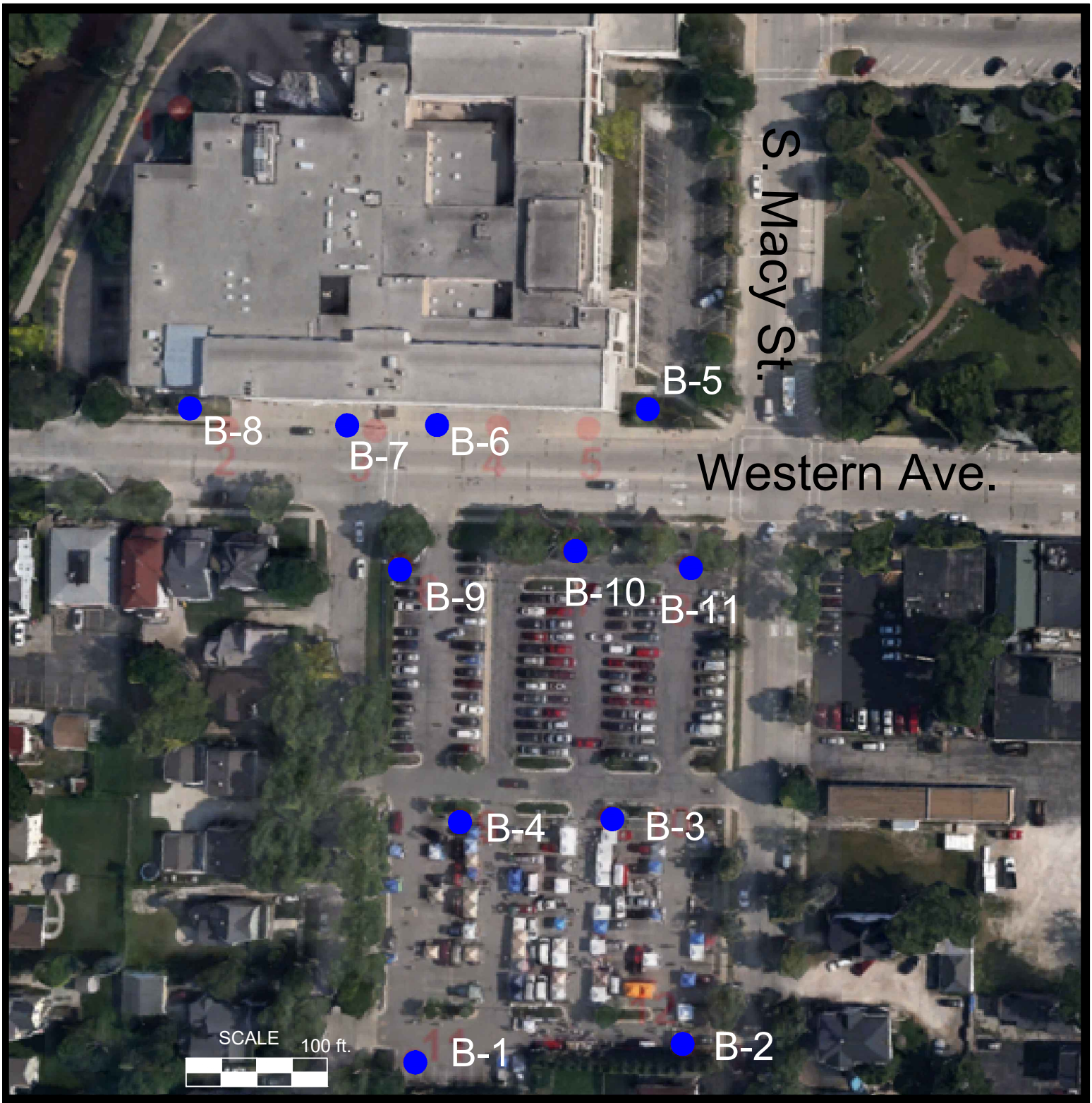
The soils encountered in the borings are considered to meet the criteria for Site Class D in accordance with 1613.2.5.2 of the International Building Code-2018 (which directs to the simplified design procedure outlined in ASCE 7 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures).

7 GENERAL COMMENTS

This geotechnical exploration and foundation evaluation has been prepared to aid in the evaluation of the foundation conditions on this site. The recommendations presented herein are based on the available soil information and the design information provided. Any changes in the design information or building locations should be brought to the attention of PSI to determine if modifications in the recommendations are required. The final design plans and specifications should also be reviewed by PSI to determine that the recommendations presented herein have been interpreted and implemented as intended.

This geotechnical study has been conducted in a manner consistent with that level of care ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. The findings, recommendations and opinions contained herein have been promulgated in accordance with generally accepted practice in the fields of foundation engineering, soils mechanics, and engineering geology. No other representations expressed or implied, and no warranty or guarantee is included or intended in this report.

It is recommended that the earthwork and foundation operations be monitored by the soils engineer, to test and evaluate the bearing capacities, and the selection, placement and compaction of controlled fills.



Boring Location Map

Fond du Lac County Jail
Fond du Lac, WI

intertek psi

Geotechnical Services
608 N. Stanton St.
Ripon, WI 54971
Phone (920) 745-2200

Date: 05/28/25 Drawn by: de

N

LEGEND

● Soil Boring Location

Proposal No. 00922860

intertek psi

SOIL BORING LOG: B - 1

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 13, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 760.0	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
1 759.0	4" ASPHALT 8" Light brown SAND with gravel, trace silt, moist (BASE COURSE FILL)	1-SS	10			2	PID 10.1
2 758.0	Brown SAND with gravel and silt, moist (FILL). Possible petroleum odor.	2-SS				6	PID 163.2
3 757.0						10	PID 158.9
4 756.0	Reddish brown CLAY with silt, trace gravel, moist. Slight possible petroleum odor.	3-SS	13	3.5	3.3	22	PID 50.1
5 755.0							
6 754.0							
7 753.0		4-SS	13	4.0	4.33	23	PID 39.1
8 752.0	Reddish brown CLAY with silt, trace gravel, moist.						
9 751.0		5-SS	14	3.25		23	PID 6.5
10 750.0							
11 749.0							
12 748.0							
13 747.0							▼
14 746.0		6-SS	11	3.5	2.87	26	PID 17.8
15 745.0							
16 744.0							
17 743.0							
18 742.0							
19 741.0		7-SS	9	1.25	1.90	30	PID 13.5
20 740.0							
21 739.0							
22 738.0							
23 737.0							
24 736.0		8-SS	9	2.5	2.72	29	PID 8.7
25 735.0							
26 734.0							
27 733.0							
28 732.0							
29 731.0	Gray CLAY with silt, very moist	9-SS	9			22	PID 3.2
30 730.0							
31 729.0							
32 728.0							
33 727.0							
34 726.0	Brown CLAY with silt, trace gravel, moist	10-SS	13	2.5	2.72	12	PID 12.1
35 725.0							
36 724.0							
37 723.0							
38 722.0							
39 721.0		11-SS	22	3.5		13	PID ND
40 720.0	**END OF BORING @ 40 FEET**						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: 28.5 ± feet below ground surface (EL. 731.5±)

Water Level $_{\text{upon completion}}$: 13 ± feet below ground surface (EL. 749.0±)

Caved at $_{\text{upon completion}}$: 13 ± feet below ground surface (EL. 749.0±)

Delay Time: NA

Water Level $_{\text{delayed}}$: NA

Caved at $_{\text{delayed}}$: NA

ADDITIONAL COMMENTS:

▼ ND=No Detect

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

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SOIL BORING LOG: B - 2

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 13, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION — GROUND SURFACE ELEVATION: 760.5	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
	6" ASPHALT						
1 759.5	18" Gray GRAVEL with sand, trace silt, damp (BASE COURSE FILL)	1-SS	10			2	PID ND
2 758.5		2-SS				7	
3 757.5	Reddish brown CLAY with silt, trace gravel, moist. Possible petroleum odor.						
4 756.5		3-SS	13	3.5	3.71	24	PID 111.7
5 755.5							
6 754.5							
7 753.5		4-SS	11	3.5	2.72	26	PID 37.6
8 752.5							
9 751.5		5-SS	13	3.75		25	PID 9.7
10 750.5							
11 749.5							
12 748.5							
13 747.5							
14 746.5		6-SS	12	3.5	3.36	25	PID ND
15 745.5							
16 744.5							
17 743.5							
18 742.5							
19 741.5		7-SS	14	3.75	4.95	24	PID ND
20 740.5	Reddish brown CLAY with silt, very moist						
21 739.5							
22 738.5							
23 737.5							
24 736.5		8-SS	18	3.0		28	PID ND
25 735.5							
26 734.5							
27 733.5							
28 732.5							
29 731.5		9-SS	11	4.0	4.53	27	PID ND
30 730.5							
31 729.5							
32 728.5							
33 727.5							
34 726.5		10-SS	17	3.0	2.47	14	PID ND
35 725.5							
36 724.5							
37 723.5	Gray CLAY with silt, trace sand and gravel, moist						
38 722.5							
39 721.5		11-SS	18	3.75		15	PID ND
40 720.5							
	END OF BORING @ 40 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: None encountered

Water Level $_{\text{upon completion}}$: 12 ± feet below ground surface (EL. 748.5±)

Caved at $_{\text{upon completion}}$: 12 ± feet below ground surface (EL. 748.5±)

Delay Time: NA

Water Level $_{\text{delayed}}$: NA

Caved at $_{\text{delayed}}$: NA

ADDITIONAL COMMENTS:

ND=No Detect

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

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SOIL BORING LOG: B - 3

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 13, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION — GROUND SURFACE ELEVATION: 760.0	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
1 / 759.0	5" ASPHALT						
	13" Light brown SAND with gravel, damp (BASE COURSE FILL)	1-SS	35			2	PID 4.0
2 / 758.0	Gray GRAVEL, damp (FILL). Possible petroleum odor.	2-SS				2	PID 61.8
3 / 757.0							
4 / 756.0	Reddish brown CLAY with silt, trace gravel, moist	3-SS	12	3.5	3.56	23	PID17.3
5 / 755.0							
6 / 754.0							
7 / 753.0		4-SS	14	3.5	3.98	23	PID 5.1
8 / 752.0							
9 / 751.0		5-SS	12	3.75		24	PID 2.4
10 / 750.0							
11 / 749.0							
12 / 748.0							
13 / 747.0							
14 / 746.0		6-SS	10	3.75	2.05	27	PID 33.7
15 / 745.0							
16 / 744.0							
17 / 743.0							
18 / 742.0							
19 / 741.0		7-SS	12	2.0	3.05	25	PID 7.7
20 / 740.0							
21 / 739.0							
22 / 738.0							
23 / 737.0							
24 / 736.0		8-SS	15	3.75	3.46	23	PID 24.5
25 / 735.0							
26 / 734.0							
27 / 733.0							
28 / 732.0							
29 / 731.0	Gray SILT with sand, moist	9-SS	15			21	PID 28.6
30 / 730.0							
31 / 729.0							
32 / 728.0							
33 / 727.0							
34 / 726.0	Brown CLAY with silt, moist	10-SS	24	4.5+	5.36	13	PID 2.2
35 / 725.0							
36 / 724.0							
37 / 723.0							
38 / 722.0							
39 / 721.0		11-SS	30	4.5	3.71	14	PID 3.0
40 / 720.0							
	END OF BORING @ 40 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: None encountered

Water Level $_{\text{upon completion}}$: None encountered

Caved at $_{\text{upon completion}}$: 23 ± feet below ground surface (EL. 737.0±)

Delay Time: NA

Water Level $_{\text{delayed}}$: NA

Caved at $_{\text{delayed}}$: NA

ADDITIONAL COMMENTS:

ND=No Detect

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

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SOIL BORING LOG: B - 4

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 13, 2025

DEPTH/EL. (feet)		VISUAL SOIL CLASSIFICATION — GROUND SURFACE ELEVATION: 760.0	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
		5" ASPHALT						
1	759.0	13" Light brown SAND with gravel, trace silt, damp (BASE COURSE FILL)	1-SS	6			2	PID ND
2	758.0	Brown and gray CLAY with silt and sand, trace gravel, moist (FILL)	2-SS		3.5		27	PID 18.5
3	757.0							
4	756.0	Reddish brown CLAY with silt, trace sand, moist	3-SS	15	4.25		22	PID 1.5
5	**755.0**							
6	754.0							
7	753.0	Reddish brown CLAY with silt, trace gravel, moist	4-SS	17	4.5+	4.95	23	PID 2.3
8	752.0							
9	751.0	Reddish brown CLAY with silt, moist	5-SS	10	3.25	3.64	25	PID ND
10	**750.0**							
11	749.0							
12	748.0							
13	747.0							
14	746.0		6-SS	12	3.75	4.33	25	PID ND
15	**745.0**							
16	744.0							
17	743.0							
18	742.0							
19	741.0		7-SS	10	3.25	3.05	25	PID ND
20	**740.0**							
21	739.0							
22	738.0							
23	737.0							
24	736.0		8-SS	9	2.25	2.89	26	PID ND
25	**735.0**							
26	734.0							
27	733.0							
28	732.0							
29	731.0		9-SS	11	2		20	PID ND
30	**730.0**							
31	729.0							
32	728.0							
33	727.0							
34	726.0	Gray CLAY with silt and sand, trace gravel, moist	10-SS	17	2.75		11	PID ND
35	**725.0**							
36	724.0							
37	723.0							
38	722.0							
39	721.0	Gray CLAY with silt, trace sand and gravel, moist	11-SS	28	4.5+	4.53	13	PID ND
40	**720.0**							
		END OF BORING @ 40 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: None encountered

Water Level $_{\text{upon completion}}$: None encountered

Caved at $_{\text{upon completion}}$: 28 ± feet below ground surface (EL. 732.0±)

Delay Time: NA

Water Level $_{\text{delayed}}$: NA

Caved at $_{\text{delayed}}$: NA

ADDITIONAL COMMENTS:

ID=No Detect

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

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SOIL BORING LOG: B - 5

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 14, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 760.0	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
	5" Dark brown SILT with sand, trace gravel, damp (TOPSOIL FILL)					13	PID 0.3
1 759.0	6" Brown CLAY with silt and sand, moist (FILL)	1-SS	7			21	PID ND
2 758.0	12" Brown SAND with gravel, moist (FILL)	2-SS				4	PID ND
3 757.0	Dark brown CLAY with silt, trace gravel, moist (BURIED TOPSOIL)					17	PID ND
4 756.0		3-SS	14	4.5+	4.95	21	PID 7.6
5 755.0							
6 754.0		4-SS	18	4.5+	5.77	21	PID ND
7 753.0							
8 752.0		5-SS	15	4.0	5.56	23	PID ND
9 751.0							
10 750.0							
11 749.0		6-SS	12	3.0	3.30	26	PID ND
12 748.0							
13 747.0							
14 746.0		7-SS	11	3.75	3.63	24	PID ND
15 745.0	Reddish brown CLAY with silt, moist						
16 744.0							
17 743.0							
18 742.0		8-SS	13	4.0	3.54	25	PID ND
19 741.0							
20 740.0							
21 739.0							
22 738.0							
23 737.0							
24 736.0							
25 735.0							
26 734.0							
27 733.0							
28 732.0							
29 731.0	Reddish brown CLAY with silt, trace gravel, moist	8-SS	10	4.0	3.38	25	PID ND
30 730.0							
	END OF BORING @ 30 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: None encountered

Water Level $_{\text{upon completion}}$: None encountered

Caved at $_{\text{upon completion}}$: 5± feet below ground surface (EL. 755.0±)

Delay Time: N/A

Water Level $_{\text{delayed}}$: N/A

Caved at $_{\text{delayed}}$: N/A

ADDITIONAL COMMENTS:

ND=No Detect

Moved 40 feet northeast to avoid utilities

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

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SOIL BORING LOG: B - 6

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 14, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 760.0	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
1 759.0	6" CONCRETE						
	6" Gray GRAVEL with sand, damp (BASE COURSE FILL)	1-SS	11			5	PID ND
2 758.0	Black SAND with clay, milled asphalt, and gravel, moist (FILL)	2-SS				20	PID 4.3
3 757.0							
4 756.0		3-SS	14	4.5	4.95	22	PID ND
5 755.0							
6 754.0	Reddish brown CLAY with silt, trace sand, moist						
7 753.0		4-SS	16	4.5		19	PID ND
8 752.0							
9 751.0		5-SS	13	4.5	4.53	23	PID ND
10 750.0							
11 749.0							
12 748.0							
13 747.0	Reddish brown CLAY with silt, trace gravel, moist						
14 746.0		6-SS	11	3.5	3.54	22	PID ND
15 745.0							
16 744.0							
17 743.0							
18 742.0							
19 741.0		7-SS	9	3.75	2.56	25	PID ND
20 740.0							
21 739.0							
22 738.0							
23 737.0							
24 736.0	Reddish brown CLAY with silt, moist	8-SS	8	3.0	1.90	28	PID ND
25 735.0							
26 734.0							
27 733.0							
28 732.0							
29 731.0		8-SS	11	4.0	3.30	20	PID ND
30 730.0							
	END OF BORING @ 30 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: None encountered ∨

Water Level $_{\text{upon completion}}$: None encountered ▼

Caved at $_{\text{upon completion}}$: 4± feet below ground surface (EL. 756.0±) ⊥

Delay Time: N/A --

Water Level $_{\text{delayed}}$: N/A ¥

Caved at $_{\text{delayed}}$: N/A ⊥

ADDITIONAL COMMENTS:

ND=No Detect

Moved 40 feet west per client request

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

intertek psi

SOIL BORING LOG: B - 7

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 14, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 759.5	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
	6" CONCRETE						
1 758.5	Light brown SAND with gravel, damp (FILL)	1-SS	9			4	PID 0.3
2 757.5		2-SS				3	PID 9.0
3 756.5							
4 755.5	Reddish brown CLAY with silt, moist	3-SS	17	4.5	4.12	20	PID 64.4
5 754.5							
6 753.5		4-SS	16	4.5+	5.56	22	PID 3.0
7 752.5							
8 751.5							
9 750.5	Reddish brown CLAY with silt, trace gravel, moist	5-SS	16	4.5+	4.95	23	PID 15.9
10 749.5							
11 748.5							
12 747.5							
13 746.5							
14 745.5		6-SS	12	4.5+	4.33	25	PID 2.0
15 744.5							
16 743.5							
17 742.5							
18 741.5							
19 740.5		7-SS	11	3.5	3.54	23	PID ND
20 739.5							
21 738.5							
22 737.5							
23 736.5							
24 735.5	Reddish brown CLAY with silt, moist	8-SS	13	3.5	3.63	23	PID ND
25 734.5							
26 733.5							
27 732.5							
28 731.5							
29 730.5		8-SS	11	2.0	3.54	23	PID ND
30 729.5							
	END OF BORING @ 30 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: None encountered

Water Level $_{\text{upon completion}}$: None encountered

Caved at $_{\text{upon completion}}$: 4 ± feet below ground surface (EL. 755.5±)

Delay Time: N/A

Water Level $_{\text{delayed}}$: N/A

Caved at $_{\text{delayed}}$: N/A

ADDITIONAL COMMENTS:

ND=No Detect

Moved 20 feet northwest per client request

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

SOIL BORING LOG: B - 8

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 14, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION GROUND SURFACE ELEVATION: 760.0	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
	7" Dark brown SILT with sand, damp (TOPSOIL FILL)	1-SS	8				PID ND
1 / 759.0	Gray GRAVEL with sand, damp (FILL)	2-SS					PID ND
2 / 758.0							
3 / 757.0							
4 / 756.0	**END OF BORING @ 3.5 FEET DUE TO UNKNOWN OBSTRUCTION**						
5 / 755.0							
6 / 754.0							
7 / 753.0							
8 / 752.0							
9 / 751.0							
10 / 750.0							

FIELD OBSERVATIONS:

Water Level during drilling: None encountered

Water Level upon completion: None encountered

Caved at upon completion: N/A

Delay Time: N/A

Water Level delayed: N/A

Caved at delayed: N/A

ADDITIONAL COMMENTS:

ND=No Detect

Moved 30 feet northwest to avoid utilities

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

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SOIL BORING LOG: B - 9

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 15, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION — GROUND SURFACE ELEVATION: 759.5	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
1 / 758.5	7" ASPHALT 5" Light brown SAND with gravel, moist (BASE COURSE FILL)	1-AS	21				PID ND
2 / 757.5	Light brown SAND with gravel, trace silt, moist (FILL)	2-SS					PID 1.3
3 / 756.5							
4 / 755.5		3-SS	7	4.5	4.33		PID ND
5 / 754.5							
6 / 753.5							
7 / 752.5		4-SS	14	4.5+	4.74		PID ND
8 / 751.5							
9 / 750.5	Reddish brown CLAY with silt, trace gravel, moist	5-SS	9	4.0	4.74		PID ND
10 / 749.5							
11 / 748.5							
12 / 747.5							
13 / 746.5							
14 / 745.5		6-SS	11	4.5	3.63		PID ND
15 / 744.5							
16 / 743.5							
17 / 742.5							
18 / 741.5							
19 / 740.5		7-SS	10	3.5	3.54		PID ND
20 / 739.5							
21 / 738.5							
22 / 737.5							
23 / 736.5							
24 / 735.5	Reddish brown CLAY with silt, moist	8-SS	10	3.75	4.33		PID ND
25 / 734.5							
26 / 733.5							
27 / 732.5							
28 / 731.5							
29 / 730.5		9-SS	11	4.25	4.53		PID ND
30 / 729.5							
31 / 728.5							
32 / 727.5							
33 / 726.5							
34 / 725.5		10-SS	13	3.75	1.98		PID ND
35 / 724.5							
36 / 723.5	Gray CLAY with silt, trace gravel, moist						
37 / 722.5							
38 / 721.5							
39 / 720.5	Brown CLAY with silt and gravel, moist	11-SS	16				PID ND
40 / 719.5							
	END OF BORING @ 40 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: 33.5 ± feet below ground surface (EL. 726.0±)

Water Level $_{\text{upon completion}}$: None encountered

Caved at $_{\text{upon completion}}$: 5 ± feet below ground surface (EL. 754.5±)

Delay Time: NA

Water Level $_{\text{delayed}}$: NA

Caved at $_{\text{delayed}}$: NA

ADDITIONAL COMMENTS:

ND=No Detect

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

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SOIL BORING LOG: B - 10

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 15, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION — GROUND SURFACE ELEVATION: 759.5	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
1 / 758.5	7" ASPHALT						
	10" Light brown SAND with gravel, moist (BASE COURSE FILL)	1-SS	7			3	PID ND
2 / 757.5							PID 1.4
	Reddish brown CLAY with silt and gravel, moist (FILL)	2-SS		3.25		19	
3 / 756.5							
4 / 755.5		3-SS	13	4.5+	5.36	21	PID 0.6
5 / 754.5							
6 / 753.5							
7 / 752.5		4-SS	12	4.5+	5.77	22	PID 1.8
8 / 751.5							
9 / 750.5	Reddish brown CLAY with silt, trace gravel, moist	5-SS	10	4.5+	7.97	26	PID 7.2
10 / 749.5							
11 / 748.5							
12 / 747.5							
13 / 746.5							
14 / 745.5		6-SS	8	3.0	2.83	27	PID 0.8
15 / 744.5							
16 / 743.5							
17 / 742.5							
18 / 741.5							
19 / 740.5		7-SS	8	2	0.99	27	PID ND
20 / 739.5							
21 / 738.5							
22 / 737.5							
23 / 736.5							
24 / 735.5	Reddish brown CLAY with silt, moist	8-SS	9	4.5+	8.97	26	PID ND
25 / 734.5							
26 / 733.5							
27 / 732.5							
28 / 731.5							
29 / 730.5		9-SS	9	4.25	3.79	25	PID ND
30 / 729.5							
31 / 728.5							
32 / 727.5							
33 / 726.5							
34 / 725.5		10-SS	16			21	PID ND
35 / 724.5							
36 / 723.5	Brown CLAY with silt, trace sand, moist						
37 / 722.5							
38 / 721.5							
39 / 720.5	Gray CLAY with silt, trace gravel, moist	11-SS	17	4.5	4.33	15	PID ND
40 / 719.5							
	END OF BORING @ 40 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: None encountered

Water Level $_{\text{upon completion}}$: None encountered

Caved at $_{\text{upon completion}}$: 12 ± feet below ground surface (EL. 747.5±)

Delay Time: NA

Water Level $_{\text{delayed}}$: NA

Caved at $_{\text{delayed}}$: NA

ADDITIONAL COMMENTS:

ND=No Detect

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

intertek psi

SOIL BORING LOG: B - 11

Project: Fond du Lac County Jail **Project No.:** 00922860

Location: Fond du Lac, WI **Drill Date:** May 15, 2025

DEPTH/EL. (feet)	VISUAL SOIL CLASSIFICATION — GROUND SURFACE ELEVATION: 760.0	SAMPLE NO.	N (bpf)	Qp (tsf)	Qu (tsf)	MC (%)	REMARKS
0 / 760.0	7" ASPHALT						
1 / 759.0	11" Light brown SAND with gravel, moist	1-SS	16			2	PID ND
2 / 758.0	Light brown SAND with gravel and silt, moist (FILL)	2-SS				5	PID ND
3 / 757.0							
4 / 756.0	Reddish brown CLAY with silt, trace gravel, moist	3-SS	8	4.5+	4.74	22	PID 0.5
5 / 755.0							
6 / 754.0							
7 / 753.0		4-SS	13	3.75	3.30	22	PID 2.2
8 / 752.0							
9 / 751.0		5-SS	10	3.25	3.30	24	PID ND
10 / 750.0							
11 / 749.0							
12 / 748.0							
13 / 747.0							
14 / 746.0		6-SS	9	3.5	2.89	25	PID ND
15 / 745.0							
16 / 744.0							
17 / 743.0							
18 / 742.0							
19 / 741.0		7-SS	8	3.0	2.14	26	PID ND
20 / 740.0							
21 / 739.0	Reddish brown CLAY with silt, moist						
22 / 738.0							
23 / 737.0							
24 / 736.0		8-SS	10	2.5	2.39	21	PID ND
25 / 735.0							
26 / 734.0							
27 / 733.0							
28 / 732.0							
29 / 731.0		9-SS	10	3.5	2.31	16	PID ND
30 / 730.0							
31 / 729.0							
32 / 728.0							
33 / 727.0							
34 / 726.0		10-SS	19	4.25	1.98	13	PID ND
35 / 725.0							
36 / 724.0	Gray CLAY with silt, trace sand, moist						
37 / 723.0							
38 / 722.0							
39 / 721.0	Gray CLAY with silt AND GRAVEL, trace sand, moist	11-SS	17	3.25		13	PID ND
40 / 720.0							
	END OF BORING @ 40 FEET						

FIELD OBSERVATIONS:

Water Level $_{\text{during drilling}}$: None encountered

Water Level $_{\text{upon completion}}$: None encountered

Caved at $_{\text{upon completion}}$: 12 ± feet below ground surface (EL. 748.0±)

Delay Time: NA

Water Level $_{\text{delayed}}$: NA

Caved at $_{\text{delayed}}$: NA

ADDITIONAL COMMENTS:

ND=No Detect

Note: Lines of stratification represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and/or boring locations. Transitions may also be gradual.

GENERAL NOTES

SAMPLE IDENTIFICATION

Visual soil classifications are made in general accordance with the Unified Soil Classification System on the basis of textural and particle size categorization, and various soil behavior characteristics. Visual classifications should be substantiated by appropriate laboratory testing when a more exact soil identification is required to satisfy specific project applications criteria.

PARTICLE SIZE ±

Boulders: 8 inches	Coarse Sand: 2 to 4mm	Silt: 0.005 to 0.074mm
Cobbles: 3 to 8 inches	Medium Sand: 0.42 to 2mm	Clay: -0.005mm
Gravel: 5mm to 3 inches	Fine Sand: 0.074 to 0.42mm	

DRILLING & SAMPLING SYMBOLS

SS: Split-spoon, 2" O.D. by 1 3/8" I.D.
ST: Shelby Tube, 2" O.D. or 3" O.D., as noted in text
AU: Auger Sample
DB: Diamond Bit
CB: Carbide Bit
RB: Roller Bit
WS: Wash Sample
BS: Bag Sample
HA: Hand Auger

SOIL PROPERTY SYMBOLS

N: Standard penetration count, indicating number of blows of a 140 lb. Hammer with a 30 inch drop, required to advance a split-spoon sampler one foot.
Qu: Unconfined compressive strength, tons per square foot (tsf)
Qp: Calibrated hand penetrometer resistance, tsf
MC: Moisture Content, %
LL: Liquid Limit PL: Plastic Limit PI: Plasticity Index
Dd: Dry Density, pounds per cubic foot (pcf)
PID: Photoionization Detector (Hnu meter) volatile vapor level, ppm

SOIL RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

NON-COHESIVE SOILS		COHESIVE SOILS		
Classifier	N-Value Range	Classifier	Qu Range (tsf)	N-Value Range
Very loose	0 - 3	Very soft	0 – 0.25	0 - 2
Loose	3 - 7	Soft	0.25 – 0.5	2 – 5
Medium dense	7 - 15	Medium stiff	0.5 – 1.0	5 – 10
Dense	15 - 38	Stiff	1.0 – 2.0	10 - 14
Very dense	38 +	Very stiff	2.0 – 4.0	14 - 32
		Hard	4.0 +	32 +

GROUNDWATER

Approximate Groundwater level at time noted on soil boring log, measured in open bore hole unless otherwise noted. Groundwater levels often vary with time, and are affected by soil permeability characteristics, weather conditions, and lateral damage conditions.